

TAB #7 S

BRAND/ MANUFACTURER	PRODUCT
Sashco	Big Stretch Elastic
SC Johnson	Windex Cleaner with Ammonia D
SC Johnson	Windex Multi Surface Cleaner
SealBest	Blacktop Crack Filler
SealBest	Neoprene Roof Cement
Shell Rotella	15W-40 Oil
Soudal	Boss 370 HVAC Grade Silicone Sealant
STI	Firestop Putty
STI	Firestop Putty Pads
STI	AMW Mineral Wool Insulation
STI	Series SSS Sealant
Sylvania	Fluorescent Lamps
Sylvania	Compact Fluorescent Lamps
Sylvania	T5 Fluorescent Lamps
Sylvania	DE Tubular Hid Lamps
Sylvania	High Pressure Mercury Lamps
Sylvania	High Pressure Sodium Lamps
Sylvania	High Pressure Xenon Lamps
Sylvania	Metal Halide Lamps
Sylvania	Ceramic Metal Halide Arc Tubes
Sylvania	LED Lamps
Sylvania	Incandescent Lamps
Sylvania	Tungsten—Halogen Lamps

SAFETY DATA SHEET

Issuing Date 13-Jul-2015

Revision Date 27-Oct-2015

Revision Number 3



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Big Stretch

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Caulking

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Sashco, Inc.

Supplier Address 10300 E. 107th Place
Brighton
CO
80601
US

Supplier Phone Number Phone:303-286-7271
Contact Phone303-286-7271

Supplier Email info@sashco.com

Emergency telephone number 800-535-5053

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Serious eye damage/eye irritation	Category 2
Carcinogenicity	Category 1B



Specific target organ toxicity (repeated exposure)	Category 2
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GHS Label elements, including precautionary statements

Emergency Overview		
Signal word	Danger	
Hazard Statements		
Causes serious eye irritation		
May cause cancer		
May cause damage to organs through prolonged or repeated exposure		
Appearance	Various Colors	Physical state Paste Liquid
		Odor Sweet

Precautionary Statements - Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Do not breathe dust/fume/gas/mist/vapors/spray
 Wash face, hands and any exposed skin thoroughly after handling
 Wear eye/face protection

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention.

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

88.5925% of the mixture consists of ingredient(s) of unknown toxicity

Other information

May be harmful if swallowed
 Toxic to aquatic life with long lasting effects

Interactions with Other Chemicals

Use of alcoholic beverages may enhance toxic effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Limestone	1317-65-3	10 - 30	*
Petroleum distillates, hydrotreated heavy paraffinic	64742-54-7	3 - 7	*
Ethylene glycol	107-21-1	1 - 5	*
Ethylene oxide-Nonylphenol polymer	9016-45-9	1 - 5	*
Ammonium hydroxide	1336-21-6	0.1 - 1	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice

Show this safety data sheet to the doctor in attendance.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

Skin contact

Wash with soap and water.

Inhalation

Remove to fresh air.

Ingestion

Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects Burning sensation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Uniform Fire Code

Irritant: Liquid

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Products

None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Limestone 1317-65-3	-	TWA: 15 mg/m ³ TWA: 5 mg/m ³ (vacated) TWA: 15 mg/m ³ (vacated) TWA: 5 mg/m ³	TWA: 5 mg/m ³ respirable dust TWA: 10 mg/m ³ total dust
Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7	TWA: 5 mg/m ³ , as oil mist, mineral STEL: TWA: 10 mg/m ³ , as oil mist, mineral	TWA: 5 mg/m ³ , as oil mist, mineral	
Ethylene glycol 107-21-1	Ceiling: 100 mg/m ³ aerosol only	(vacated) Ceiling: 50 ppm (vacated) Ceiling: 125 mg/m ³	

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992). See section 15 for national exposure control parameters

Appropriate engineering controls

Engineering Measures

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection

If there is a risk of contact: Wear safety glasses with side shields (or goggles). None required for consumer use.

Skin and body protection

Wear protective gloves and protective clothing.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state	Liquid	Odor	Sweet
Appearance	Viscous paste		
Color	Various colors	Odor Threshold	No information available
Property	Values	Remarks	Method
pH	9.0	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	100 °C / 212 °F	None known	
Flash Point	>93.3 °C / >200 °F	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Specific Gravity	1.1	None known	
Water Solubility	Miscible in water	None known	
Solubility in other solvents	No data available	None known	
Partition coefficient: n-octanol/water	No data available	None known	
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	
Explosive properties	No data available		
Oxidizing properties	No data available		

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	



10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. May cause redness, itching, and pain. May cause temporary eye irritation.
Skin contact	Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethylene glycol 107-21-1	= 4000 mg/kg (Rat)	-	-
Ethylene oxide-Nonylphenol polymer 9016-45-9	-	= 1780 µL/kg (Rabbit)	-
Ammonium hydroxide 1336-21-6	= 350 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms May cause redness and tearing of the eyes.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7	A2	Group 1		X

ACGIH (American Conference of Governmental Industrial Hygienists)

A2 - Suspected Human Carcinogen

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure (STOT RE).

Chronic Toxicity Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects.

Target Organ Effects Eyes. Respiratory system. Skin. Gastrointestinal tract (GI). Central Nervous System (CNS). Cardiovascular system. Heart. Kidney.

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)

2,008.00 mg/kg

ATEmix (dermal)

20,083,764.00

12. ECOLOGICAL INFORMATION

This product contains a chemical which is listed as a marine pollutant according to DOT. The percentage of marine pollutant or severe marine pollutant is below values regulated by DOT

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Petroleum distillates, hydrotreated heavy paraffinic 64742-54-7		96h LC50: > 5000 mg/L (Oncorhynchus mykiss)		48h EC50: > 1000 mg/L
Ethylene glycol 107-21-1	96h EC50: 6500 - 13000 mg/L (Pseudokirchneriella subcapitata)	96h LC50: = 41000 mg/L (Oncorhynchus mykiss) 96h LC50: 14 - 18 mL/L (Oncorhynchus mykiss) 96h LC50: = 40761 mg/L (Oncorhynchus mykiss) 96h LC50: = 27540 mg/L (Lepomis macrochirus) 96h LC50: = 16000 mg/L (Poecilia reticulata) 96h LC50: 40000 - 60000 mg/L (Pimephales promelas)	EC50 = 10000 mg/L 16 h EC50 = 620 mg/L 30 min EC50 = 620.0 mg/L 30 min	48h EC50: = 46300 mg/L
Ammonium hydroxide 1336-21-6		96h LC50: = 8.2 mg/L (Pimephales promelas)		48h EC50: = 0.66 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

Chemical Name	Log Pow
Ethylene glycol 107-21-1	-1.93

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

California Hazardous Waste Codes 281

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Ammonium hydroxide 1336-21-6	Toxic Corrosive

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name

NOT REGULATED

Hazard Class

NON REGULATED

Marine Pollutant

N/A

This product contains a chemical which is listed as a marine pollutant according to DOT
The percentage of marine pollutant or severe marine pollutant is below values regulated by DOT

TDG

Not regulated

MEX

Not regulated

ICAO

Not regulated

IATA

Proper Shipping Name

Not regulated

Hazard Class

NON REGULATED

N/A

IMDG/IMO

Hazard Class

Not regulated

N/A

RID

Not regulated

ADR

Not regulated

ADN

Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
 DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Ethylene glycol - 107-21-1	107-21-1	1 - 5	1.0
Ammonium hydroxide - 1336-21-6	1336-21-6	0.1 - 1	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ammonium hydroxide 1336-21-6	1000 lb			X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Ethylene glycol 107-21-1	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Ammonium hydroxide 1336-21-6	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Quartz - 14808-60-7	Carcinogen
Ethyl alcohol - 64-17-5	Carcinogen Developmental

U.S. State Right-to-Know Regulations



Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Limestone 1317-65-3	X	X	X		
Ethylene glycol 107-21-1	X	X	X	X	X
Ammonium hydroxide 1336-21-6	X	X	X	X	

International Regulations

Mexico

National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Limestone 1317-65-3 (10 - 30)		Mexico: TWA= 10 mg/m ³ Mexico: STEL= 20 mg/m ³
Ethylene glycol 107-21-1 (1 - 5)		Mexico: Ceiling 100 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

Canada

WHMIS Hazard Class

D2A - Very toxic materials
D2B - Toxic materials



16. OTHER INFORMATION

NFPA	Health Hazards	1	Flammability	0	Instability	0	Physical and Chemical Hazards - Personal Protection
HMIS	Health Hazards	2 *	Flammability	0	Physical Hazard	0	X

Chronic Hazard Star Legend * = Chronic Health Hazard

Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
Revision Date	27-Oct-2015
Revision Note	No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet



Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



WINDEX® COMMERCIAL LINE GLASS CLEANER WITH AMMONIA-D®

Version 1.2

Print Date 01/11/2018

Revision Date 03/14/2016

SDS Number 350000014153

1. PRODUCT AND COMPANY IDENTIFICATION

Product information

Product name : WINDEX® COMMERCIAL LINE GLASS CLEANER WITH AMMONIA-D®

Recommended use : Hard Surface Cleaner

Manufacturer, importer, supplier : S.C. Johnson & Son, Inc.
1525 Howe Street
Racine WI 53403-2236

Telephone : +18005585252
Emergency telephone number : 24 Hour Medical Emergency Phone: (866)231-5406
24 Hour International Emergency Phone: (703)527-3887
24 Hour Transport Emergency Phone: (800)424-9300

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System (GHS) Classification

This product does not meet the criteria for classification in any hazard class according to regulation OSHA 29 CFR 1910.1200.

Labelling

Precautionary statements

Other hazards : None identified

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product does not contain hazardous chemicals at or above a reportable level as defined by OSHA 29 CFR 1910.1200

For additional information on product ingredients, see www.whatsinsidescjohson.com.

4. FIRST AID MEASURES

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



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Eye contact	: No special requirements
Skin contact	: No special requirements
Inhalation	: No special requirements.
Ingestion	: No special requirements

5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Specific hazards during firefighting	: Container may melt and leak in heat of fire.
Further information	: Fight fire with normal precautions from a reasonable distance. Standard procedure for chemical fires. Wear full protective clothing and positive pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	: Wash thoroughly after handling.
Environmental precautions	: Outside of normal use, avoid release to the environment.
Methods and materials for containment and cleaning up	: Dike large spills. Clean residue from spill site.

7. HANDLING AND STORAGE

Handling	
Precautions for safe handling	: Avoid contact with skin, eyes and clothing. For personal protection see section 8. KEEP OUT OF REACH OF CHILDREN AND PETS.

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200

**WINDEX® COMMERCIAL LINE GLASS CLEANER WITH AMMONIA-D®**

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Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers : Keep container closed when not in use.

Other data : Stable under normal conditions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Occupational Exposure Limits**

ACGIH or OSHA exposure limits have not been established for this product or reportable ingredients unless noted in the table above.

Personal protective equipment

Respiratory protection : No special requirements.

Hand protection : No special requirements.

Eye protection : No special requirements.

Skin and body protection : No special requirements.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form : liquid

Color : blue

Odor : floral

Odour Threshold : Test not applicable for this product type

pH : 10.7

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200

**WINDEX® COMMERCIAL LINE GLASS CLEANER WITH AMMONIA-D®**

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at (25 C)

Melting point/freezing point : 0 C**Initial boiling point and
boiling range** : 100 C**Flash point** : does not flash**Evaporation rate** : Test not applicable for this product type**Flammability (solid, gas)** : Does not sustain combustion.**Upper/lower flammability or
explosive limits** : Test not applicable for this product type**Vapour pressure** : Calculated 31.7 hPa**Vapour density** : Test not applicable for this product type**Relative density** : 1.00 g/cm3 at 25 C**Solubility(ies)** : soluble**Partition coefficient: n-
octanol/water** : Test not applicable for this product type**Auto-ignition temperature** : Test not applicable for this product type**Decomposition temperature** : Heating can release hazardous gases.**Viscosity, dynamic** : similar to water

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



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Viscosity, kinematic	:	similar to water
Oxidizing properties	:	Test not applicable for this product type
Volatile Organic Compounds Total VOC (wt. %)*	:	0.2 % - additional exemptions may apply *as defined by US Federal and State Consumer Product Regulations
Other information	:	None identified

10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	:	If accidental mixing occurs and toxic gas is formed, exit area immediately. Do not return until well ventilated.
Conditions to avoid	:	Direct sources of heat.
Incompatible materials	:	Do not mix with bleach or any other household cleaners. Strong bases
Hazardous decomposition products	:	Thermal decomposition can lead to release of irritating gases and vapours.

11. TOXICOLOGICAL INFORMATION

Emergency Overview	:	This product does not meet the criteria for classification in any hazard class according to regulation OSHA 29 CFR 1910.1200.
Acute oral toxicity	:	LD50 > 5000 mg/kg
Acute inhalation toxicity	:	LC50 > 10 mg/L

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200

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Acute dermal toxicity : LD50 > 5000 mg/kg

GHS Properties	Classification	Routes of entry
Acute toxicity	No classification proposed	Oral
Acute toxicity	No classification proposed	Dermal
Acute toxicity	No classification proposed	Inhalation - Dust and Mist
Acute toxicity	No classification proposed	Inhalation - Vapour
Acute toxicity	No classification proposed	Inhalation - Gas
Skin corrosion/irritation	No classification proposed	-
Serious eye damage/eye irritation	No classification proposed	-
Skin sensitisation	No classification proposed	-
Respiratory sensitisation	No classification proposed	-
Germ cell mutagenicity	No classification proposed	-
Carcinogenicity	No classification proposed	-
Reproductive toxicity	No classification proposed	-
Specific target organ toxicity - single exposure	No classification proposed	-
Specific target organ toxicity - repeated exposure	No classification proposed	-
Aspiration hazard	No classification proposed	-

Aggravated Medical Condition : None known.

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



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12. ECOLOGICAL INFORMATION

Product : The product itself has not been tested.

Toxicity

The ingredients in this formula have been reviewed and no adverse impact to the environment is expected when used according to label directions.

No environmental data required.

Other adverse effects : None known.

13. DISPOSAL CONSIDERATIONS

Consumer may discard empty container in trash, or recycle where facilities exist.

14. TRANSPORT INFORMATION

Please refer to the Bill of Lading/receiving documents for up-to-date shipping information.

Land transport

Not classified as dangerous in the meaning of transport regulations.

Sea transport

Not classified as dangerous in the meaning of transport regulations.

Air transport

Not classified as dangerous in the meaning of transport regulations.

15. REGULATORY INFORMATION

Notification status : All ingredients of this product are listed or are excluded from

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200

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listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Notification status : All ingredients of this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).

California Prop. 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION**HMIS Ratings**

Health	1
Flammability	0
Reactivity	0

NFPA Ratings

Health	1
Fire	0
Reactivity	0
Special	-

This information is being provided in accordance with the Occupational Safety and Health Administration (OSHA) regulation (29 CFR 1910.1200). The information supplied is designed for workplaces where product use and frequency of exposure exceeds that established for the labeled consumer use.

Further information

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



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This document has been prepared using data from sources considered to be technically reliable. It does not constitute a warranty, expressed or implied, as to the accuracy of the information contained herein. Actual conditions of use are beyond the seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

Prepared by	SC Johnson Global Safety Assessment & Regulatory Affairs (GSARA)
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Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



WINDEX® ADVANCED GLASS & MULTI SURFACE CLEANER

Version 1.1

Print Date 04/03/2015

Revision Date 02/25/2015

SDS Number 350000011604

1. PRODUCT AND COMPANY IDENTIFICATION

Product information

Product name : WINDEX® ADVANCED GLASS & MULTI SURFACE CLEANER

Recommended use : Hard Surface Cleaner

Manufacturer, importer, supplier : S.C. Johnson & Son, Inc.
1525 Howe Street
Racine WI 53403-2236

Telephone : +18005585252
Emergency telephone number : 24 Hour Medical Emergency Phone: (866)231-5406
24 Hour International Emergency Phone: (703)527-3887
24 Hour Transport Emergency Phone: (800)424-9300

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System (GHS) Classification

This product does not meet the criteria for classification in any hazard class according to regulation OSHA 29 CFR 1910.1200.

Labelling

Precautionary statements

Other hazards : None identified

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product does not contain hazardous chemicals at or above a reportable level as defined by OSHA 29 CFR 1910.1200

For additional information on product ingredients, see www.whatsinsidescjohnson.com.

4. FIRST AID MEASURES

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



WINDEX® ADVANCED GLASS & MULTI SURFACE CLEANER

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Print Date 04/03/2015

Revision Date 02/25/2015

SDS Number 350000011604

Eye contact	: No special requirements
Skin contact	: No special requirements
Inhalation	: No special requirements.
Ingestion	: No special requirements

5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Specific hazards during firefighting	: Container may melt and leak in heat of fire.
Further information	: Fight fire with normal precautions from a reasonable distance. Standard procedure for chemical fires. Wear full protective clothing and positive pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	: Wash thoroughly after handling.
Environmental precautions	: Outside of normal use, avoid release to the environment.
Methods and materials for containment and cleaning up	: Dike large spills. Clean residue from spill site.

7. HANDLING AND STORAGE

Handling	
Precautions for safe handling	: Avoid contact with skin, eyes and clothing. For personal protection see section 8. KEEP OUT OF REACH OF CHILDREN AND PETS.

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200

**WINDEX® ADVANCED GLASS & MULTI SURFACE CLEANER**

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Revision Date 02/25/2015

SDS Number 350000011604

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers : Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Occupational Exposure Limits**

ACGIH or OSHA exposure limits have not been established for this product or reportable ingredients unless noted in the table above.

Personal protective equipment

Respiratory protection : No special requirements.

Hand protection : No special requirements.

Eye protection : No special requirements.

Skin and body protection : No special requirements.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form : liquid

Color : blue transparent

Odor : pleasant

Odour Threshold : No data available

pH : 10.8

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



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Melting point/freezing point	: No data available
Initial boiling point and boiling range	: No data available
Flash point	: > 95 °C > 203 °F Method: Tag Closed Cup (TCC)
Evaporation rate	: No data available
Flammability (solid, gas)	: The product is not flammable.
Upper/lower flammability or explosive limits	: No data available
Vapour pressure	: No data available
Vapour density	: No data available
Relative density	: 1 g/cm ³ at 25 °C
Solubility(ies)	: completely soluble
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, dynamic	: No data available

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200

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Revision Date 02/25/2015

SDS Number 350000011604

Viscosity, kinematic : No data available**Oxidizing properties** : No data available**Volatile Organic Compounds** : 0 % - additional exemptions may apply
Total VOC (wt. %)* : *as defined by US Federal and State Consumer Product Regulations**Other information** : None identified

:

10. STABILITY AND REACTIVITY**Possibility of hazardous reactions** : If accidental mixing occurs and toxic gas is formed, exit area immediately. Do not return until well ventilated.**Conditions to avoid** : Direct sources of heat.**Incompatible materials** : Do not mix with bleach or any other household cleaners.
Strong bases**Hazardous decomposition products** : Thermal decomposition can lead to release of irritating gases and vapours.

11. TOXICOLOGICAL INFORMATION**Emergency Overview** : This product does not meet the criteria for classification in any hazard class according to regulation OSHA 29 CFR 1910.1200.**Acute oral toxicity** : LD50
estimated
> 5,000 mg/kg**Acute inhalation toxicity** : LC50

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200

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estimated
> 2.58 mg/l

Acute dermal toxicity : LD50
estimated
> 5,000 mg/kg

GHS Properties	Classification	Routes of entry
Acute toxicity	No classification proposed	-
Skin corrosion/irritation	No classification proposed	-
Serious eye damage/eye irritation	No classification proposed	-
Skin sensitisation	No classification proposed	-
Respiratory sensitisation	No classification proposed	-
Germ cell mutagenicity	No classification proposed	-
Carcinogenicity	No classification proposed	-
Reproductive toxicity	No classification proposed	-
Specific target organ toxicity - single exposure	No classification proposed	-
Specific target organ toxicity - repeated exposure	No classification proposed	-
Aspiration hazard	No classification proposed	-

Aggravated Medical Condition : None known.

12. ECOLOGICAL INFORMATION

Product : The product itself has not been tested.

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200

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Toxicity

The ingredients in this formula have been reviewed and no adverse impact to the environment is expected when used according to label directions.

No environmental data required.

Other adverse effects : None known.

13. DISPOSAL CONSIDERATIONS

Consumer may discard empty container in trash, or recycle where facilities exist.

14. TRANSPORT INFORMATION

Please refer to the Bill of Lading/receiving documents for up-to-date shipping information.

Land transport

Not classified as dangerous in the meaning of transport regulations.

Sea transport

Not classified as dangerous in the meaning of transport regulations.

Air transport

Not classified as dangerous in the meaning of transport regulations.

15. REGULATORY INFORMATION

Notification status : All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200

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Notification status : All ingredients of this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).

California Prop. 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION**HMIS Ratings**

Health	1
Flammability	1
Reactivity	0

NFPA Ratings

Health	1
Fire	1
Reactivity	0
Special	-

This information is being provided in accordance with the Occupational Safety and Health Administration (OSHA) regulation (29 CFR 1910.1200). The information supplied is designed for workplaces where product use and frequency of exposure exceeds that established for the labeled consumer use.

Further information

This document has been prepared using data from sources considered to be technically reliable. It does not constitute a warranty, expressed or implied, as to the accuracy of the information contained herein. Actual conditions of use are beyond the seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200



WINDEX® ADVANCED GLASS & MULTI SURFACE CLEANER

Version 1.1

Print Date 04/03/2015

Revision Date 02/25/2015

SDS Number 350000011604

Prepared by

SC Johnson Global Safety Assessment &
Regulatory Affairs (GSARA)



SAFETY DATA SHEET

Issuing Date 9-April-2015

Revision Date 31-Aug-2015

Revision Number 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

GHS Product Identifier

Product Name: SealBest Blacktop Crack Filler

Other Means of Identification

Product Code(s): H5550

Synonyms None

Recommended Use of the Chemical and Restrictions on Use

Recommended Use: No Information Available

Uses Advised Against: No Information Available

Manufacturer's Details

Manufacturer Address

ThorWorks Industries, Inc.
2520 S. Campbell St.
Sandusky, OH 44870
www.sealbest.com
1-800-326-1994

Emergency Telephone Number

Emergency Telephone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200).

GHS Label Elements, Including Precautionary Statements

Emergency Overview

Signal Word

Warning



- Harmful if swallowed
- May cause skin irritation

Appearance: Black

Physical State: Liquid

Odor: Asphaltic

Precautionary Statements

Prevention	•None
General Advice	•None
Storage	•None
Disposal	•None

Hazard Not Otherwise Classified (HNOC)

Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %	Trade Secret
Asphalt	8052-42-4	40-60	*
Kaolin	1332-58-7	10-20	*
Polymer Blend	Proprietary	0-15	*

*The exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of Necessary First-Aid Measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact Wash off immediately with soap and plenty of water. In the case of skin irritation or allergic reactions, see a physician.

Inhalation Move to fresh air. If symptoms persist, call a physician.

Ingestion Drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most Important Symptoms/Effects, Acute and Delayed

Most Important Symptoms/Effects No information available

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary

Notes to Physician Treat Symptomatically. May cause sensitization by skin contact.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon Dioxide (CO₂). Dry Chemical. Foam. Water Fog.

Unsuitable Extinguishing Media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

No information available

Explosion Data

Sensitivity to Mechanical Impact None

Sensitivity to Static Discharge None

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure- demand MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Personal Precautions: Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

Environmental Precautions

Environmental Precautions: See Section 12 for additional Ecological Information

Methods and Materials for Containment and Cleaning Up

Methods for Containment: Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up: Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling:

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes, and clothing. Wear personal protective equipment. Avoid breathing vapors or mists. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling.

Conditions for Safe Storage, Including Any Incompatibilities

Storage:

Keep container tightly closed

Incompatible Products:

Strong oxidizing agents. Acids.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Asphalt 8052-42-4	TWA: 0.5 mg/m ³ benzene soluble aerosol fume, inhalable fraction	-	Ceiling: 5 mg/m ³ fume 15 min.
Kaolin 1332-58-7	-	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 10 mg/m ³ total dust (vacated) TWA 5 mg/m ³ respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust

Appropriate Engineering Controls

Engineering Measures:

Showers
Eyewash Stations
Ventilation Systems

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection: If splashes are likely to occur, wear: Safety glasses with side shields.

Skin and Body Protection: Impervious gloves.

Respiratory Protection: No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Hygiene Measures:

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State: Liquid
Odor: Asphaltic

Appearance: Black
Odor Threshold: No Information Available

Property	Values	Remarks/Method
pH	No data available	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	100° C	None known
Flash Point	No data available	None known
Evaporation Rate	1.8	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor Pressure	No data available	None known
Vapor Density	<1	None known
Specific Density	1.15 @ 77 F	None known

Property	Values	Remarks/Method
Water Solubility	Easily dispersible	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known
Flammable Properties	Not Flammable	
Explosive Properties	No data available	
Oxidizing Properties	No data available	

Other Information

VOC Content	Less than 15 g/L
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10. STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical Stability:	Stable under recommended storage conditions.
Possibility of Hazardous Reactions:	None under normal processing.
Hazardous Polymerization:	Hazardous polymerization does not occur.
Conditions to Avoid:	None known
Incompatible Materials:	Strong oxidizing agents. Acids.
Hazardous Decomposition Products:	Carbon Monoxide (CO), Carbon Dioxide (CO ₂), Hydrogen Sulfide, Nitrogen Dioxide

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information

Inhalation:	May cause irritation of respiratory tract.
Eye Contact:	Contact with eyes may cause irritation.
Skin Contact:	May cause irritation.
Ingestion:	Ingestion may cause stomach discomfort.

Chemical Name	LD50 Oral	LD50 Dermal	LD50 Inhalation
Asphalt	5000 mg/kg (Rat)	>2000 mg/kg (Rabbit)	-

Symptoms Related to the Physical, Chemical, and Toxicological Characteristics

Symptoms:	No information available.
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Delayed and Immediate Effects and also Chronic Effects from Short and Long Term Exposure

Sensitization:	No information available.
Mutagenic Effects:	No information available.
Carcinogenicity:	The table below indicates whether each agency has listed any ingredient as a carcinogen. The IARC, NTP, and OSHA do not list asphalt as a carcinogen. In general, the oxidation of polycyclic aromatic hydrocarbons destroys their carcinogenic potential. Petroleum asphalt, shale oil asphalts, and coal tars show distinct variation in their relative carcinogenicity for experimental animals.

Chemical Name	ACGIH	IARC	NTP	OSHA
Asphalt	A3	Group 2B	Reasonably Anticipated	X

ACGIH: (American Conference of Governmental Industrial Hygienists)

A3 – Animal Carcinogen

IRAC: (International Agency for Research on Cancer)

Group 2B – Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

Reasonably Anticipated – Reasonably Anticipated to be a Human Carcinogen

OSHA: (Occupational Safety & Health Administration)

X – Present

Reproductive Toxicity:	No information available.
STOT - Single Exposure:	No information available.
STOT – Repeated Exposure:	No information available.
Aspiration Hazard:	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Persistence and Degradability: No information available.

Bioaccumulation

Chemical Name	Log Pow
Asphalt	6.006

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods: This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging: Do not re-use empty containers.

14. TRANSPORTATION INFORMATION

DOT: Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA – Complies

DSL/NDSL – Complies

Legend

TSCA – United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL – Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS Number	Weight %	SARA 313 – Threshold Values %
Asphalt	8052-42-4	20-40	0.1

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65: This product does not contain any Proposition 65 chemicals.

U.S. State Right-To-Know Regulations

"X" designates that the ingredients are listed on the state right to know list.

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Asphalt	X	X	X		X
Kaolin	X	X	X		X
Carbon Black	X	X	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number: Not applicable

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazard: 1	Flammability: 0	Instability: 0	<u>Physical and Chemical Hazards-</u>
<u>HMIS</u>	Health Hazard: 1	Flammability: 0	Physical Hazard: 0	<u>Personal Protection: X</u>

Revision Date: 31-Aug-2015

Revision Note: Supersedes 9-April-2015

General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.



H.M.I.S. RATING	
Health	1*
Flammability	2
Reactivity	0
Protective Equip.	B

Material Safety Data Sheet – OSHA 174

Material Safety Data Sheet

May be used to comply with OSHA's Hazard communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

US Department of Labor

Occupational Safety and Health Administration
(Non-Mandatory Form) Form Approved
OMB No. 1218-0072

SealBest Professional Grade Neoprene Roof Cement

Product #: H9065

SKU#: 153-8814

SECTION I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: ThorWorks Industries, Inc.	Telephone Number for General Information: Thorworks Industries: 1-419-626-4375
Address: 2520 South Campbell Street Sandusky, Ohio 44870	Emergency Spill Telephone No.: Chemtrec: 1-800-424-9300
Date Prepared: November 29, 2010	

SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS #	% By Weight	OSHA PEL	ACGIH TLV
Proprietary Non Dangerous Ingredients		~50		
Solvent naphtha (petroleum), light aromatic	64742-95-6	<14	100 ppm	100 ppm
Mineral Spirits (P)	8052-41-3	~42	100 ppm	100 ppm

Note: The above components and their percentages are provided for health and safety purposes, ONLY. This document should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

SECTION III - HAZARD IDENTIFICATION

Emergency Overview:

Appearance and odor: Black, thick mastic with a mild hydrocarbon odor.

Warning Statements: COMBUSTIBLE, HARMFUL OR FATAL IF SWALLOWED, SKIN IRRITANT

Potential health effects

Likely Routes of Exposure:

Eye contact: Conjunctivitis, irritation, tearing, burning.

Skin contact: Irritation or inflammation. Allergic skin reactions may occur. Dermatitis.

Inhalation: Irritation to mucous membranes and respiratory tract, nausea, dizziness, and headache.

Ingestion: Unlikely route of entry. 3-5 oz. may be fatal.

Refer to Section XI for toxicological information.

Cancer Statement: IARC has listed some solvents as capable of causing skin cancer in experimental animals. Whether or not solvents can cause cancer in humans is unknown.

Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

SECTION IV - FIRST AID MEASURES

IF IN EYES: Immediately flush with large amounts of potable water. Eyelids should be held away the eyeball to ensure thorough rinsing. Get medical attention if irritation persists.

IF ON SKIN: Remove contaminated clothing and wash with soap and water.

IF INHALED: Remove affected person from source of exposure. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, give oxygen. Get medical attention.

IF INGESTED: Do not induce vomiting- aspiration hazard. If spontaneous vomiting occurs, monitor for breathing difficulty. Get immediate medical attention. 3-5 ounces may be fatal.

SECTION V - FIRE FIGHTING MEASURES

Flash Point: 105° F Tag Closed Cup LEL – 0.8% UEL 5.0%

Hazardous products of combustion: H₂S , CO, CO₂, aldehydes, and SOX

Extinguishing Media: Foam CO₂, or dry chemical extinguishers. Use bunker gear and self contained breathing apparatus. There is a potential for containers to rupture violently in fires. Vapors from product may explode if ignited in a confined space.

Unusual Fire & Explosion Hazards: Do not direct water on substance. Water and foam may cause frothing. Treat as a fuel fire.

SECTION VI - ACCIDENTAL RELEASE MEASURES

If your facility or operation has an “oil or hazardous substance contingency plan”, activate the procedure. Take immediate steps to stop and contain the spill. Shut off all sources of ignition.

- Keep people away
- Eliminate sources of ignition
- Recover free product, add limestone, earth, or other suitable absorbents.
- Minimize skin contact and avoid breathing vapors
- Ventilate confined spaces
- Keep product out of sewers and waterways by diking or impounding
- Advise authorities if product has entered sewers, waterways, or extensive land areas
- Assure conformity with all applicable government regulations
- Dispose of in an approved facility, see Section 13, Disposal Considerations.

SECTION VII - HANDLING AND STORAGE

This liquid is volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

HANDLING: Keep containers cool, dry and away from sources of ignition. Use this product with adequate ventilation. Material is COMBUSTIBLE. Material requires electrical grounding during material transfer process to prevent fire or explosion risk from static accumulation and discharge. All electrical equipment in storage and handling areas should be installed per NFPA requirements.

STORAGE: Keep containers tightly closed when not in use. DO NOT STORE NEAR HEAT, SPARKS, FLAME, OTHER SOURCES OF IGNITION OR STRONG OXIDIZERS.

Storage Temperature: 34° F (1° C) minimum to 95° F (35° C) maximum

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTIONS

Eye protection: Wear chemical splash goggles (ANSI Z87.1) or safety glasses when working with or transferring this product. DO NOT WEAR CONTACT LENSES IN THE PRESENCE OF THIS MATERIAL UNLESS SPLASH GOGGLES ARE WORN.

Skin protection: Use chemical resistant gloves, to avoid prolonged or repeated skin contact.

Respiratory protection: Use NIOSH or MSHA approved respiratory protective equipment when airborne exposure limits are exceeded.

Ventilation: Ventilation may be used to reduce airborne concentrations. If ventilation can not reduce airborne concentrations below acceptable, limits, appropriate respiratory protection should be used.

Note: All pigments, fillers, fibers, and extenders in this product are totally encapsulated and do not pose a respirable dust hazard during installation and use of this product.

SECTION IX- PHYSICAL AND CHEMICAL PROPERTIES

Chemical Formula: Not applicable, mixture

Appearance: Black thick paste-like mastic.

Odor: Mild petroleum odor

Boiling Point: 152-199 C (Solvent)

pH: Not applicable

Melting Point: Not applicable

Specific Gravity: 1.04

Solubility in Water: Less than 0.5%

NOTE: These physical data are typical values based on material testing, but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

SECTION X - STABILITY AND REACTIVITY

Stability: Stable

Materials to Avoid: Strong oxidizers, heat, spark or open flame.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, hydrogen sulfide and sulfur Dioxide.

Hazardous Polymerization: Will not occur.

SECTION XI - TOXICOLOGICAL INFORMATION

Oral- rat LD50 (mg/kg): No data available.

Dermal- rabbit LD50 (mg/kg): No data available.

Eye Irritation- rabbit: No data available.

Skin Irritation- rabbit (24-hr exposure): No data available.

SECTION XII - ECOLOGICAL INFORMATION

This product may cause adverse environmental effects if used improperly or release to the environment through a spill. Employ best management practices to prevent this material from entering storm sewer systems, waterways or otherwise impacting plant and animal species.

SECTION XIII - DISPOSAL CONSIDERATIONS

Dispose of in an environmentally safe manner and in accordance with governmental regulations. "Empty" containers retain residue (liquid and /or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. For work on tanks, refer to OSHA regulation ANSI Z49.1 and other governmental and industrial references pertaining to cleaning, repairing, welding or other contemplated operations.

This is "RCRA" regulated hazardous waste [D001 Ignitable per 40 CFR 260.21] and must be disposed in a permitted facility. Containers are hazardous waste if not emptied completely (less than 1 inch of residue).

The transportation, storage, treatment and disposal of this waste must be conducted in accordance with all applicable federal, state, and local regulations.

SECTION XIV - TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

US DOT: Proper Shipping Name: Flammable Liquids, N.O.S.

Hot Hazard: No

Combustible Class: Yes

Hazard Class: 3.3

NA/UN Number: 1139

Packing Group: III

SECTION XV - REGULATORY INFORMATION

SARA HAZARD TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

Fire: Yes Pressure Generating: No Reactivity: No Acute: Yes Chronic: No

CA Proposition 65 Warning: This product may contain chemicals known to the State of California to cause cancer, birth defects, and/or other reproductive harm.

Refer to Section XI for OSHA/HPA Hazardous Chemical(s) and Section XIII for RCRA classification.

SECTION XVI - OTHER INFORMATION

This material has been defined as a hazardous chemical under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200)

	<u>Health</u>	<u>Fire</u>	<u>Reactivity</u>	<u>Additional Information</u>
Suggested NFPA ¹ Rating	1	2	0	
Suggested HMIS ¹ Rating	1	2	0	
Reason for revision: N/A	Supersedes MSDS Dated: N/A			

The information and recommendations contained herein are to the best of THORWORKS INDUSTRIES' knowledge and belief, accurate and reliable as of the date issued. THORWORKS INDUSTRIES does not warrant or guarantee their accuracy or reliability, and THORWORKS INDUSTRIES shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the users consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. It is also the user's responsibility to make certain that it is relying upon the most recent, updated, information and recommendations available from THORWORKS INDUSTRIES.

The Environmental Information included, as well as the Hazardous Material Identification System (HMIS) and National Fire Protection Association (NFPA) ratings have been included by THORWORKS INDUSTRIES in order to provide additional health and hazard classification information. The ratings recommended are based upon the criteria supplied by the developers of these rating systems, together with THORWORKS INDUSTRIES' interpretation of the available data.

For Other Product Information Contact:

Thorworks Industries
2520 S. Campbell St.
Sandusky, Ohio 44870
(419) 626-4375
Fax- (419) 626-5477

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Shell Rotella T4 Triple Protection 15W-40

Version 1.1 Revision Date: 04/30/2018 SDS Number: 800010026636 Print Date: 05/01/2018
Date of last issue: 05/11/2016

SECTION 1. IDENTIFICATION

Product name : Shell Rotella T4 Triple Protection 15W-40

Product code : 001F8880

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
PO Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Engine oil.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Based on available data this substance / mixture does not meet the classification criteria.

GHS label elements

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.

Response:
No precautionary phrases.

Storage:
No precautionary phrases.

Disposal:

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No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Used oil may contain harmful impurities.

Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (% w/w)
Alkaryl amine	bis(nonylphenyl)amine	36878-20-3	1 - 3
Calcium sulphonate	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	70024-69-0	0.1 - 0.99
Alkyl borate		Not Assigned	0.1 - 0.99
Dialkyl alkaryl amonomethyl dicarboxylate		Not Assigned	0.1 - 0.99
Alcohol, ethoxylated	Alcohols, C12-16, ethoxylated	68551-12-2	0.1 - 0.5
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *		Not Assigned	0 - 90

SECTION 4. FIRST-AID MEASURES

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

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In case of eye contact : Flush eye with copious quantities of water. Remove contact lenses, if present and easy to do. Continue rinsing. If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

Most important symptoms and effects, both acute and delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Indication of any immediate medical attention and special treatment needed : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : Do not use water in a jet.

Specific hazards during fire-fighting : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.

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Environmental precautions	<ul style="list-style-type: none">Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	<ul style="list-style-type: none">Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material.Reclaim liquid directly or in an absorbent.Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
Additional advice	<ul style="list-style-type: none">For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

Technical measures	<ul style="list-style-type: none">Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
Advice on safe handling	<ul style="list-style-type: none">Avoid prolonged or repeated contact with skin.Avoid inhaling vapour and/or mists.When handling product in drums, safety footwear should be worn and proper handling equipment should be used.Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
Avoidance of contact	<ul style="list-style-type: none">Strong oxidising agents.
Product Transfer	<ul style="list-style-type: none">This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.
Further information on storage stability	<ul style="list-style-type: none">Keep container tightly closed and in a cool, well-ventilated place.Use properly labeled and closable containers.Store at ambient temperature.
Packaging material	<ul style="list-style-type: none">Suitable material: For containers or container linings, use mild steel or high density polyethylene.Unsuitable material: PVC.

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Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA (Mist)	5 mg/m ³	OSHA Z-1
Oil mist, mineral		TWA (Inhal- able fraction)	5 mg/m ³	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures

: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

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Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Personal protective equipment

Respiratory protection

- No respiratory protection is ordinarily required under normal conditions of use.
- In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
- If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
- Check with respiratory protective equipment suppliers.
- Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
- Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection

Remarks

- Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material.

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Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.

Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Thermal hazards : Not applicable

Environmental exposure controls

General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : Clear amber

Odour : Slight hydrocarbon

Odour Threshold : Data not available

pH : Not applicable

pour point : -36 °C / -33 °F
Method: ASTM D97

Initial boiling point and boiling range : > 280 °C / 536 °F
estimated value(s)

Flash point : 234 °C / 453 °F
Method: ASTM D92 (COC)

Evaporation rate : Data not available

Flammability (solid, gas) : Data not available

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Upper explosion limit / upper flammability limit : Typical 10 %(V)

Lower explosion limit / Lower flammability limit : Typical 1 %(V)

Vapour pressure : < 0.5 Pa (20 °C / 68 °F)
estimated value(s)

Relative vapour density : > 1
estimated value(s)

Relative density : 0.878 (15 °C / 59 °F)

Density : 878 kg/m³ (15.0 °C / 59.0 °F)
Method: ASTM D4052

Solubility(ies)
Water solubility : negligible

Solubility in other solvents : Data not available

Partition coefficient: n-octanol/water : log Pow: > 6
(based on information on similar products)

Auto-ignition temperature : > 320 °C / 608 °F

Decomposition temperature : Data not available

Viscosity
Viscosity, dynamic : Data not available

Viscosity, kinematic : 14.9 mm²/s (100 °C / 212 °F)
Method: ASTM D445

Explosive properties : Not classified

Oxidizing properties : Data not available

Conductivity : This material is not expected to be a static accumulator.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

Chemical stability : Stable.

Possibility of hazardous reaction : Reacts with strong oxidising agents.

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tions

Conditions to avoid : Extremes of temperature and direct sunlight.

Incompatible materials : Strong oxidising agents.

Hazardous decomposition products : No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg
Remarks: Low toxicity:
Based on available data, the classification criteria are not met.

Acute inhalation toxicity : Remarks: Based on available data, the classification criteria are not met.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Low toxicity:
Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Product:

Remarks: Slightly irritating to skin., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis., Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

Product:

Remarks: Slightly irritating to the eye., Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: Not a skin sensitiser.
Based on available data, the classification criteria are not met.

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Components:

Calcium sulphonate:

Remarks: May cause an allergic skin reaction in sensitive individuals.

Remarks: Classified Skin Sensitiser Category 1B.

Alkyl borate:

Remarks: May cause an allergic skin reaction in sensitive individuals.

Remarks: Classified Skin Sensitiser Category 1B.

Dialkyl alkaryl aminomethyl dicarboxylate:

Remarks: May cause an allergic skin reaction in sensitive individuals.

Remarks: Classified Skin Sensitiser Category 1B.

Germ cell mutagenicity

Product:

: Remarks: Non mutagenic, Based on available data, the classification criteria are not met.

Carcinogenicity

Product:

Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

: Remarks: Not a developmental toxicant., Does not impair fertility., Based on available data, the classification criteria are

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not met.

STOT - single exposure

Product:

Remarks: Based on available data, the classification criteria are not met.

STOT - repeated exposure

Product:

Remarks: Based on available data, the classification criteria are not met.

Aspiration toxicity

Product:

Not an aspiration hazard.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Continuous contact with used engine oils has caused skin cancer in animal tests.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment

: Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) :
Remarks: LL/EL/IL50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.

Toxicity to daphnia and other aquatic invertebrates (Acute)

:
Remarks: LL/EL/IL50 > 100 mg/l

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toxicity) Practically non toxic:
Based on available data, the classification criteria are not met.

Toxicity to algae (Acute toxicity) : Remarks: LL/EL/IL50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to microorganisms (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Not readily biodegradable.
Major constituents are inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility : Remarks: Liquid under most environmental conditions.
If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

Product:

Additional ecological information : Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential.
Product is a mixture of non-volatile components, which will not be released to air in any significant quantities under normal conditions of use.

Poorly soluble mixture.
Causes physical fouling of aquatic organisms.

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Mineral oil does not cause chronic toxicity to aquatic organisms at concentrations less than 1 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains or in water courses

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local legislation

Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied. MARPOL Annex 1 rules apply for bulk shipments by sea.

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or

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needs to comply with in connection with transport.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
2-methylpropan-1-ol	78-83-1	100	100 (F005)
benzene	71-43-2	10	10 (D018)
benzene	71-43-2	10	*

*: Calculated RQ exceeds reasonably attainable upper limit., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

benzene 71-43-2 0.0002 %

US State Regulations

Pennsylvania Right To Know

Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8
lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623-86-0
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Diphenylamine	122-39-4

California Prop. 65

WARNING: This product can expose you to chemicals including benzene, Distillates (petroleum), hydrotreated light paraffinic, which is/are known to the State of California to cause cancer, and benzene, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substances

Distillates (petroleum), solvent-dewaxed heavy paraffinic 64742-65-0

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Distillates (petroleum), hydrotreated light paraffinic lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	64742-55-8 72623-86-0
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7

The components of this product are reported in the following inventories:

EINECS	: All components listed or polymer exempt.
TSCA	: All components listed.
DSL	: All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	: 8-hour, time-weighted average
OSHA Z-1 / TWA	: 8-hour time weighted average
Abbreviations and Acronyms	: The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists

ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road

AICS = Australian Inventory of Chemical Substances

ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

CAS = Chemical Abstracts Service

CEFIC = European Chemical Industry Council

CLP = Classification Packaging and Labelling

COC = Cleveland Open-Cup

DIN = Deutsches Institut fur Normung

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

DSL = Canada Domestic Substance List

EC = European Commission

EC50 = Effective Concentration fifty

ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals

ECHA = European Chemicals Agency

EINECS = The European Inventory of Existing Commercial Chemical Substances

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Shell Rotella T4 Triple Protection 15W-40

Version
1.1

Revision Date:
04/30/2018

SDS Number:
800010026636

Print Date: 05/01/2018
Date of last issue: 05/11/2016

EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE HPV = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Sources of key data used to compile the Safety Data Sheet : The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

Revision Date : 04/30/2018

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Shell Rotella T4 Triple Protection 15W-40

Version 1.1	Revision Date: 04/30/2018	SDS Number: 800010026636	Print Date: 05/01/2018
			Date of last issue: 05/11/2016

to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / EN

BOSS 370 HVAC Professional Grade Silicone Sealant

Safety Data Sheet



BOSS 370 HVAC Professional Grade Silicone Sealant

Safety Data Sheet

Issue date: 10/05/2021 Revision date: 11/28/2022 Version: 2.0

SECTION 1: Identification

1.1. Product identifier

Product form	: Mixture
Trade name	: BOSS 370 HVAC Professional Grade Silicone Sealant
Reference number	: 142271, 142272, 142273, 142274, 142275, 142985, 142986, 142987

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category	: Consumer use/Professional use
Use of the substance/mixture	: Sealant

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Soudal
350 Ring Road
Elizabethtown, KY 42701
(270) 769-3385

technical@soudalaccumetric.com
www.SoudalUSA.com

1.4. Emergency telephone number

Emergency number	: (800) 424-9300 CHEMTREC
	24h/24h

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.2. Label elements

Hazard pictograms (CLP): GHS classification in accordance with the OSHA Hazard communication Standard (29 CFR 1910.1200)

Signal word (CLP)	: None needed
Contains	:
Hazard Statements	: Not a hazardous substance or mixture.
Precautionary Statements	: Use only outdoors or in a well-ventilated area.

2.3. Other hazards

No data available.

SECTION 3: Ingredients

3.1. Substances

Not applicable

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3.2. Mixtures

Name	Product identifier	%	Classification
Distillates (petroleum), hydrotreated middle	(CAS-No.) 64742-46-7	≥ 16 – < 34	Aspiration Hazard – Category 1
Hydrocarbons, C15-C20, n-alkanes, isoalkanes, cyclo, < 0.03% aromatics	(CAS-No.) 64742-46-7	≤ 34	Aspiration Hazard – Category 1

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : First responders should pay attention to self-protection and use recommended clothing (chemical resistant gloves and splash protection). If potential for exposure exists, refer to section 8 for specific PPE.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.

First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell. Do not induce vomiting unless directed to do so by medical personnel.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact : Skin contact may aggravate existing dermatitis. Brief contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin.

Symptoms/effects after eye contact : May cause slight eye irritation. May cause mild discomfort.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Alcohol-resistant Foam. Carbon dioxide.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire: Carbon oxides. Silicon oxides

Unusual Fire and Explosion Hazards: Exposure to combustion products may be a hazard to health.

5.3. Advice for firefighters

Fire Fighting Procedures: Use water spray to cool unopened containers. Evacuate area. Collect contaminated fire extinguishing water separately. Do not discharge into drains. Fire residues and contaminated fire extinguisher water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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6.1.1. For non-emergency personnel

Emergency procedures:

Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

6.1.2. For emergency responders

Protective equipment

Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

6.2. Environmental precautions

Discharge into environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and material for containment and cleaning up

Wipe up or scrape up and contain for salvage or disposal. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You need to determine which regulations are applicable. For large spills, provide diking and other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.

6.4. Reference to other sections

For further information refer to section 7, 8, 11, 12, and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling

: Avoid contact with eyes. Do not swallow. Avoid prolonged or repeated contact with skin. Take care to prevent spills, waste, and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice.

Hygiene measures

: Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

Keep in properly labelled containers. Store in accordance with local, regional, and national regulations.

Incompatible products

: Strong oxidizing agents

Unsuitable materials for containers

: None known

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Distillates (petroleum) Hydrotreated middle	
OSHA Z1 (TWA)	2,000 mg/m ³ (500 ppm)
OSHA Z1 (TWA MIST)	5 mg/m ³
Hydrocarbons, C15-20, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics	
OSHA Z1 (TWA)	2,000 mg/m ³ (500 ppm)

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OSHA Z1 (TWA MIST)	5 mg/m ³
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8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses (w/ side shields)

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Use gloves chemically resistant to this material. Chlorinated polyethylene, neoprene, nitrile/butadiene rubber, polyethylene, ethyl vinyl alcohol laminate, polyvinyl chloride, Viton, polyvinyl alcohol, and butyl rubber. **NOTICE:** The selection of proper gloves for a particular application and duration of use in workplace should also take into account all relevant workplace factors such as, but no limited to: other chemicals which may be handled, physical requirements (cut/puncture resistant, dexterity thermal protection), potential body reactions to glove materials, as well as instructions/specifications provided by the glove supplier.

8.2.2.3. Respiratory protection

Respiratory protection:

Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or were indicated by your risk assessment process. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

The following types of air-purifying respirators should be effective: Organic vapor cartridge.

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Paste
Color	:	Various
Appearance	:	Smooth Homogenous Paste
Odor	:	Acetic Acid.
Odor threshold	:	Not available
Melting point	:	Not applicable
Freezing point	:	Not available
Boiling point	:	Not available
Flammability	:	Not classified as a flammability hazard
Explosive properties	:	Not available
Explosive limits	:	Not available
Lower explosive limit (LEL)	:	Not available
Upper explosive limit (UEL)	:	Not available
Flash point	:	Not applicable
Auto-ignition temperature		Not available
Decomposition temperature	:	Not available
pH	:	Not applicable
Viscosity, kinematic	:	Not available
Solubility	:	Insoluble.
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapor pressure	:	Not applicable
Vapor pressure at 50 °C	:	Not available
Density	:	960 kg/m ³ (20°C)
Relative density	:	0.96 (20°C)
Relative vapor density at 20 °C	:	Not available
Particle size	:	Not applicable
Particle size distribution	:	Not applicable
Particle shape	:	Not applicable
Particle aspect ratio	:	Not applicable
Particle aggregation state	:	Not applicable
Particle agglomeration state	:	Not applicable
Particle specific surface area	:	Not applicable
Particle dustiness	:	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

% of flammable ingredients :

9.2.2. Other safety characteristics

VOC content : 24 g/L (< 3% by volume)

SECTION 10: Stability and reactivity

10.1. Reactivity

Not classified as a reactivity hazard

10.2. Chemical stability

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Stable under normal conditions.

10.3. Possibility of hazardous reactions

Can react with strong oxidizing agents.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Avoid contact with oxidizing materials.

10.6. Hazardous decomposition products

Decomposition products can include and are not limited to: Formaldehyde.

SECTION 11: Toxicological information

11.1. Information on hazard classes

Acute toxicity (oral)	Very low toxicity if swallowed. Swallowing may result in irritation of the mouth, throat, and gastrointestinal tract. May cause nausea and vomiting.
Acute toxicity (dermal)	Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Acute toxicity (inhalation)	Brief exposure (minutes) is not likely to cause adverse effects. May cause respiratory irritation and central nervous system depression.

Distillates (petroleum), hydrotreated middles (64742-46-7)

LD50 Oral Rat	> 5,000 mg/kg
LD50 Dermal, Rabbit	> 3,160 mg/kg No deaths occurred at this concentration.
LC50, Inhalation, Rat, 4 hour, dust/mist	> 5.2 mg/L

Hydrocarbons, C15-20, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics (64742-46-7)

LD50 oral rat (male and female)	> 5,000 mg/kg
LD50 Dermal, Rabbit	> 3,1600 mg/kg
LC50, Inhalation, Rat, 4 hour, dust/mist	> 5.266 mg/L

Distillates (petroleum), hydrotreated middles (64742-46-7)

Sensitization	Did not cause allergic skin reactions when tested in guinea pigs. No relevant data found for respiratory sensitization.
STOT – Single Exposure	Available data are inadequate to determine single exposure specific target organ toxicity.
Aspiration Hazard	May be fatal if swallowed and enters airways.
STOT – Repeated Exposure	Based on available data, repeated exposures are not anticipated to cause significant adverse effects.
Carcinogenicity	For similar material(s): did not cause cancer in laboratory animals.
Teratogenicity	For similar material(s): did not cause birth defects or any other fetal effects in laboratory animals.
Reproductive toxicity	For similar material(s): in animal studies, did not interfere with reproduction.
Mutagenicity	In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Hydrocarbons, C15-20, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics (64742-46-7)

Sensitization	Did not cause allergic skin reactions when tested in guinea pigs. No relevant data found for respiratory sensitization.
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STOT – Single Exposure	Evaluation of available data suggests that this material is not an STOT-SE toxicant.
Aspiration Hazard	Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.
STOT – Repeated Exposure	Based on available data, repeated exposures are not anticipated to cause significant adverse effects.
Carcinogenicity	No relevant information found.
Teratogenicity	Did not cause birth defects or any other fetal effects in laboratory animals.
Reproductive toxicity	In animal studies, did not interfere with reproduction.
Mutagenicity	In vitro genetic toxicity studies were predominately negative. Animal genetic toxicity studies were negative.

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Distillates (petroleum), hydrotreated middles (64742-46-7)

LL50, Scophthalmus maximus (turbot), 96 hour,	> 1,028 mg/L
LL50, arcatia tonsa, 48 hour	> 3,193 mg/L
EL50, Skeletonema costatum (marine diatom), 72 hours	> 10,000 mg/L
EC50, 3 hour, OECD 209	> 100 mg/L
NOELR, Ceriodaphnia dubai (water flea) 8 d	> 100 mg/L

Hydrocarbons, C15-20, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics

LL50, Scophthalmus maximus (turbot), 96 hour	> 1,028 mg/L
EL50, Daphnia magna, Static test, 48 hour, OECD 203	210 g/mL
LL50, Arcatia tonsa, 48 hour, ISO 14669	> 3,193 mg/L
EL50, Skeletonema costatum (marine diatom) 72 hour, growth rate, ISO 10253	> 10,000 mg/L
Toxicity to bacteria (tetrahymena pyriformis), 40 hour	Growth inhibition

12.2. Persistence and degradability

Distillates (petroleum), hydrotreated middles (64742-46-7)

Persistence and degradability	Material is expected to be readily biodegradable. 10-day window: not applicable. Biodegradation: 74% Exposure Time: 28 d Method: OECD 306
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Hydrocarbons, C15-20, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics

Persistence and degradability	Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. Biodegradation: 57.5% Exposure Time: 28 d Method: OECD 301F 10 day Window: Fail Biodegradation: 74% Exposure Time: 28 d Method: OECD 306
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12.3. Bioaccumulative potential

Distillates (petroleum), hydrotreated middles (64742-46-7)

Bioaccumulative potential	No relevant data found
Hydrocarbons, C15-20, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics	
Bioaccumulative potential	No data available

12.4. Mobility in soil

Distillates (petroleum), hydrotreated middles (64742-46-7)

Mobility in Soil	No relevant data found
Hydrocarbons, C15-20, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics	
Mobility in Soil	No relevant data found

12.5. Results of PBT and vPvB assessment

The product does not meet the PBT and vPvB classification criteria

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal

13.1. Waste treatment methods

We make no guarantee or warranty of any kind that the use of disposal of this product complies with all local, state, or federal laws. It is also the obligation of each user of the product mentioned herein to determine and comply with requirements and applicable statutes.

This product is not known to be regulated under RCRA regulations. Disposal of unused portions of this product and process waste containing product should be done only after a careful evaluation and in compliance with all federal, local and state laws.

SECTION 14: Transport Information

UN Number:	N/A
UN Proper Shipping Name:	Not regulated as a dangerous good
DOT Classification:	Not regulated as a dangerous good
Packing Group:	Not regulated as a dangerous good
International Regulations:	UNRTDG Not regulated as a dangerous good IATA-DGR Not regulated as a dangerous good IMDG-Code Not regulated as a dangerous good

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SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. US Federal Regulations

TSCA

All components of this product follow the inventory listing requirements of the US Toxic Substances and Control Act (TSCA) Chemical Substances Inventory.

SARA 311 and 312: No SARA hazards.

SARA 313: This material does not contain any chemicals with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

15.1.2. US State Regulations

Pennsylvania Right to Know

The following chemicals are listed because of the additional requirements for Pennsylvania law:

Components	CAS Number
Polydimethylsiloxane hydroxy terminated	70131-67-8
Distillates (petroleum), hydrotreated middle	64742-46-7
Hydrocarbons, C15-C20, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics	64742-46-7
Silicon dioxide	7631-86-9
Amorphous fumed silica	112945-52-5

California Prop 65

WARNING: This product can expose you to chemicals including Hydrocarbons, C15-C20, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Hazard Rating System

NFPA

Health	Flammability	Instability
0	1	0

HMIS

Health	Flammability	Instability
0	1	0

Disclaimer: The data contained herein is based upon information that Soudal believes to be reliable. Users of this product have the responsibility to determine the suitability of use and to adopt all necessary precautions to ensure the safety and protection of property and persons involved in said use. All statements or suggestions are made without warranty, expressed or implied, regarding the accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof.



SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, the Korean ISHA (Notice 2009-68), the Japanese Industrial Standard JIS Z 7250: 2000, Mexican NOM018-STPS 2000, SPRING Singapore, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

TRADE/MATERIAL NAME:

RELEVANT USE of the SUBSTANCE:

USES ADVISED AGAINST:

SUPPLIER/MANUFACTURER'S NAME:

Address:

Business Phone:

Emergency Phone:

SpecSeal® Firestop Putty (SSP 100, SSP28, SSP9S pads)

Firestop and Sound Transmission

none

Specified Technologies, Inc.

210 Evans Way,

Somerville, New Jersey 08876

(908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)

U.S., Canada: 1-800-255-3924 (24 hrs)

International: +1-813-248-0585 (collect-24 hrs)

EMAIL of Competent Person for Information on SDS:

techserv@stifirestop.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Category 2, Germ Cell Mutagen Category 2, Acute Dermal Toxicity Category 5, Eye Irritation Category 2A, Skin Irritation Category 2, Skin Sensitization Category 1, Specific Target Organ Toxicity Repeated Exposure Category 2

Signal Word: Warning

Hazard Statements: H351: Suspected of causing cancer. H341: Suspected of causing genetic effects. H313: May be harmful in contact with skin. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H373: May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:

Prevention: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P260: Do not breathe vapors/fume. P271: Use only outdoors or in a well-ventilated area. P272: Contaminated work clothing should not be allowed out of the workplace. P280: Wear protective gloves, clothing, eye protection and face protection.

Response: P308 + P313: IF exposed or concerned: Get medical advice/attention. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P313: If eye irritation persists: Get medical advice/attention. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P333 + P313: If skin irritation or rash occurs: Get medical advice/attention. P312: Call a POISON CENTER or doctor if you feel unwell. P362 + P364: Take off contaminated clothing and wash it before reuse. P321: Specific treatment (remove from exposure and treat symptoms).

Storage: P403 + P233 + P405: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols: GHS07, GHS08



KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-68. Under ISHA, no differences in classification are applicable.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Aluminum Trihydrate	21645-51-2	Listed	1-17	KE-00980	Listed	50-60%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253_KOREAN ISHA: Classification: Eye Irritation Cat. 2A Hazard Codes: H319
Proprietary Polymer		Listed	Proprietary	Proprietary	Listed	20-30%	Classification Not Applicable

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Formaldehyde Polymer with Ammonia and Phenol	35297-54-2	Listed	Not Listed	KE-17082	Listed	10-15%	SELF CLASSIFICATION <u>GHS & JAPANESE JIS Z7253, KOREAN ISHA:</u> Classification: Acute Oral Toxicity Cat. 5, Skin Sensitization Cat. 1B, STOT Re Cat. 3 Hazard Codes: H303, H317, H373
Phenol	108-95-2	Listed	3-381	KE-28209	Listed	1-3%	<u>GHS & JAPANESE JIS Z7253, KOREAN ISHA:</u> Classification: Mutagenic Cat. 2, Acute Oral Toxicity Cat. 3, Acute Dermal Toxicity Cat. 3, Acute Inhalation Toxicity Cat. 3, Skin Corrosion Cat. 1B, STOT RE Cat. 2 Hazard Codes: H341, H301 + H311 + H331, H314, H373
Sulfuric Acid Compound with Graphite	12777-87-6	Not Listed	Not Listed	KE-32585	Listed	2-5%	SELF CLASSIFICATION <u>GHS & JAPANESE JIS Z7253, KOREAN ISHA:</u> Classification: Carcinogenic Cat. 2 Hazard Codes: H351i
Crystalline Silica	14808-60-7	Listed	1-548	KE-29983	Listed	Trace	SELF CLASSIFICATION <u>GHS & JAPANESE JIS Z7253, KOREAN ISHA:</u> Classification: Carcinogenic Cat. 1, STOT (Inhalation-Lungs) RE Cat. 2 Hazard Statement Codes: H350, H373
Formaldehyde	50-00-0	Listed	2-482	KE-17074	Listed	Trace	<u>GHS & JAPANESE JIS Z7253, KOREAN ISHA:</u> Classification: Carcinogenic Cat. 2, Acute Oral Toxicity Cat. 3, Acute Dermal Toxicity Cat. 3, Acute Inhalation Toxicity Cat. 3, Skin Corrosion Cat. 1B, Skin Sensitization Cat. 1 Hazard Codes: H351, H301 + H311 + H331, H314, H317
Water and Other Trace Ingredients						Balance	Classification Not Applicable

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES:

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If fumes or vapors are inhaled, remove victim to fresh air. Seek medical attention if adverse effect continues after removal to fresh air.

Eye Exposure: If this product contaminates the eyes, rinse eyes under gently running water. Remove contact lenses if easy to do. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Ingestion: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION.

If professional advice is not available, DO NOT INDUCE VOMITING. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: See Section 11.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not determined.

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.

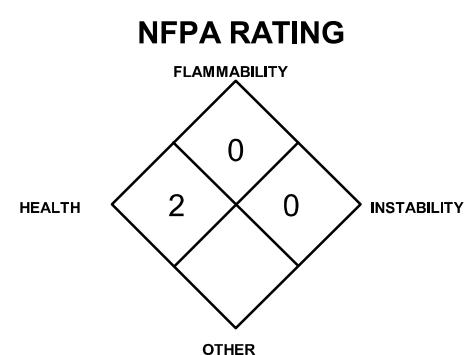
UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: No Special protective actions for fire-fighters are anticipated.



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTRAC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666).

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small Spills: Wear rubber gloves.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield.

6. ACCIDENTAL RELEASE MEASURES (Continued)

METHODS FOR CLEAN-UP AND CONTAINMENT: Spills of this product present minimal hazard.

Small Spills: Small releases can be carefully swept up or cleaned up using a damp sponge or polypsads.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and sweep-up or vacuum with non-sparking vacuum.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Close off sewers and take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment.

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this material ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics while handling this product. Wash hands thoroughly after handling this product or containers of this product. Avoid breathing fumes or vapors. Use in a well-ventilated location.

CONDITIONS FOR SAFE STORAGE: Store containers in a cool, dry location, away from direct sunlight, sources of intense heat.

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³	
Aluminum Trihydrate	21645-51-2	NE	NE	NE	NE	NE	NE	DFG MAKs: TWA = 4 mg/m ³ (inhalable fraction); 1.5 mg/m ³ (respirable fraction) DFG MAK Pregnancy Risk Classification: D	
Crystalline Silica (Quartz)	14808-60-7	0.025 (resp. fract.)	NE	<u>30 mg/m³ (total dust)</u> % SO ₂ + 2 0.1 (vacated 1989 PEL)	<u>250 mppcf (resp. dust)</u> % SiO ₂ + 5 or <u>10 mg/m³ (resp. dust)</u> 0.2 % SO ₂ + 2	0.05 (resp. dust)	NE	50, Ca	Carcinogen: IARC-1, MAK-1 (respirable fraction), NIOSH-Ca, NTP-K (respirable fraction), TLV-A2
Formaldehyde	50-00-0	SEN	0.37 (ceiling)	0.75 ppm	2 ppm	0.016 ppm	0.1 ppm, 15 min.	20 ppm (Ca)	DFG MAKs: TWA = 0.37 PEAK = 2•MAK 15-min average value, 1-hr interval, 4 per shift; 1 (ceiling) Danger of Sensitization of the Skin DFG MAK Germ Cell Mutagen Category: 5 DFG MAK Pregnancy Risk Classification: C Carcinogen: EPA-B1, IARC-1, MAK-4, NIOSH-Ca, NTP-K, OSHA-Ca, TLV-A2
Formaldehyde Polymer with Ammonia and Phenol	35297-54-2	NE	NE	NE	NE	NE	NE	NE	NE
Phenol	108-95-2	19 (skin)	Skin	19 (skin)	Skin	19 (skin)	60 (skin) 15 min.	25 ppm	DFG MAK: Skin Carcinogen: EPA-I, EPA-D, IARC-3, MAK-3B, TLV-A4
Proprietary Polymer		NE	NE	NE	NE	NE	NE	NE	NE
Sulfuric Acid Compound with Graphite	12777-87-6	NE	NE	NE	NE	NE	NE	NE	NE

NE: Not Established. Ca: Carcinogen NIC: Notice of Intended Change DSEN: May Cause Dermal Sensitization. This notation is used to indicate the potential for dermal sensitization resulting from the interaction of an absorbed agent and ultraviolet light (i.e. photosensitization) RSEN: May Cause Respiratory Sensitization SEN: Confirmed Potential Worker Sensitization as a Result of Dermal Contact and/or Inhalation Exposure, Based on the Weight of Scientific Evidence See Section 16 for Definitions of Other Terms Used

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

ALUMINUM HYDROXIDE:

Australia: TWA = 2 mg(Al)/m³, JUL 2008
Belgium: TWA = 2 mg(Al)/m³, MAR 2002
Finland: TWA = 2 mg(Al)/m³, NOV 2011
France: VME = 2 mg(Al)/m³, FEB 2006
Korea: TWA = 2 mg(Al)/m³, 2006
New Zealand: TWA = 2 mg(Al)/m³, JAN 2002
Russia: TWA = 6 mg/m³, JUN 2003
Sweden: TWA = 1 mg(Al)/m³, JUN 2005
Switzerland: MAK-W = 3 mg/m³, resp., JAN 2011
United Kingdom: TWA = 2 mg(Al)/m³, OCT 2007

In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

CRYSTALLINE SILICA:

Australia: TWA = 0.1 mg/m³, JUL 2008
Belgium: TWA = 0.1 mg/m³ (resp. dust), MAR 2002
Denmark: TWA = 0.1 mg/m³ (respirable), carc, MAY 2011
Denmark: TWA = 0.1 mg/m³ (resp.), carc, MAY 2011
Denmark: TWA = 0.3 mg/m³ (total), MAY 2011
Finland: TWA = 0.05 mg/m³, resp. dust, SEP 2009
France: VME = 0.1 mg/m³, (resp), FEB 2006
Iceland: TWA = 0.1 mg/m³ (resp. dust), NOV 2011
Japan: OEL-C = 0.03 mg/m³ (respirable), APR 2007
Korea: TWA = 0.1 mg/m³, 2006
Mexico: TWA = 0.1 mg/m³ (respirable), 2004
The Netherlands: MAC-TGG = 0.075 mg/m³, 2003
New Zealand: TWA = 0.2 mg/m³ (respirable dust), JAN 2002
Norway: TWA = 0.1 mg/m³ (resp. dust), JAN 1999
Norway: TWA = 0.3 mg/m³ (total dust), JAN 1999
Peru: TWA = 0.05 mg/m³, JUL 2005
Russia: TWA = 1 mg/m³, STEL = 3 mg/m³, JUN 2003
Sweden: TWA = 0.1 mg/m³ (resp. dust), JUN 2005
Switzerland: MAK-W = 0.15 mg/m³, DEC 2006
Thailand: TWA = 10 mg/m³ (resp. dust), JAN 1993
Thailand: TWA = 30 mg/m³ (total dust), JAN 1993
United Kingdom: TWA = 0.1 mg/m³ (resp. dust), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

FORMALDEHYDE:

ARAB Republic of Egypt: TWA = 2 ppm (3 mg/m³), JAN 1993
Australia: TWA = 1 ppm (1.2 mg/m³), STEL = 2 ppm (2.5 mg/m³), Carcinogen, JUL 2008
Austria: MAK-TMW = 0.5 ppm (0.6 mg/m³); KZW = 0.5 ppm (0.6 mg/m³), skin, sen, 2007
Belgium: STEL = 0.3 ppm (0.38 mg/m³), MAR 2002
Denmark: CL = 0.3 ppm (0.4 mg/m³), carc, MAY 2011
Finland: TWA = 0.3 ppm (0.37 mg/m³), CL = 1 ppm (1.2 mg/m³), NOV 2011
France: VME = 0.5 ppm, VLE 1 ppm, C3 Carcinogen, FEB 2006
Germany: MAK = 0.3 ppm (0.37 mg/m³), 2011
Hungary: TWA = 0.6 mg/m³, STEL 0.6 mg/m³, Skin, SEP 2000

FORMALDEHYDE (continued):

Iceland: TWA = 0.3 ppm (0.4 mg/m³), STEL 1 ppm (1.2 mg/m³), Sen, NOV 2011
Japan: OEL = 0.1 ppm (0.12 mg/m³), 2A Carc, A2 Sen, s1 Sen, MAY 2012
Japan: OEL = 0.2 ppm (0.24 mg/m³), MAY 2012
Korea: TWA = 1 ppm (1.5 mg/m³), STEL = 2 ppm (3 mg/m³), 2006
Mexico: PEAK = 2 ppm (3 mg/m³), 2004
The Netherlands: MAC-TGG = 1.5 mg/m³, 2003
New Zealand: CL = 1 ppm (1.2 mg/m³), sen, JAN 2002
Norway: TWA = 0.5 ppm (0.6 mg/m³), JAN 1999
Peru: TWA STEL = 0.3 ppm (0.37 mg/m³), JUL 2005
The Philippines: TWA = 5 ppm (6 mg/m³), JAN 1993
Poland: MAC(TWA) = 0.5 mg/m³, MAC(STEL) = 1 mg/m³, JAN 1999
Russia: STEL = 0.5 mg/m³, Skin, JUN 2003
Sweden: TWA = 0.5 ppm (0.6 mg/m³), CL = 1 ppm (1.2 mg/m³), Carcinogen, Sen, JUN 2005
Switzerland: MAK-W = 0.3 ppm (0.37 mg/m³), KZG-W = 0.6 ppm (0.74 mg/m³), Carc 3, Sen, JAN 2011
Thailand: TWA = 3 ppm, STEL = 5 ppm, JAN 1993
Turkey: TWA = 5 ppm (6 mg/m³), JAN 1993
United Kingdom: TWA = 2 ppm (2.5 mg/m³); STEL 2 ppm (2.5 mg/m³), OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PHENOL:

ARAB Republic of Egypt: TWA = 5 ppm (19 mg/m³), Skin, JAN 1993
Australia: TWA = 1 ppm (4 mg/m³), JUL 2008
Austria: MAK-TMW = 2 ppm (7.8 mg/m³), skin, 2007
Denmark: TWA = 2 ppm (7.8 mg/m³), Skin, MAR 2002
Denmark: TWA = 1 ppm (4 mg/m³), skin, MAY 2011
EC: TWA = 7.8 mg/m³ (2 ppm), skin, JUN 2000
Finland: TWA = 2 ppm (8 mg/m³), STEL = 4 ppm (16 mg/m³), skin, NOV 2011
France: VME = 2 ppm (7.8 mg/m³), Skin, FEB 2006
Hungary: TWA = 7.8 mg/m³, STEL = 78 mg/m³, Skin, SEP 2000
Iceland: TWA = 1 ppm (4 mg/m³), skin, NOV 2011
Japan: OEL = 5 ppm (19 mg/m³), skin, MAY 2012
Korea: TWA = 5 ppm (19 mg/m³), skin, 2006
Mexico: TWA = 5 ppm (19 mg/m³); STEL = 10 ppm (38 mg/m³) (skin), 2004
The Netherlands: MAC-TGG = 8 mg/m³, Skin, 2003
New Zealand: TWA = 5 ppm (19 mg/m³), skin, JAN 2002
Norway: TWA = 1 ppm (4 mg/m³), JAN 1999
Peru: TWA = 5 ppm (19 mg/m³), JUL 2005
The Philippines: TWA = 5 ppm (10 mg/m³), Skin, JAN 1993
Poland: MAC(TWA) = 10 mg/m³, MAC(STEL) = 20 mg/m³, JAN 1999
Russia: TWA = 0.3 mg/m³, STEL = 1 mg/m³, Skin, JUN 2003
Sweden: TWA = 1 ppm (4 mg/m³); STEL = 2 ppm (8 mg/m³), Skin, JUN 2005
Switzerland: CL 5 ppm (19 mg/m³), skin, JAN 2011
Thailand: TWA = 5 ppm (19 mg/m³), JAN 1993
Turkey: TWA = 5 ppm (19 mg/m³), Skin, JAN 1993
United Kingdom: TWA = 2 ppm (7.8 mg/m³), skin, OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PROTECTIVE EQUIPMENT: *The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.*

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations.

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: During manufacture or other similar operations, wear the appropriate hand protection for the process.

Skin Protection: Use appropriate protective clothing. If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Putty

MOLECULAR FORMULA: Mixture.

ODOR: Minimal.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

DECOMPOSITION TEMPERATURE: Not available.

AUTOIGNITION TEMPERATURE: Not available.

FREEZING/MELTING POINT: Not available.

COLOR: Red.

MOLECULAR WEIGHT: Mixture.

ODOR THRESHOLD: Not available.

OXIDIZING PROPERTIES: Not applicable.

PERCENT VOLATILE: Not available.

FLASH POINT: Not available.

BOILING POINT: Not available.

9. PHYSICAL and CHEMICAL PROPERTIES (Continued)

VAPOR PRESSURE: Not available.

VAPOR DENSITY (air = 1): Not available.

EVAPORATION RATE (*n*-BuAc = 1): Not Applicable

SOLUBILITY IN WATER: Insoluble.

COEFFICIENT WATER/OIL DISTRIBUTION: Not established.

HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release): The appearance may be characteristics to distinguish a release of this product.

SPECIFIC GRAVITY (water = 1): 1.49

CARB VOC: Not available.

SCAQMD (U.S. EPA Method 24): Not available.

SOLUBILITY IN SOLVENTS: Not available.

pH: Not available.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature and pressures (see Section 7, Handling and Storage).

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong oxidizers.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: Inhalation of fumes or vapors if heated may cause irritation of the nose, throat, and lungs and cause coughing. Removal to fresh air should relieve symptoms. The trace Crystalline Silica and Formaldehyde components are known human carcinogens. Due to the form of this product, this hazard is not as significant due to viscosity and consistency of the mixture.

Contact with Skin or Eyes: Direct eye contact may cause irritation, redness, and tearing from mechanical irritation. Prolonged or repeated skin exposures may cause dermatitis (dry red skin).

Skin Absorption: The Phenol component and trace Formaldehyde component can be absorbed through intact skin. Phenol in all forms (solid, solutions and vapor) is readily absorbed through the skin and can cause harmful effects if a large area of the skin is involved or if contact is prolonged. Due to the small amount of each of these materials, the possibility of adverse effects is not expected to be significant however, skin contact should be avoided. Formaldehyde and Phenol can cause sensitization effects as described under 'Sensitization Effect's'.

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE (continued):

Ingestion: Ingestion is not a significant route of occupational exposure and is unlikely to occur. If this product is swallowed, irritation of the mouth, throat, esophagus and other tissues of the digestive system may occur. Symptoms of ingestion may include nausea, vomiting, and diarrhea.

Injection: Accidental injection of this product, via laceration or puncture by a contaminated object can cause redness at the site of injection.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: Exposure to this product may cause the following health effects:

Acute: Inhalation of fumes or vapors may cause irritation of respiratory system. Eye contact may cause mechanical irritation. Eye contact with fumes can cause irritation. May be harmful if swallowed.

Chronic: Prolonged or repeated skin exposure may cause dermatitis (dry red skin).

TARGET ORGANS: Acute: Skin, eyes, respiratory system. Chronic: Skin.

TOXICITY DATA: Currently, the following toxicological data are available for components of 1% or more concentration.

ALUMINUM TRIHYDRATE:

TDLo (Oral-Child) 79 gm/kg/2 years-intermittent: Behavioral: changes in motor activity (specific assay), muscle contraction or spasticity; Musculoskeletal: osteomalacia

TDLo (Oral-Child) 122 gm/kg/4 days: Gastrointestinal: other changes; Nutritional and Gross Metabolic: body temperature increase

TDLo (Oral-Woman) 84 gm/kg: female 1-40 week(s) after conception: Reproductive: Effects on Newborn: physical

TDLo (Oral-Infant) 68040 mg/kg/24 weeks-intermittent: Musculoskeletal: osteoporosis; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in phosphorus

TDLo (Oral-Woman) 73912.5 mg/kg/26 weeks-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Musculoskeletal: osteoporosis; Nutritional and Gross: Metabolic: changes in phosphorus

TDLo (Unreported-Infant) 39 gm/kg/24 days-intermittent: Musculoskeletal: osteomalacia

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD (BLUE) 2*

FLAMMABILITY HAZARD (RED) 0

PHYSICAL HAZARD (YELLOW) 0

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

TDLo (Oral-Rat) 15 mg/kg: Gastrointestinal: other changes
TDLo (Oral-Rat) 8040 mg/kg/67 days-continuous: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Nutritional and Gross Metabolic: changes in phosphorus
TDLo (Oral-Mouse) 80,880 mg/kg/23 weeks-continuous: Liver: other changes; Musculoskeletal: other changes; Nutritional and Gross Metabolic: changes in metals, not otherwise specified
TDLo (Intraperitoneal-Rat) 150 mg/kg
TDLo (Intraperitoneal-Rat) 6240 mg/kg/26 weeks-intermittent: Blood: pigmented or nucleated red blood cells; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in iron
TDLo (Intraperitoneal-Rat) 1920 mg/kg/8 weeks-intermittent: Blood: microcytosis with or without anemia
TDLo (Intraperitoneal-Rat) 960 mg/kg/4 weeks-intermittent: Blood: changes in erythrocyte (RBC) count

11. TOXICOLOGICAL INFORMATION (Continued)

TOXICITY DATA (continued):

ALUMINUM TRIHYDRATE:

TDLo (Oral-Child) 79 gm/kg/2 years-intermittent: Behavioral: changes in motor activity (specific assay), muscle contraction or spasticity; Musculoskeletal: osteomalacia
TDLo (Oral-Child) 122 gm/kg/4 days: Gastrointestinal: other changes; Nutritional and Gross Metabolic: body temperature increase
TDLo (Oral-Woman) 84 gm/kg: female 1-40 week(s) after conception: Reproductive: Effects on Newborn: physical
TDLo (Oral-Infant) 68040 mg/kg/24 weeks-intermittent: Musculoskeletal: osteoporosis; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in phosphorus
TDLo (Oral-Woman) 73912.5 mg/kg/26 weeks-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Musculoskeletal: osteoporosis; Nutritional and Gross: Metabolic: changes in phosphorus
TDLo (Unreported-Infant) 39 gm/kg/24 days-intermittent: Musculoskeletal: osteomalacia

TDLo (Oral-Rat) 15 mg/kg: Gastrointestinal: other changes

TDLo (Oral-Rat) 8040 mg/kg/67 days-continuous: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Nutritional and Gross Metabolic: changes in phosphorus

TDLo (Oral-Mouse) 80,880 mg/kg/23 weeks-continuous: Liver: other changes; Musculoskeletal: other changes; Nutritional and Gross Metabolic: changes in metals, not otherwise specified

TDLo (Intraperitoneal-Rat) 150 mg/kg

TDLo (Intraperitoneal-Rat) 6240 mg/kg/26 weeks-intermittent: Blood: pigmented or nucleated red blood cells; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in iron

TDLo (Intraperitoneal-Rat) 1920 mg/kg/8 weeks-intermittent: Blood: microcytosis with or without anemia

TDLo (Intraperitoneal-Rat) 960 mg/kg/4 weeks-intermittent: Blood: changes in erythrocyte (RBC) count

PHENOL:

LDLo (Oral-Human) 14 gm/kg: Behavioral: muscle weakness; Lungs, Thorax, or Respiration: cyanosis

LDLo (Oral-Human) 140 mg/kg: Behavioral: hallucinations, distorted perceptions; Skin and Appendages: sweating

LDLo (Oral-Infant) 10 mg/kg: Behavioral: muscle weakness; Lungs, Thorax, or Respiration: cyanosis

TDLo (Parenteral-Man) 105.3 mg/kg: Peripheral Nerve and Sensation: sensory change involving peripheral nerve; Lungs, Thorax, or Respiration: dyspnea; Kidney/Ureter/Bladder: renal function tests depressed

TDLo (Unreported-Man) 5714 μ g/kg: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified

IC₅₀ (In vitro-Human Liver) 3.02 mmol/L/24 hours: In Vitro Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₅₀ (In vitro-Human Liver) 9.67 mmol/L/24 hours: In Vitro Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₅₀ (In vitro-Human Liver Tumor) 10 mmol/L/24 hours: In Vitro Toxicity Studies: cell protein synthesis

IC₅₀ (In vitro-Human Liver Tumor) 3.47 mmol/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity: cytoplasmic enzymes leakage (lactate dehydrogenase, ATP enzymes etc.), cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₅₀ (In vitro-Human Liver Tumor) 14.66 mmol/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity: cytoplasmic enzymes leakage (lactate dehydrogenase, ATP enzymes etc.), cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₅₀ (In vitro-Human HeLa Cell) 100 mg/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity: cytoplasmic enzymes leakage (lactate dehydrogenase, ATP enzymes etc.)

Open Irritation Test (Skin-Rabbit) 535 mg: Severe

Standard Draize Test (Skin-Rabbit) 100 mg: Mild

Standard Draize Test (Eye-Rabbit) 5 mg: Severe

Standard Draize Test (Eye-Rabbit) 400 μ L/30 seconds: Severe

Rinsed with Water (Eye-Rabbit) 5 mg/30 seconds: Mild

LC₅₀ (Inhalation-Rat) 316 mg/m³

LC₅₀ (Inhalation-Rat) 316 mg/m³/4 hours

LC₅₀ (Inhalation-Mouse) 177 mg/m³

LC₅₀ (Inhalation-Mouse) 177 mg/m³/4 hours

LD₅₀ (Oral-Rat) 317 mg/kg: Behavioral: convulsions or effect on seizure threshold

LD₅₀ (Oral-Rat) 512 mg/kg

LD₅₀ (Oral-Mouse) 270 mg/kg

LD₅₀ (Oral-Mammal-Species Unspecified) 500 mg/kg

LD₅₀ (Skin-Rat) 1500 mg/kg

LD₅₀ (Skin-Rat) 669 mg/kg: Behavioral: tremor; Kidney/Ureter/Bladder: hematuria; Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)

LD₅₀ (Skin-Rabbit) 630 mg/kg

LD₅₀ (Intraperitoneal-Rat) 127 mg/kg

LD₅₀ (Intraperitoneal-Mouse) 180 mg/kg

LD₅₀ (Subcutaneous-Rat) 300 mg/kg

LD₅₀ (Subcutaneous-Mouse) 344 mg/kg

LD₅₀ (Intravenous-Mouse) 112 mg/kg: Behavioral: tremor

IC₁₀ (In vitro-Rat Liver) 1.12 mmol/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity: cytoplasmic enzymes leakage (lactate dehydrogenase, ATP enzymes etc.), cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc.

IC₁₀ (In vitro-Rat Lung) 0.03 gm/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity (prelabeled cells): release of radioactive isotopes ([51Cr], [3H]-thymidine, [3H]-proline, [35S]- or [75Se]-methionine, 5-[125I]-2-deoxy-uridine) or fluorescent dyes (bis-carboxyethyl-carboxyfluorescein (BCECF) or calcein-AM) TIVIEQ

IC₁₀ (In vitro-Rat Lung) 0.2 gm/L/24 hours: In Vitro Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₁₀ (In vitro-Chicken Neurons) 7470 μ mol/L/21 hour.....In Vitro Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

PHENOL (continued):

IC₁₀ (In vitro-Chicken Neurons) 1862 μ mol/L/21 hours: In Vitro Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc

IC₁₀ (In vitro-Chicken Neurons) 614 μ mol/L/20 hours: In Vitro Toxicity Studies: cell viability (lysosomal damage): neutral red assay etc.

IC₅₀ (In vitro-Rat Liver) 3.3 mmol/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity: cytoplasmic enzymes leakage (lactate dehydrogenase, ATP enzymes etc.), cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc.

IC₅₀ (In vitro-Rat Lung) 1 gm/L/24 hours: In Vitro Toxicity Studies: cell viability (mitochondrial reductase assays): MTT, XTT, MTS, WSTs assays etc.

IC₁₀ (In vitro-Rat Lung) 0.36 gm/L/24 hours: In Vitro Toxicity Studies: cell membrane integrity (prelabeled cells): release of radioactive isotopes ([51Cr], [3H]-thymidine, [3H]-proline, [35S]- or [75Se]-methionine, 5-[125I]-2-deoxy-uridine) or fluorescent dyes (bis-carboxyethyl-carboxyfluorescein (BCECF) or calcein-AM)

TDLo (Oral-Mouse) 2800 mg/kg/10 days-intermittent: Behavioral: tremor, ataxia

TDLo (Skin-Mouse) 329 mg/kg/30 minutes: Skin and Appendages: primary irritation (after topical exposure); Biochemical: Metabolism (Intermediary): other, effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 88.9 μ L/kg: Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 16 gm/kg/40 weeks-intermittent: Tumorigenic: carcinogenic by RTECS criteria; Skin and Appendages: tumors

TDLo (Intraperitoneal-Rat) 650 mg/kg/17 days-intermittent: Blood: other changes

TDLo (Intraperitoneal-Rat) 600 mg/kg: female 12-14 day(s) after conception: Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus)

TDLo (Intraperitoneal-Mouse) 300 mg/kg: Nutritional and Gross Metabolic: body temperature decrease

TDLo (Intraperitoneal-Mouse) 300 mg/kg: Immunological Including Allergic: hypersensitivity delayed

TCLo (Inhalation-Rat) 110 mg/m³/4 hours: Behavioral: somnolence (general depressed activity); Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: proteases

TCLo (Inhalation-Rat) 150 ug/m³/8 hours/26 weeks-intermittent: Kidney/Ureter/Bladder: changes in tubules (including acute renal failure, acute tubular necrosis); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases

TCLo (Inhalation-Rat) 5 mg/m³/4 hours/17 weeks-intermittent: Liver: liver function tests impaired; Endocrine: effect on menstrual cycle; Blood: changes in leukocyte (WBC) count

TCLo (Inhalation-Rat) 100 μ g/m³/24 hours/61 days-continuous: Behavioral: muscle contraction or spasticity; Blood: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: true cholinesterase

TCLo (Inhalation-Rat) 0.5 mg/m³/4 hours/122 days-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: multiple enzyme effects

TCLo (Inhalation-Mouse) 15 ppm/6 minutes: Lungs, Thorax, or Respiration: respiratory depression

LCLo (Inhalation-Rat) 232 mg/m³/4 hours

LCLo (Inhalation-Mouse) 110 mg/m³/4 hours

Mutation Test Systems-Not Otherwise Specified (Human HeLa cell) 17 mg/L

Mutation Test Systems-Not Otherwise Specified (Human Lymphocyte) 5 μ mol/L

DNA Inhibition (Human HeLa Cell) 1 mmol/L

Sister Chromatid Exchange (Human Lymphocyte) 5 μ mol/L

Cytogenetic Analysis (Human Cells-Not Otherwise Specified) 300 μ mol/L/30 hours

Mutation in Microorganisms (Bacteria-Salmonella typhimurium) 40 μ mol/plate

Mutation in Microorganisms (Mouse Lymphocyte) 300 mg/L

Mutation in Microorganisms (Microorganism-Not Otherwise Specified) 200 mg/L/8 hours

Sex Chromosome Loss and Non-Disjunction (Insect-Drosophila melanogaster Ovary) 100 ppm

Gene Conversion and Mitotic Recombination (Mold-Aspergillus nidulans) 15 μ mol/L

DNA Damage (Mammal-Species Unspecified Lymphocyte) 250 mmol/L

Micronucleus Test (Oral-Mouse) 265 mg/kg

Micronucleus Test (Intraperitoneal-Mouse) 265 mg/kg

Micronucleus Test (Hamster Lung) 4 mmol/L

Micronucleus Test (Hamster Ovary) 175 mg/L

Micronucleus Test (Hamster Embryo) 500 mg/L/4 hours

DNA Inhibition (Oral-Mouse) 20 gm/kg

DNA Inhibition (Mouse Lymphocyte) 800 μ mol/L

DNA Inhibition (Hamster Lung) 1900 μ mol/L

Cytogenetic Analysis (Multiple Routes-Fish-Not Otherwise Specified) 300 nL/L

Cytogenetic Analysis (Hamster Ovary) 2 gm/L

Cytogenetic Analysis (Hamster Embryo) 100 μ mol/L

Unscheduled DNA Synthesis (Oral-Rat) 4 gm/kg

Unscheduled DNA Synthesis (Hamster Embryo) 3 μ mol/L

DNA Damage (Mouse Lymphocyte) 1500 μ mol/L

Mutation Test Systems-Not Otherwise Specified (Mouse Cells-Not Otherwise Specified) 2500 μ mol/L

Mutation Test Systems-Not Otherwise Specified (Rabbit Bone Marrow) 250 μ mol/L

Mutation in Mammalian Somatic Cells (Mouse Lymphocyte Mouse Lymphocyte) 1890 μ mol/L

Mutation in Mammalian Somatic Cells (Hamster Embryo) 3 mmol/L

Morphological Transformation (Hamster Embryo) 10 μ mol/L

Sister Chromatid Exchange (Hamster Ovary) 300 mg/L

Sister Chromatid Exchange (Hamster Embryo) 1 mmol/L

POLYBUTENE:

TCLo (Inhalation-Rat) 700 mg/m³/7 hours/2 weeks-intermittent: Liver: changes in liver weight; Nutritional and Gross Metabolic: weight loss or decreased weight gain

11. TOXICOLOGICAL INFORMATION (Continued)

IRRITANCY OF PRODUCT: Inhalation of fumes or vapors may cause respiratory irritation. Eye contact may cause irritation. Eye contact with fumes may cause irritation. Prolonged skin contact may cause irritation.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

CRYSTALLINE SILICA: ACGIH-TLV-A2 (Suspected Human Carcinogen); IARC-1 (Carcinogenic to Humans); MAK-1 (Substances that Cause Cancer in Man and Can Be Assumed to Make a Significant Contribution to Cancer Risk); NIOSH-Ca (Potential Occupational Carcinogen with No Further Categorization); NTP-K (Known to Be a Human Carcinogen)

FORMALDEHYDE: ACGIH-TLV-A2 (Suspected Human Carcinogen); EPA-B1 (Probable Human Carcinogen-Limited Evidence of Carcinogenicity from Epidemiological Studies); IARC-1 (Carcinogenic to Humans); MAK-4 (Substances with Carcinogenic Potential for Which Genotoxicity Plays No or at Most a Minor Role. No significant contribution to human cancer risk is expected, provided the MAK value is observed.); NIOSH-Ca (Potential Occupational Carcinogen with No Further Categorization); NTP-K (Known to Be a Human Carcinogen); OSHA-Ca (Carcinogen Defined with No Further Categorization)

PHENOL: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); EPA-I (Data are Inadequate for an Assessment of Human Carcinogenic Potential); EPA-D (Not Classifiable as to Human Carcinogenicity); IARC-3 (Unclassifiable as to Carcinogenicity in Humans); MAK-3B (Substances for Which in vitro tests or animal studies have yielded evidence of carcinogenic effects that is not sufficient for classification of the substance in one of the other categories. Further studies are required before a final classification can be made.)

The remaining components are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.

REPRODUCTIVE TOXICITY INFORMATION: This product is not expected or reported to cause human mutagenic, embryotoxic, teratogenic or reproductive toxicity effects. The following gives information on possible effects from components.

Mutagenicity: Formaldehyde is considered mutagenic, based on positive results (e.g. chromosomal aberrations in lung cells) observed in studies with live animals. In occupational exposure studies, which are limited by such problems as low numbers of workers studied and mixed exposures, both positive and negative results (micronuclei, sister chromatid exchanges (SCEs), chromosome aberrations in lymphocytes or cheek and nose cells) and a negative result (abnormal sperm) were obtained.(19,44,46,81) However, positive results (SCEs in lymphocytes, DNA-protein crosslinks in lymphocytes) were obtained in 2 reasonably well-conducted studies.

Embryotoxicity/Teratogenicity: No component is known to cause human embryotoxicity or teratogenicity. Animal studies are inconclusive or have not shown embryotoxicity or teratogenicity.

Reproductive Toxicity: There is insufficient evidence to determine if Formaldehyde causes reproductive toxicity in humans. Despite limitations, the few animal studies available do not suggest that Formaldehyde exposure will affect fertility.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for this material.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. The mineral components are not expected to biodegrade to great extent.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided.

OTHER ADVERSE EFFECTS: This material is not listed as having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, National, International, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as dangerous goods under rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

OFFICIAL MEXICAN STANDARD; REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act as follows.

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Formaldehyde	Yes	Yes	Yes
Phenol	Yes	Yes	Yes

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: Yes; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. SARA Threshold Planning Quantity (TPQ): Formaldehyde: 500 lb (27.2 kg); Phenol: 500 lb (27.2 kg)

U.S. CERCLA Reportable Quantity (RQ): Formaldehyde: 100 lb (45.4 kg); Phenol: 1000 lb (454 kg)

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): The Crystalline Silica and Formaldehyde (gas) components are on the California Proposition 65 lists. WARNING! This product contains compounds known to the State of California to cause Cancer. This product contains trace amounts of a suspected human carcinogen by inhalation; however, this hazard is not expected to be significant due to viscosity and consistency of the mixture.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components are on the DSL or NDSL Inventories.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: The Phenol and Formaldehyde components are on the CEPA Priorities Substances 2 List.

Canadian WHMIS Classification and Symbols: This product would be categorized as a Controlled Product, D2B (Other Toxic Effects-Potential Carcinogenic and Mutagenic Effect, Irritation, Skin Sensitization) as per the Controlled Product Regulations.



CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# are listed on the Chinese Inventory of Existing Chemical Substances (IECSC), or are not listed, per information in Section 2.

JAPANESE REGULATIONS:

Japanese ENCS: Components listed by CAS# are on the ENCS Inventory, are excepted, or are not listed, per information in Section 2.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemicals List (ECL) Status: Components listed by CAS# are listed on the Korean ECL Inventory, or are not listed, per information in Section 2.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is classified as hazardous.

SINGAPORE REGULATIONS:

List of Controlled Hazardous Substances: Components listed by CAS# are not listed on the Singapore List of Controlled Substances.

Code of Practice on Pollution Control Requirements: The components identified by CAS# in Section 2 (Composition and Information on Ingredients) NOT are subject to the requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721-1961 • (800) 441-3365

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DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: **Group A:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 **Minimal Hazard:** No significant health risk, irritation of skin or eyes not anticipated. **Skin Irritation:** Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. **Eye Irritation:** Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. **Oral Toxicity LD₅₀ Rat:** > 5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 2000 mg/kg. **Inhalation Toxicity 4-hrs LC₅₀ Rat:** > 20 mg/L. 1 **Slight Hazard:** Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. **Skin Irritation:** Slightly or mildly irritating. PII or Draize > 0 < 5. **Eye Irritation:** Slightly to mildly irritating, but reversible within 7 days. Draize > 0 < 25. **Oral Toxicity LD₅₀ Rat:** > 500–5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 1000–2000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 2–20 mg/L. 2 **Moderate Hazard:** Temporary or transitory injury may occur; prolonged exposure may affect the CNS. **Skin Irritation:** Moderately irritating; primary irritant; sensitizer. PII or Draize > 5, with no destruction of dermal tissue. **Eye Irritation:** Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. **Oral Toxicity LD₅₀ Rat:** > 50–500 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 200–1000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.5–2 mg/L. 3 **Serious Hazard:** Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. **Skin Irritation:** Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5–8, with destruction of tissue. **Eye Irritation:** Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. **Oral Toxicity LD₅₀ Rat:** > 1–50 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 20–200 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.05–0.5 mg/L. 4 **Severe Hazard:** Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. **Skin Irritation:** Not appropriate. Do not rate as a 4, based on skin irritation alone. **Eye Irritation:** Not appropriate. Do not rate as a 4, based on eye irritation alone. **Oral Toxicity LD₅₀ Rat:** ≤ 1 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** ≤ 20 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: 0 **Minimal Hazard:** Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 1 **Slight Hazard:** Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). 2 **Moderate Hazard:** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of coarse dusts that may burn rapidly but that generally do not form explosive atmospheres; 3 **(continued):** Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. 3 **Serious Hazard:** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). 4 **Severe Hazard:** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: 0 **Water Reactivity:** Materials that do not react with water. **Organic Peroxides:** Materials that are normally stable, even under fire conditions and will not react with water. **Explosives:** Substances that are Non-Explosive. **Compressed Gases:** No Rating. **Pyrophorics:** No Rating. **Oxidizers:** No 0 rating. **Unstable Reactives:** Substances that will not polymerize, decompose, condense, or self-react. 1 **Water Reactivity:** Materials that change or decompose upon exposure to moisture. **Organic Peroxides:** Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. **Explosives:** Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. **Compressed Gases:** Pressure below OSHA definition. **Pyrophorics:** No Rating. **Oxidizers:** Packaging Group III oxidizers; **Solids:** any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. **Liquids:** any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. **Unstable Reactives:** Substances that may decompose, condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. 2 **Water Reactivity:** Materials that may react violently with water. **Organic Peroxides:** Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. **Explosives:** Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. **Compressed Gases:** Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group II oxidizers. **Solids:** any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. **Liquids:** any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chloride solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. **Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. 3 **Water Reactivity:** Materials that may form explosive reactions with water. **Organic Peroxides:** Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. **Explosives:** Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. **Compressed Gases:** Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group I oxidizers. **Solids:** any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. **Liquids:** any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. 4 **Water Reactivity:** Materials that react explosively with water without requiring heat or confinement. **Organic Peroxides:** Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. **Explosives:** Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. **Compressed Gases:** No Rating. **Pyrophorics:** Add to the definition of Flammability 4. **Oxidizers:** No 4 rating. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

DEFINITION OF TERMS (Continued)

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. 1 Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD₅₀ for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. 2 Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lacrimators. Materials that are primary skin irritants or sensitizers. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. 3 Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD₅₀ for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg.

HEALTH HAZARD (continued): 4 Materials that, under emergency conditions, can be lethal. Gases with an LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. 1 Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the *UN Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 2 Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids). Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 3 Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh).

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 4 Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. 1 Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. 2 Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100 W/mL. 3 Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. 4 Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). **Flash Point:** Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. **Autoignition Temperature:** Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. **LEL:** Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. **UEL:** Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. **LD₅₀:** Lethal Dose (solids & liquids) that kills 50% of the exposed animals. **LC₅₀:** Lethal Concentration (gases) that kills 50% of the exposed animals. **ppm:** Concentration expressed in parts of material per million parts of air or water. **mg/m³:** Concentration expressed in weight of substance per volume of air. **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg. **TD₅₀:** Lowest dose to cause a symptom. **TC₅₀:** Lowest concentration to cause a symptom. **TLD₅₀, LD₅₀, or LC₅₀, LCL₀, and LC₀:** Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** **IARC:** International Agency for Research on Cancer. **NTP:** National Toxicology Program. **RTECS:** Registry of Toxic Effects of Chemical Substances. **IARC** and **NTP** rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** **BEI:** ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. **BCF:** Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. **TL_m:** Median threshold limit. **log K_{ow}** or **log K_{oc}:** Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.:

EPA: U.S. Environmental Protection Agency. **ACGIH:** American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. **OSHA:** U.S. Occupational Safety and Health Administration. **NIOSH:** National Institute of Occupational Safety and Health, which is the research arm of OSHA. **DOT:** U.S. Department of Transportation. **SARA:** Superfund Amendments and Reauthorization Act. **TSCA:** U.S. Toxic Substance Control Act. **CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. **TC:** Transport Canada. **DSL/NDSL:** Canadian Domestic/Non-Domestic Substances List.

JAPAN:

MEI: Ministry of Economy, Trade and Industry.



SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

Identification of the Mixture:

Trade / Material Name: **SpecSeal® Firestop Putty Pads (SSP4S)**
Intended Use: Firestop and Sound Transmission

Supplier Name:

Address: 210 Evans Way
Somerville, New Jersey 08876
Business Phone: 1-908-526-8000
Emergency Phone: U.S., Canada: 1-800-255-3924 (24 hrs)
International: +1-813-248-0585 (collect-24 hrs)
Email: techserv@stifirestop.com

2. HAZARD IDENTIFICATION

Mixture Classification: Eye Irritant - Category 2B
Skin Irritant - Category 2
Skin Sensitizer - Category 1

Signal Word: Warning



Hazard Statements: Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction

Precautionary Statements:

Prevention: Wash hands thoroughly after handling.
Avoid breathing dust or vapors.
Wear chemical resistant gloves.
Contaminated work clothing must not be allowed out the workplace.

Response: If on skin: Wash with plenty of water.
If skin or eye irritation occurs or persists: Seek medical advice/attention.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Wash contaminated clothing before reuse.

Disposal: Dispose of waste material in accordance with local regulations.

The hazard classification of this mixture was based on the criteria established by the OSHA Hazard Communication Standard (29 CFR 1910.1200) and of the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

3. COMPOSITION and INFORMATION ON INGREDIENTS

Hazardous Components:

Chemical name	CAS No.	Hazard classification:	Concentration in Product
Polyisobutylene	9003-27-4	Eye Irritant – 2B	25%
Phenol Formaldehyde Resin	9003-35-4	Skin Irritant – 2 Skin Sensitizer - 1	11%
Hexamethylene Tramine	100-97-0	Skin Sensitizer - 1	1%

4. FIRST-AID MEASURES

Inhalation: Move injured person into fresh air and keep person calm under observation. If uncomfortable or breathing is difficult: Seek hospital and bring along these instructions.

Skin contact: If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Eye contact: Do not rub eye. Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Seek medical attention and bring these instructions.

Ingestion: Immediately rinse mouth and drink plenty of water. If ingestion is suspected after rinsing mouth, seek hospital and bring along these instructions. Do not induce vomiting.

5. FIRE-FIGHTING MEASURES

Fire extinguishing media: Use extinguishing materials suitable for the surrounding area.

Unusual fire and explosion hazards: This product is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

6. ACCIDENTAL RELEASE MEASURES

Under normal handling conditions an accidental release is highly unlikely.

Personal precautions: Keep unauthorized persons away. For personal protection, see section 8. Avoid any exposure. Follow precautions for safe handling described in this safety data sheet.

Environmental Precautions: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

7. HANDLING and USE

Precautions for Safe Handling: As with all chemicals, avoid getting this material ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics while handling this product. Wash hands thoroughly after handling this product or containers of this product. Avoid breathing fumes or vapors generated by this product. Use in a well-ventilated location.

Conditions for Safe Storage: Store containers in a cool, dry location, away from direct sunlight, sources of intense heat. Do not store above 55°C (131°F)

Specific End Use(s): None other than those listed in Section 1.

8. EXPOSURE CONTROLS and PERSONAL PROTECTION

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR						
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³
Polyisobutylene	9003-27-4	NE	NE	NE	NE	NE	NE	NE
Phenol Formaldehyde Resin	9003-35-4	NE	NE	NE	NE	NE	NE	NE
Hexamethylene Tramine	100-97-0	NE	NE	NE	NE	NE	NE	NE

NE = Not Established.

8. EXPOSURE CONTROLS and PERSONAL PROTECTION (Continued)

During normal handling of Spec Seal® Firestop Putty Pads:

Respiratory Protection: Respiratory protection is not required for normal use. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye Protection: Wear safety glasses as appropriate for the task.

Hand Protection: Wear chemical resistant gloves.

Skin Protection: Use appropriate protective clothing to minimize exposure to skin.

9. PHYSICAL and CHEMICAL PROPERTIES

Form: Paste.

Color: Red

Odor: Mild

Odor Threshold: No data available

Flammable Limits (in air by volume, %): No data applicable.

Oxidizing Properties: No data available

Decomposition Temperature: No data available.

Percent Volatile: 0

Auto ignition Temperature: No data available.

Flash point: 160°C (320°F)

Freezing / Melting Points: No data available.

Boiling Point: > 100°C (> 212°F)

Vapor Pressure: No data available.

Specific Gravity (water = 1): 1.38

Evaporation Rate (n-BuAc = 1): Not applicable

CARB VOC: 0 wt % (calc.)

Solubility in Water: Insoluble.

SCAQMD (U.S. EPA Method 24): 0 gm/L

Coefficient Waster/Oil Distribution: No data available

Solubility in Solvent: No data available

pH: Not available.

10. STABILITY and REACTIVITY

Chemical Stability: This product is stable when properly stored at normal temperature and pressures.

Decomposition Products:

Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases

Materials with which substance would be incompatible: This product is incompatible with strong oxidizers.

Possibility of hazardous polymerization or reaction: Will not occur.

Conditions to avoid: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

General information: Information included in this section described the potential hazards of the hazardous components listed in section 2.

Inhalation: Inhalation of vapors may cause irritation of the nose, throat, and lungs and cause coughing. Due to the form of this product it is not expected to produce vapors.

Carcinogenicity: This product does not contain any chemical substances listed by US EPA, NTP, OSHA, IARC or ACGIH.

Contact with Skin or Eyes: Direct eye contact may cause irritation. Contact with skin may cause irritation and sensitization.

Skin Absorption: No data available.

Ingestion: No data available

12. ECOLOGICAL INFORMATION

Mobility in soil: No data available.

Persistence and Biodegradability: No data available

Bio-Accumulation Potential: No data available

Ecotoxicity: No data available

Environmental Exposure Controls: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

Disposal Methods: Dispose of in accordance with local, state, and federal laws and regulations.

14. TRANSPORTATION INFORMATION

DOT (US): This product is not classified as dangerous goods.

IATA: This product is not classified as dangerous goods.

IMDG: This product is not classified as dangerous goods.

15. REGULATORY INFORMATION

U.S. SARA Reporting Requirements: This product is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for components. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not contain any components on the California Proposition 65 lists.

16. OTHER INFORMATION

The information contained herein is based on data available to us and is accurate and reliable to the best of our knowledge and belief. However, Specified Technologies, Inc. makes no representations as to its completeness or accuracy. Information is supplied on condition that persons receiving such information will make their own determination as to its suitability for their purposes prior to use.

Prepared by: Specified Technologies, Inc

Preparation Date: 01/09/2017

Version: 1



SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, the Korean ISHA (Notice 2009-68), the Japanese Industrial Standard JIS Z 7250: 2000, Mexican NOM018-STPS 2000, SPRING Singapore, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

TRADE/MATERIAL NAME:

RELEVANT USE of the SUBSTANCE:

USES ADVISED AGAINST:

SUPPLIER/MANUFACTURER'S NAME:

Address:

Business Phone:

Emergency Phone:

SpecSeal® AMW Mineral Wool Insulation

Insulation Fire Barrier

Other than Relevant Use

Specified Technologies, Inc.

210 Evans Way,

Somerville, New Jersey 08876

(908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)

U.S., Canada: 1-800-255-3924 (24 hrs)

International: +1-813-248-0585 (collect-24 hrs)

EMAIL of Competent Person for Information on SDS:

techserv@stifirestop.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Category 2, Eye Irritation Category 2A, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation) Single Exposure Category 3

Signal Word: Warning

Hazard Statements: H350i: May cause cancer by inhalation. H319: Causes serious eye irritation. H335: May cause respiratory irritation.

Precautionary Statements:

Prevention: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P261: Avoid breathing vapors, fume. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, clothing, eye protection and face protection. P284: Wear respiratory protection.

Response: P308 + P313: IF exposed or concerned: Get medical advice/attention. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P313: If eye irritation persists: Get medical advice/attention. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P312: Call a POISON CENTER or doctor if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms).

Storage: P403 + P233 + P405: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols: GHS07, GHS08

KOREAN ISHA (Notice 2009-68) LABELING AND

CLASSIFICATION: Classified in accordance with ISHA

Notice 2009-68. Under ISHA, no differences in classification are



applicable.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Chinese IECSC Inventory	Japanese ENCS #	Korean ECL #	Taiwan NESCI ECS	WT%	LABEL ELEMENTS GHS & Japanese JIS Z7253 Classification Korean ISHA Classification GHS Hazard Codes
Proprietary Mineral Wool	Listed	Not Listed	Proprietary			94-99%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Carcinogenic Cat. 2, Eye Irritation Cat. 2A, STOT (Inhalation-Respiratory Irritation) SE Cat. 3 Hazard Codes: H351i, H319, H335
Proprietary Phenolic Formaldehyde Resin	Listed	Proprietary	Proprietary			1-6%	SELF CLASSIFICATION GHS & JAPANESE JIS Z7253, KOREAN ISHA: Classification: Skin Sensitization Cat. 1B Hazard Codes: H317

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES:

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If particulates are inhaled, remove victim to fresh air.

Eye Exposure: If this product contaminates the eyes, rinse eyes under gently running water. Ingestion: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, DO NOT INDUCE VOMITING.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory disorders may be aggravated by overexposures to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not determined.

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES:

Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTRAC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used. Use only non-sparking tools and equipment.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield,.

METHODS FOR CLEAN-UP AND CONTAINMENT:

Small Spills: Small releases of this product can be carefully picked-up, swept up or cleaned up avoiding generating of particulates.

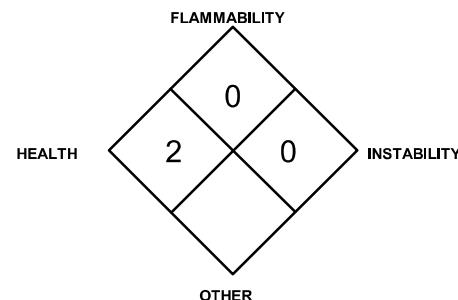
Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and sweep-up or vacuum with non-sparking vacuum, avoiding generation of dusts and particulates.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Close off sewers and take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse.. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

NFPA RATING



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this material ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics while handling this product. Wash hands thoroughly after handling this product or containers of this product. Avoid breathing particulates generated by this product. Use in a well-ventilated location.

CONDITIONS FOR SAFE STORAGE: Store containers in a cool, dry location, away from direct sunlight, sources of intense heat.

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR						
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		OTHER
		TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	TWA mg/m ³	STEL mg/m ³	IDLH mg/m ³
Proprietary Mineral Wool Fiber	10	NE	15 (total dust); 10 (vacated 1989 PEL)	NE	5 (total mineral wool dust, or 3 f/cc TWA (fibers ≤ 3.5 um diameter; ≥ 10 um length))	NE	5000 (Ca)	NE
Synthetic Vitreous Fibers	1 f/cc ^(F)	NE	NE	NE	NE	NE	NE	Carcinogen: IARC-3, MAK-3B, TLV-A3
Proprietary Phenolic Formaldehyde Resin	NE	NE	NE	NE	NE	NE	NE	NE

NE = Not Established. See Section 16 for Definitions of Other Terms Used

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

MINERAL WOOL FIBERS:

Mexico: TWA 10 mg/m³ (dust), 2004

PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. The following are NIOSH Respiratory Protective Equipment Guidelines for the Mineral Wool Fiber component to aid in selection of respiratory equipment in event of release of fibers.

MINERAL WOOL FIBERS

CONCENTRATION

RESPIRATORY PROTECTION

5X REL: Qm 10X REL: 95XQ Any supplied-air respirator (SAR).

25X REL: Sa:Cf Any Powered Air-Purifying Respirator (PAPR) with a high-efficiency particulate filter.

50X REL: 100F PAPR with a tight-fitting facepiece and a high-efficiency particulate filter, or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.

Emergency or planned entry into unknown concentrations or IDLH conditions: Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full-facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.

Escape: Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter.

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., lab coat, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA and Canadian Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Fibrous Batt or Board	COLOR: Grey-Yellow
MOLECULAR FORMULA: Mixture.	MOLECULAR WEIGHT: Mixture.
ODOR: Mild resin.	ODOR THRESHOLD: Not available.
FLAMMABLE LIMITS (in air by volume, %): Not applicable.	OXIDIZING PROPERTIES: Not applicable.
DECOMPOSITION TEMPERATURE: Not available.	PERCENT VOLATILE: Zero.
AUTOIGNITION TEMPERATURE: Not available.	FLASH POINT: Not applicable.
MELTING POINT: 1177°C (2150°F)	BOILING POINT: Not applicable.
VAPOR PRESSURE: Not applicable.	SPECIFIC GRAVITY (water = 1): Not available.
VAPOR DENSITY (air = 1): Not applicable.	CARB VOC: Not applicable.
EVAPORATION RATE (<i>n</i> -BuAc = 1): Not applicable.	SCAQMD (U.S. EPA Method 24): Not applicable.
SOLUBILITY IN WATER: Dissolves when wet; insoluble when cured.	SOLUBILITY IN SOLVENTS: Not available.
COEFFICIENT WATER/OIL DISTRIBUTION: Not established.	pH: Not applicable.
HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release):	The appearance may be a characteristic to distinguish a release of this product.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature and pressures (see Section 7, Handling and Storage).

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., carbon, silicon or nitrogen oxides, ammonia, phenols and formaldehyde).

Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong oxidizers.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

CONDITIONS TO AVOID: Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: Although unlikely due to the form of the product, inhalation of particles can cause irritation to the respiratory system. Chronic inhalation of Mineral Wool fibers can cause damage to the lungs. The Mineral Wool component is a suspect carcinogen by inhalation. Due to the form of this product, this hazard is lessened; however, all inhalation exposure must be avoided in order to mitigate carcinogenic potential.

Contact with Skin or Eyes: Direct eye contact with particulates may cause irritation, redness, and tearing from mechanical irritation. Skin contact with the Mineral Wool may cause mechanical irritation of the skin.

Skin Absorption: Components are not known to be absorbed through intact skin.

Ingestion: Ingestion is not a significant route of occupational exposure and is unlikely to occur..

Injection: Accidental injection of this product, via laceration or puncture by a contaminated object can cause redness at the site of injection.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: Exposure to this product may cause the following health effects:

Acute: Inhalation of particulates may cause irritation of respiratory system. Eye contact may cause mechanical irritation.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD (BLUE)	2*
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FLAMMABILITY HAZARD (RED)	0
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PHYSICAL HAZARD (YELLOW)	0
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PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

11. TOXICOLOGICAL INFORMATION (Continued)

HEALTH EFFECTS OR RISKS FROM EXPOSURE (continued):

Chronic: Prolonged or repeated skin exposure may cause dermatitis (dry red skin). The Mineral Wool component is a suspect human carcinogen by inhalation.

TARGET ORGANS: Acute: Eyes, respiratory system. Chronic: Respiratory system.

TOXICITY DATA: Currently, the following toxicological data are available for components of 1% or more concentration.

PROPRIETARY PHENOLIC FORMALDEHYDE RESIN:

LD₅₀ (Oral-Rat) 7 gm/kg: Autonomic Nervous System: other (direct) parasympathomimetic; Behavioral: muscle weakness; Lungs, Thorax, or Respiration: respiratory depression

LD₅₀ (Oral-Mouse) 7 gm/kg: Autonomic Nervous System: other (direct) parasympathomimetic; Behavioral: muscle weakness; Lungs, Thorax, or Respiration: respiratory depression

MINERAL WOOL FIBER:

LD (Intratracheal-Mouse) > 20 mg/kg: Lungs, Thorax, or Respiration: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases

TCLO (Inhalation-Rat) 16 mg/m³/6 hours/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes

TCLO (Inhalation-Rat) 5 mg/m³/7 hours/90 weeks-intermittent: Tumorigenic: carcinogenic by RTECS criteria; Blood: leukemia

TCLO (Inhalation-Hamster) 30 mg/m³/6 hours/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: dehydrogenases

TCLO (Inhalation-Hamster) 30 mg/m³/6 hours/78 weeks-intermittent: Lungs, Thorax, or Respiration: other changes

TDLo (Intrapерitoneal-Rat) 50 mg/kg: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Gastrointestinal: tumors

IRRITANCY OF PRODUCT: Particles from this product may cause irritation by inhalation or eye contact.

SENSITIZATION OF PRODUCT: Although the resin component is a suspect skin sensitizer, this product is not expected to cause this adverse effect.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

MINERAL WOOL FIBER (as synthetic vitreous fibers): ACGIH TLV-A3 (Confirmed Animal Carcinogen); IARC-3 (Unclassifiable as to Carcinogenicity in Humans); NIOSH Ca (Potential Occupational Carcinogen, with No Further Categorization); MAK-3B (Substances for Which In Vitro tests or animal studies have yielded evidence of carcinogenic effects that is not sufficient for classification in one of the other categories. Further studies are required before a final classification can be made.)

The remaining components are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.

REPRODUCTIVE TOXICITY INFORMATION: Components of this product have no reported mutagenic, embryotoxic, teratogenic or reproductive toxicity.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for this material.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided. No aquatic toxicity data are available for components.

OTHER ADVERSE EFFECTS: This material is not listed as having ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as dangerous goods under rules of IATA.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

OFFICIAL MEXICAN STANDARD; REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: This product is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: No; CHRONIC: Yes; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for components. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: Components of this product are listed on the TSCA Inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): The Mineral Wool component (Listed as Glass Wool Fiber) is on the California Proposition 65 lists. WARNING! This product contains a compound known to the State of California to cause cancer.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components are on the DSL or NDSL Inventories.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: Components are not on the CEPA Priorities Substances Lists.

Canadian WHMIS Classification and Symbols: This product would be categorized as a Controlled Product, D2B (Other Toxic Effects- Potential Carcinogenic Effect, Irritation) as per the Controlled Product Regulations.



CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# are listed on the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS: Components listed by CAS# are on the ENCS Inventory or are excepted.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemicals List (ECL) Status: Components listed by CAS# are listed on the Korean ECL Inventory.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is classified as hazardous.

SINGAPORE REGULATIONS:

List of Controlled Hazardous Substances: Components listed by CAS# are not listed on the Singapore List of Controlled Substances.

Code of Practice On Pollution Control Requirements: The components identified by CAS# in Section 2 (Composition and Information on Ingredients) NOT are subject to the requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Currently, it cannot be determined if components are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

REVISION DETAILS: Reviewed January 31, 2017

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721-1961 • (800) 441-3365

DATE OF PRINTING: February 1, 2017

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DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances that are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but that are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneupenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: **Group A:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL" is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Limits from the AIHA.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. **Skin Irritation:** Essentially non-irritating. Mechanical irritation may occur. PII or Draize = 0. **Eye Irritation:** Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. **Oral Toxicity LD₅₀ Rat:** > 5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 2000 mg/kg. **Inhalation Toxicity 4-hrs LC₅₀ Rat:** > 20 mg/L. **1 Slight Hazard:** Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. **Skin Irritation:** Slightly or mildly irritating. PII or Draize > 0 < 5. **Eye Irritation:** Slightly to mildly irritating, but reversible within 7 days. Draize > 0 ≤ 25. **Oral Toxicity LD₅₀ Rat:** > 500–5000 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 1000–2000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 2–20 mg/L. **2 Moderate Hazard:** Temporary or transitory injury may occur; prolonged exposure may affect the CNS. **Skin Irritation:** Moderately irritating; primary irritant; sensitizer. PII or Draize ≥ 5, with no destruction of dermal tissue. **Eye Irritation:** Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. **Oral Toxicity LD₅₀ Rat:** > 50–500 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 200–1000 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.5–2 mg/L. **3 Severe Hazard:** Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. **Skin Irritation:** Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PII or Draize > 5–8, with destruction of tissue. **Eye Irritation:** Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. **Oral Toxicity LD₅₀ Rat:** > 1–50 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** > 20–200 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** > 0.05–0.5 mg/L. **4 Severe Hazard:** Life-threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible injury may result from brief contact. **Skin Irritation:** Not appropriate. Do not rate as a 4, based on skin irritation alone. **Eye Irritation:** Not appropriate. Do not rate as a 4, based on eye irritation alone. **Oral Toxicity LD₅₀ Rat:** ≤ 1 mg/kg. **Dermal Toxicity LD₅₀ Rat or Rabbit:** ≤ 20 mg/kg. **Inhalation Toxicity LC₅₀ 4-hrs Rat:** ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: 0 Minimal Hazard: Materials that will not burn in air when exposure to a temperature of 815.5°C (1500°F) for a period of 5 minutes. **1 Slight Hazard:** Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur. This usually includes the following: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C (200°F) (i.e. OSHA Class IIIIB); and Most ordinary combustible materials (e.g. wood, paper, etc.). **2 Moderate Hazard:** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This usually includes the following: Liquids having a flash-point at or above 37.8°C (100°F); Solid materials in the form of coarse dusts that may burn rapidly but that generally do not form explosive atmospheres;

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

HEALTH HAZARD (continued): 2 (continued): Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors. **3 Severe Hazard:** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 38°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air (e.g., dusts of combustible solids, mists or droplets of flammable liquids); and Materials that burn extremely rapidly, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). **4 Severe Hazard:** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and that will burn readily. This usually includes the following: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. OSHA Class IA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (pyrophoric).

PHYSICAL HAZARD: 0 Water Reactivity: Materials that do not react with water. **Organic Peroxides:** Materials that are normally stable, even under fire conditions and will not react with water. **Explosives:** Substances that are Non-Explosive. **Compressed Gases:** No Rating. **Pyrophorics:** No Rating. **Oxidizers:** No 0 rating. **Unstable Reactives:** Substances that will not polymerize, decompose, condense, or self-react.). **1 Water Reactivity:** Materials that change or decompose upon exposure to moisture. **Organic Peroxides:** Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy violently. **Explosives:** Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. **Compressed Gases:** Pressure below OSHA definition. **Pyrophorics:** No Rating. **Oxidizers:** Packaging Group III oxidizers; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met.

Unstable Reactives: Substances that may decompose condense, or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosion hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors. **2 Water Reactivity:** Materials that may react violently with water. **Organic Peroxides:** Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. **Explosives:** Division 1.4 explosives. Explosive substances where the explosive effects are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. **Compressed Gases:** Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group II oxidizers. Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning

DEFINITION OF TERMS (Continued)

time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chloride solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. **Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential (or low risk) for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature. **3 Water Reactivity:** Materials that may form explosive reactions with water. **Organic Peroxides:** Materials that are capable of detonation or explosive reaction, but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water. **Explosives:** Division 1.3 explosives. Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. **Compressed Gases:** Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. **Pyrophorics:** No Rating. **Oxidizers:** Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. **4 Water Reactivity:** Materials that react explosively with water without requiring heat or confinement. **Organic Peroxides:** Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. **Explosives:** Division 1.1 & 1.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. **Compressed Gases:** No Rating. **Pyrophorics:** Add to the definition of Flammability 4. **Oxidizers:** No 4 rating. **Unstable Reactives:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: **0** Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 2000 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 2000 mg/kg. Materials essentially non-irritating to the respiratory tract, eyes, and skin. **1** Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 10 mg/L but less than or equal to 200 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials that slightly to moderately irritate the respiratory tract, eyes and skin. Materials with an LD₅₀ for acute oral toxicity greater than 500 mg/kg but less than or equal to 2000 mg/kg. **2** Materials that, under emergency conditions, can cause temporary incapacitation or residual injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 3,000 ppm but less than or equal to 5,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 2 mg/L but less than or equal to 10 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 200 mg/kg but less than or equal to 1000 mg/kg. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lacrimators.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

HEALTH HAZARD (continued): **2 (continued):** Materials that are primary skin irritants or sensitizers. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. **3** Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 3,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists with an LC₅₀ for acute inhalation toxicity greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials corrosive to the skin. Cryogenic gases that cause frostbite and irreversible tissue damage. Compressed liquefied gases with boiling points below -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials with an LD₅₀ for acute oral toxicity greater than 5 mg/kg but less than or equal to 50 mg/kg. **4** Materials that, under emergency conditions, can be lethal. Gases with an LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than ten times its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg.

FLAMMABILITY HAZARD: **0** Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D of NFPA 704. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D of NFPA 704. Liquids, solids, and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendations on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85% by weight. Liquids that have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Most ordinary combustible materials. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air. Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures with air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal, and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

INSTABILITY HAZARD: **0** Materials that in themselves are normally stable, even under fire conditions. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). **Flash Point:** Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. **Autoignition Temperature:** Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition. **LEL:** Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. **UEL:** Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. **LD₅₀:** Lethal Dose (solids & liquids) that kills 50% of the exposed animals. **LC₅₀:** Lethal Concentration (gases) that kills 50% of the exposed animals. **ppm:** Concentration expressed in parts of material per million parts of air or water. **mg/m³:** Concentration expressed in weight of substance per volume of air. **mg/kg:** Quantity of material, by weight, administered to a test subject, based on their body weight in kg. **TD₅₀:** Lowest dose to cause a symptom. **TCL₀:** Lowest concentration to cause a symptom. **TD₀, LD₀, and LC₀, or TC, TC₀, LC₀, and LC₅₀:** Lowest dose (or concentration) to cause lethal or toxic effects. **Cancer Information:** IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. RTECS: Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** BEI: ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. **BCE:** Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. **TL₅₀:** Median threshold limit. **log K_{ow} or log K_{ow}:** Coefficient of Oil/Water Distribution is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S.: EPA: U.S. Environmental Protection Agency. ACGIH: American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits. OSHA: U.S. Occupational Safety and Health Administration. NIOSH: National Institute of Occupational Safety and Health, which is the research arm of OSHA. DOT: U.S. Department of Transportation. TC: Transport Canada. SARA: Superfund Amendments and Reauthorization Act. TSCA: U.S. Toxic Substance Control Act. CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT; CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material's package label.

CANADA:

WHMIS: Canadian Workplace Hazardous Materials Information System. TC: Transport Canada. DSL/NDSL: Canadian Domestic/Non-Domestic Substances List.

JAPAN: METI: Ministry of Economy, Trade and Industry.



SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

1.1 Identification of the Mixture:

Trade Name: SpecSeal® Series SSS Sealant
Product Name: SpecSeal® Series SSS Sealant
EC No.: Not Registered (or Not Subject to Registration)

1.2 Relevant Identified Uses of the substance and uses advised against:

Intended Use: Firestop and Sound Transmission

1.3 Details of the Supplier of the Safety Data Sheet:

Supplier Name: **Specified Technologies, Inc.**
Address: 210 Evans Way
Somerville, New Jersey 08876, USA
Business Phone: 1-908-526-8000
Email: techserv@stifirestop.com

1.4 Emergency Telephone Number of Supplier

Emergency Phone: USA 1-800-255-3924 (24 hrs)
International: +1-813-248-0585 (collect-24 hrs)

Hours of Operation: 24 Hours
Language: English

2. HAZARD IDENTIFICATION

2.1 Classification of substance or mixture

This product is not a hazardous mixture as defined by the criteria established by the OSHA Hazard Communication Standard (29 CFR 1910.1200) and of the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

2.1.1 Classification according to Regulation (EC) No 1272/2008 (CLP)

This product does not meet the criteria for classification in any hazard class according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

2.1.2 Classification according to Directive EC 67/548/EEC or 1999/45/EC as amended

This product does not meet the criteria for classification in any hazard class according to Directive EC 67/548/EEC or 1999/45/EC as amended on classification, labelling and packaging of substances and mixtures.

2.2 Label Elements

Label in accordance with (EC) No. 1272/2008: Not classified
Label in accordance with 1999/45/EC: Not classified

2.3 Other Hazards

This product does not contain any PBT or vPvB substances.

3. COMPOSITION and INFORMATION ON INGREDIENTS

3.1 Mixture Composition

This product does not meet the criteria for classification in any hazard class according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Inhalation: Not anticipate based on product form
If vapours are inhaled, remove person to fresh air.

Skin contact: If mechanical irritation occurs, remove contaminated clothing and wash skin gently with soap and water.

Eye contact: If this product contaminated the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and the "roll" eyes while flushing. Minimum flushing is 20 minutes

Ingestion: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTRE FOR MOST CURRENT INFORMATION. If professional advice is not available, DO NOT INDUCE VOMITING. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow.

4.2 Most important symptoms and effects, both acute and delayed

Contact with skin, eyes, and upper respiratory system may cause mechanical irritation.

4.3 Indication of any immediate medical attention and special treatment needed

If any adverse reaction or discomfort continues from any of the above exposures, seek professional medical advice.

5. FIRE-FIGHTING MEASURES

5.1 Fire extinguishing media

5.1.1 Suitable extinguishing media

Water, foam, carbon dioxide (CO2), and dry powder

5.1.2 Unsuitable extinguishing media

Not available

5.2 Special hazards arising from the substance or mixture

This product is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases.

5.3 Advice for Firefighters

In large fires in poorly ventilated areas involving packaging materials respiratory protection / breathing apparatus may be required.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

6.1.1 For non-emergency personnel

Under normal handling conditions an accidental release is highly unlikely.
Uncontrolled releases should be responded to by trained personnel.

6.1.2 For emergency personnel

Use personal protection recommended in Section 8 of the SDS

6.2 Environmental Precautions

The product should not be released into nature but collected and delivered according to agreement with local authorities and practices.

6.3 Methods and material for containment and clean up

In dusty environments, use vacuum equipment where possible to minimize dust levels.

6.3 References to other sections

For personal protection see section 8. For waste disposal see section 13.

7. HANDLING and USE

7.1 Precautions for Safe Handling

As with all chemicals, avoid getting this material ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics while handling this product. Wash hands thoroughly after handling this product or containers of this product. Avoid breathing fumes or vapors generated by this product. Use in a well-ventilated location.

7.2 Conditions for Safe Storage, including any incompatibilities

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat. Do not store above 55°C (131°F).

7.3 Specific End Use(s)

This product is used as a sealant. Follow industry standards for use of this product.

8. EXPOSURE CONTROLS and PERSONAL PROTECTION

8.2 Exposure Controls – During normal handling of SpecSeal® SSS Sealant

8.2.1 Appropriate Engineering Controls

Engineering measures: Maintain sufficient mechanical or natural ventilation to that dust levels remain low. Use local exhaust if necessary. Power equipment should be equipped with properly designed dust collection devices.

8.2.2 Personal protection equipment

Eye/face Protection: Wear safety glasses as appropriate for the task.

Skin Protection: Minimize direct contact with skin. Wear chemical resistant gloves if needed to minimize contact with the product.

Other Skin Protection: After contact with the product, rinse skin in cold water to reduce potential effects of mechanical itching

Respiratory Protection: Respiratory protection is not required for normal use. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal Hazards: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., aluminum, calcium, carbon, and sulfur oxides, and acrylic monomers).

8.2.3 Environmental exposure controls

This product should not be released into the environment. Controls should be engineered to prevent release to the environment, include procedures to prevent spills and releases to waterways.

9. PHYSICAL and CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<u>Form</u> : Paste.	<u>Color</u> : Red
<u>Odor</u> : Mild acrylic.	<u>Odor Threshold</u> : No data available
<u>Flammable Limits (in air by volume, %)</u> : No data applicable.	<u>Oxidizing Properties</u> : No data available
<u>Decomposition Temperature</u> : No data available.	<u>Percent Volatile</u> : 20
<u>Auto ignition Temperature</u> : No data available.	<u>Flash point</u> : 320°C (608°F)
<u>Freezing / Melting Points</u> : No data available.	<u>Boiling Point</u> : > 100°C (> 212°F)
<u>Vapor Pressure</u> : No data available.	<u>Specific Gravity (water = 1)</u> : 1.24
<u>Vapor Density (air = 1)</u> : No data available.	<u>CARB VOC</u> : 0.4 wt % (calc.)
<u>Evaporation Rate (n-BuAc = 1)</u> : > 1	<u>SCAQMD (U.S. EPA Method 24)</u> : 29.2 gm/L
<u>Solubility in Water</u> : Insoluble.	<u>Solubility in Solvent</u> : No data available
<u>Coefficient Waster/Oil Distribution</u> : No data available	<u>pH</u> : Not available.

9.2 Other information

No additional properties information available

10. STABILITY and REACTIVITY

10.1 Reactivity

This product is stable when properly stored at normal temperature and pressures.

10.2 Chemical stability

This product is stable when properly stored at normal temperature and pressures.

10.3 Possibility of hazardous reactions

This product is incompatible with strong oxidizers.

10.4 Conditions to avoid

Avoid exposure to or contact with extreme temperatures and incompatible chemicals.

10.5 Incompatible materials

This product is incompatible with strong oxidizers.

10.6 Hazardous decomposition products

None in normal conditions of use.

Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., aluminum, calcium, carbon, and sulfur oxides, and acrylic monomers).

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity: No data were identified for the product.

Serious eye damage/irritation: Direct eye contact may cause irritation, redness, and tearing from mechanical irritation.

Skin Corrosion/Irritation: Prolonged and repeated skin exposure may cause dermatitis (dry skin).

Respiratory or skin sensitization: Inhalation of vapors may cause irritation of the nose, throat, and lungs and cause coughing. Due to the form of this product it is not expected to produce vapors.

Germ cell mutagenicity: No data were identified for this product.

Carcinogenicity:	No data were identified for this finished product.
Reproductive Toxicity:	No data available for this product.
Developmental Effects:	No data were identified for this product.
STOT - Single exposure:	No data were identified for this product.
STOT - Repeated exposure:	No data were identified for this product.
Aspiration hazard:	Not relevant
 Likely Routes of exposure:	
Ingestion:	Ingestion is not a significant route of occupational exposure and is unlikely to occur.
Inhalation	Due to the form of this product it is not expected to produce vapors.
Eye contact:	Respiratory protection is not required for normal use.
Symptoms associated with exposure :	Direct eye contact may cause irritation, redness, and tearing from mechanical irritation
	Contact with skin, eyes and upper respiratory system may cause mechanical irritation.

12. ECOLOGICAL INFORMATION

This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

12.1 Toxicity

This product is not ecotoxic to air, water or soil, by composition.

12.2 Persistence and Biodegradability

This product has not been tested for persistence or biodegradability. The mineral components are not expected to biodegrade to great extent.

12.3 Bioaccumulation Potential

This product has not been tested for bio-accumulation potential.

12.4 Mobility in soil

This product has not been tested for mobility in soil.

12.5 Results of PBT and vPvB assessment

Not relevant.

12.6 Other adverse effects:

None known.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of in accordance with local, state, and federal laws and regulations.

14. TRANSPORTATION INFORMATION

14.1 UN Number

Not regulated

14.2 UN proper shipping name

Not regulated

14.3 Transportation hazard class(es)

PRODUCT SAFETY DATA SHEET
PSDS No. 1.1
FLUORESCENT LAMPS



SYLVANIA brand Fluorescent Lamps, manufactured by OSRAM / OSRAM SYLVANIA, are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by OSRAM SYLVANIA as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Trade Name: **SYLVANIA Fluorescent Lamps**

- This data sheet covers Sylvania linear "White" (Cool White, Warm White, Daylight, etc; 700, 800, 900 series triphosphor) standard, "Sylvania ECO" brand, and Safeline® linear products in all lengths, T12 & T8 Octron Curvalume (6" and 1 5/8" leg spacing), and T9 Circline fluorescent lamps for general lighting.
- This data sheet does **not** cover compact fluorescent®, Pentron® (T5), plant, aquarium/vivarium, photocopy, germicidal, blacklight, or any colored or other special application fluorescent lamps.
- ①Safeline lamps are encased in a Polyethylene Terephthalate (PET) heat shrinkable tubing manufactured by EncapSulite International Inc., Stafford, TX.

Manufacturer: OSRAM SYLVANIA 100 Endicott Street
Danvers, MA 01923 Phone: (978) 777-1900

II. HAZARDOUS INGREDIENTS:

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.

If the lamp is broken, the following materials may be released:

Chemical Name	CAS Number	% by Wt.	ACGIH (TLV)	Exposure Limits in Air (mg/M3) OSHA (PEL)
Glass (soda-lime)	----	75-95	10(2)	15(2)
Mercury ^(1,4)	7439-97-6	0.002-0.02	0.025	0.1 Ceiling
Aluminum Oxide	001-344-281	0-2.0	10(2)	15(2)
Fluorescent Phosphor and cathodes may contain:	----	0.5-3.0	10(2)	15(2)
Fluoride (as F)	----	0-0.1	2.5	2.5
Manganese ⁽³⁾ (as dust)	7439-96-5	0-0.1	0.2	5.0 Ceiling
Tin ⁽³⁾ (as dust)	7440-31-5	0-0.1	2.0	2.0
Yttrium ⁽³⁾ (as dust)	7440-65-5	0-0.5	1.0	1.0
Barium ⁽³⁾ (as dust)	7440-39-3	<0.1	0.5	0.5
Tungsten ⁽³⁾ (as dust)	7440-33-7	<0.1	1	15(2)
Strontium ⁽³⁾ (as dust)	7440-24-6	0-0.1	10(2)	15(2)
Magnesium ⁽³⁾ (as dust)	7439-95-4	0-0.1	10(2)	15(2)
Calcium ⁽³⁾ (as dust)	----	0-0.1	10(2)	15(2)
Antimony ⁽³⁾ (as dust)	7440-36-0	0-0.1	0.5	0.5
Zinc ⁽³⁾ (as dust)	7440-66-6	0-0.1	10(2)	15(2)
Europium ⁽³⁾ (as dust)	7440-53-1	0-0.1	10(2)	15(2)
Cerium ⁽³⁾ (as dust)	7440-45-1	0-0.1	10(2)	15(2)

(1) These chemicals are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

(2) Limits as nuisance particulate.

(3) These elements are contained in the material as part of its chemical structure; the material is not a mixture.

(4) The mercury in this product is a substance known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]

III. PHYSICAL PROPERTIES : Not applicable to intact lamp.

IV. FIRE & EXPLOSION HAZARDS

Flammability: Non-combustible.

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

V. HEALTH HAZARDS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.

No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or NIOSH Pocket Guide to Chemical Hazards lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Mercury - Contact, inhalation, or ingestion may cause one or more of the following symptoms: eye irritation, skin irritation, cough, chest pain, dyspnea, bronchitis, pneumonitis, tremor, insomnia, irritability, indecision, headache, fatigue, weakness, stomatitis, salivation, GI tract disturbance, anorexia, weight loss, and proteinuria.

Glass - Glass dust is considered to physiologically inert and as such has an OSHA exposure limit of 15 mg/M₃ for total dust and 5 mg/M₃ for respirable dust. The ACGIH TLVs for particulates not otherwise classified are 10 mg/M₃ for total dust and 3 mg/M₃ for respirable dust.

Tin - Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, skin irritation, and respiratory system irritation.

Manganese - Contact, ingestion, or inhalation may cause one or more of the following symptoms: Parkinson's, asthenia, insomnia, mental confusion, metal fume fever, dry throat, cough, chest tightness, dyspnea, rales, flu-like fever, low-back pain, vomiting, malaise, fatigue, and kidney damage.

Fluoride - Fluoride-containing dust may cause irritation of the eyes and respiratory tract. Swallowing fluoride may cause a salty or soapy taste, vomiting, abdominal pain, diarrhea, shortness of breath, difficulty in speaking, thirst, weakness of the pulse, disturbed color vision, muscular weakness, convulsions, loss of consciousness, and death. Kidney injury and bleeding from the stomach may occur. Repeated exposure to fluoride may cause excessive calcification of the bone and calcification of ligaments of the ribs, pelvis, and spinal column. Stiffness and limitation of motion may result. Repeated or prolonged exposure of the skin to fluoride-containing dust may cause a skin rash.

Aluminum Oxide (Alumina) - Alumina is a non-toxic material. Sharp-edged particles can irritate the eyes, skin, and respiratory system.

Phosphor - Phosphor dust is considered to be physiologically inert and as such has an OSHA exposure limit of 15 mg/cubic meter for total dust and 5 mg/cubic meter for respirable dust.

Yttrium - Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, pulmonary irritation, and possible liver damage.

Barium (soluble compounds) - Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, skin irritation, upper respiratory system irritation, skin burns, gastroenteritis, muscle spasm, slow pulse, extrasystole, and hypokalemia.

Tungsten - Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, respiratory system irritation, diffuse pulmonary fibrosis, loss of appetite, nausea, cough, and blood changes.

Antimony - Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, skin irritation, nose irritation, throat irritation, mouth irritation, cough, dizziness, headache, nausea, vomiting, diarrhea, stomach cramps, insomnia, anorexia, and unable to smell properly.

V. HEALTH HAZARDS (Continued)

EMERGENCY AND FIRST AID PROCEDURES

Glass Cuts: Perform normal first aid procedures. Seek medical attention as required.

Inhalation: If discomfort, irritation or symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.

Ingestion: In the unlikely event of ingestion of a large quantity of material, seek medical attention.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention if irritation occurs.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHER): None

VI. REACTIVITY DATA

Stability: Stable

Conditions to avoid: None for intact lamps.

Incompatibility (materials to avoid): None for intact lamps.

Hazardous Decomposition Products (including combustion products): None for intact lamps.

Hazardous Polymerization Products: Will not occur.

VII. PROCEDURES FOR DISPOSAL OF LAMPS

OSRAM SYLVANIA recommends that all mercury-containing lamps be recycled. For a list of lamp recyclers and to obtain state regulatory disposal information, log onto www.lamprecycle.org.

If lamps are broken, ventilate area where breakage occurred. Clean-up with a special mercury vacuum cleaner (not a standard vacuum cleaner) or other suitable means that avoids dust and mercury vapor generation. Take usual precautions for collection of broken glass. Clean-up requires special care due to mercury droplet proliferation. Place materials in closed containers to avoid generating dust.

It is the responsibility of the waste generator to ensure proper classification and disposal of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations. Some states have specific disposal requirements for lamps containing mercury.

Lamps which pass the EPA's TCLP test are considered non-hazardous waste in most states. Always review your local and state regulations which can vary. Based upon the NEMA* Standard LL 1 (*Procedures for Linear Fluorescent Lamp Sample Preparation and the TCLP*) testing protocol, ECOLOGIC® lamps, marked "ECO," pass the TCLP test.

*NEMA (National Electrical Manufacturers Association) standard may be obtained from NEMA, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.

VIII. SPECIAL HANDLING INFORMATION - FOR BROKEN LAMPS

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Protective Clothing: OSHA specified cut and puncture resistant gloves are recommended for dealing with broken lamps.

Hygienic Practices: After handling broken lamps, wash hands and face thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

Although OSRAM SYLVANIA Inc. attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

In case of questions, please call:
OSRAM SYLVANIA Inc.

PRODUCT SAFETY DATA SHEET
PSDS No. 1.1.5
COMPACT FLUORESCENT LAMPS



SYLVANIA brand Compact Fluorescent Lamps, manufactured by OSRAM SYLVANIA, are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by OSRAM SYLVANIA as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Family Name: Sylvania Compact Fluorescent Lamps (For general lighting applications)
Trade Names (as labeled): Sylvania DULUX EL[®] (Consists of lamp and ballast/adapter as a unit)
Sylvania DULUX[®] (Pin-based lamp, no ballast/adapter)
DULUX EL & DULUX are registered trademarks of OSRAM GmbH.
Manufacturer: OSRAM SYLVANIA
100 Endicott Street
Danvers, Massachusetts
1-800-544-4828

II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. The following materials, unless specified otherwise, are part of the glass bulb portion of the DULUX EL unit and the entire DULUX unit. The % weight, unless specified otherwise, is relative to the glass bulb portion of the DULUX EL and the entire DULUX. If the glass bulb is broken, the following materials may be released:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% by wt.</u>	<u>Exposure Limits in Air (mg/cubic m)</u>	
			<u>ACGIH (TLV)</u>	<u>OSHA (PEL)</u>
Glass (Soda-Lime)	---	75-90	10.0 ⁽²⁾	15.0 ⁽²⁾
(1, 4) Mercury	7439-97-6	<0.02	0.025	0.1 Ceiling
(1, 3) Lead Oxide	1317-36-8	0.2-2.0	0.05	0.05
Aluminum Oxide	001-344-281	0-2.0	10.0 ⁽²⁾	15.0 ⁽²⁾
(1, 4, 6) Lead Solder (as Pb)	7439-92-1	0-0.4	0.05	0.05
(5) Krypton-85	7439-90-9	0-<0.01	---	---
Fluorescent Phosphor may contain:	---	0.5-3.0	10.0 ⁽²⁾	15.0 ⁽²⁾
(3) Barium Compounds (as Ba dust)	7440-39-3	0-0.1	0.5	0.5
(3) Manganese (as dust)	7439-96-5	0-0.1	0.2	5.0 Ceiling
(3) Yttrium Oxide (as Y dust)	7440-65-5	0-0.5	1.0	1.0

(1) These chemicals are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

(2) Limits as nuisance particulate.

(3) These elements are contained in the material as part of its chemical structure; the material is not a mixture.

(4) The mercury and lead in this product are substances known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]

(5) This radioactive isotope is only found in the glass-encapsulated starting switch mounted in the base of 2-pin DULUX lamps, and is *not* found in 4-pin DULUX or DULUX EL lamps.

(6) This material is found only on the base of the DULUX EL ballast/adapter unit and the % weight is relative to the entire lamp & ballast/adapter unit.

III. PHYSICAL PROPERTIES

Not applicable to intact lamp.

IV. FIRE & EXPLOSION HAZARDS

Flammability: Non-combustible.

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

V. HEALTH HAZARDS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or NIOSH Pocket Guide to Chemical Hazards lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Mercury - Exposure to high concentrations of vapors for brief periods can cause acute symptoms such as pneumonitis, chest pains, shortness of breath, coughing, gingivitis, salivation and possibly stomatitis. May cause redness and irritation as a result of contact with skin and/or eyes.

Lead - Ingestion and inhalation of lead dust or fume must be avoided. Irritation of the eyes and respiratory tract may occur. Excessive lead absorption is toxic and may include symptoms such as anemia, weakness, abdominal pain, and kidney disease.

Phosphor - Phosphor dust is considered to be physiologically inert and as such, has an OSHA exposure limit of 15 mg/cubic meter for total dust and 5 mg/cubic meter for respirable dust.

Barium Compounds - Alkaline barium compounds, such as the hydroxide and carbonate, may cause local irritation to the eyes, nose, throat, and skin.

Glass - Glass dust is considered to be physiologically inert and as such, has an OSHA exposure limit of 15 mg/cubic meter for total dust and 5 mg/cubic meter for respirable dust. The ACGIH TLVs for particulates not otherwise classified are 10 mg/cubic meter for total dust and 3 mg/cubic meter for respirable dust.

Manganese - Inhalation of manganese dust may cause local irritation to the eyes, nose, and throat.

Yttrium - Studies of workers exposed to this material showed no evidence of chronic or systemic effects.

Aluminum Oxide (Alumina) - Alumina is a non-toxic material which is very low in free silica content. Sharp-edged particles can irritate the eyes, perhaps the skin, and definitely the mucous membranes of the respiratory tract.

Krypton-85 Contained in Glow Switch - The radiation emitted by Kr-85 is 99.6% beta which is completely absorbed by the glass envelope of the glow switch and 0.4% gamma which is not. This radiation is, however, 100 to 200 times less than that allowable for clocks and watches. In the unlikely event of the glow switch breaking, the traces of krypton-85 gas immediately disperses in the air. Krypton gas and its radioactive isotope are inert (they do not react chemically with other substances) and are not absorbed by the body.

V. HEALTH HAZARDS (Continued)

EMERGENCY AND FIRST AID PROCEDURES

Glass Cuts: Perform normal first aid procedures. Seek medical attention as required.

Inhalation: If discomfort, irritation or symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.

Ingestion: In the unlikely event of ingestion of a large quantity of material, seek medical attention.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention if irritation occurs.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHER): None

VI. REACTIVITY DATA

Stability: Stable

Conditions to avoid: None for intact lamps.

Incompatibility (materials to avoid): None for intact lamps.

Hazardous Decomposition Products (including combustion products): None for intact lamps.

Hazardous Polymerization Products: Will not occur.

VII. PROCEDURES FOR DISPOSAL OF LAMPS

OSRAM SYLVANIA recommends that all mercury-containing lamps be recycled. For a list of lamp recyclers and to obtain state regulatory disposal information, log onto www.lamprecycle.org.

If lamps are broken, ventilate area where breakage occurred. Clean-up with a special mercury vacuum cleaner (not a standard vacuum cleaner) or other suitable means that avoid dust and mercury vapor generation. Take usual precautions for collection of broken glass. Clean-up requires special care due to mercury droplet proliferation. Place materials in closed containers to avoid generating dust.

It is the responsibility of the waste generator to ensure proper classification and disposal of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations. Some states have specific disposal requirements for lamps containing mercury.

Lamps which pass the EPA's TCLP test are considered non-hazardous waste in most states. Always review your local and state regulations which can vary. Based upon the NEMA* Standards LL 2 (*Procedures for Pin-Based Compact Fluorescent Lamp Sample Preparation and the TCLP*) and LL 6 (*Procedures for Integral Electronic Compact Fluorescent Lamp Sample Preparation and the TCLP*) testing protocol, ECOLOGIC® lamps, marked "ECO," pass the TCLP test.

*NEMA (National Electrical Manufacturers Association) standard may be obtained from NEMA, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.

VIII. SPECIAL HANDLING INFORMATION - FOR BROKEN LAMPS

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Protective Clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Hygienic Practices: After handling broken lamps, wash thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

Although OSRAM SYLVANIA attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

Issue Date: August 15, 2012 Rev F

Supersedes: May18, 2011 Rev E

In case of questions, please call: OSRAM SYLVANIA Safety / Environmental Engineer at: (914) 427-5599

PRODUCT SAFETY DATA SHEET
PSDS No. 1.1.8
T5 FLUORESCENT LAMPS



Sylvania brand Pentron® Fluorescent Lamps, manufactured by OSRAM GmbH, are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by OSRAM SYLVANIA as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Trade Name: **Sylvania Pentron® Fluorescent Lamps** (for general lighting applications)

Manufacturer:

OSRAM GmbH
Berliner Allee 65
D-86136 Augsburg
Germany

For Technical Inquiries in the U.S.A.:

OSRAM SYLVANIA
100 Endicott Street
Danvers, MA 01923
(978) 777-1900

II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. If the lamp is broken, the following materials may be released:

Chemical Name	CAS Number	% by Wt.	Exposure Limits in Air (mg/M ³)	
			ACGIH (TLV)	OSHA (PEL)
Glass (barium alkalai silicate glass)	----	93 - 95	10 ⁽²⁾	15 ⁽²⁾
Glass (alkalai alkaline earth silicate glass)	----	2 - 7	10 ⁽²⁾	15 ⁽²⁾
Mercury ^(1,4)	7439-97-6	0.005 - 0.02	0.025	0.1 Ceiling
Aluminum Oxide	001-344-281	0.06 - 0.3	10 ⁽²⁾	15 ⁽²⁾
Fluorescent Phosphor and cathodes may contain:	-----	1.85 - 1.95	10 ⁽²⁾	15 ⁽²⁾
Yttrium ⁽³⁾ (as dust)	7440-65-5	0.9 - 1.6	1.0	1.0
Barium ⁽³⁾ (as dust)	7440-39-3	0.09 - 0.4	0.5	0.5
Tungsten (as dust)	7440-33-7	<0.1	5	-----
Strontium ⁽³⁾ (as dust)	7440-24-6	<0.1	10 ⁽²⁾	15 ⁽²⁾
Magnesium ⁽³⁾ (as dust)	7439-95-4	0.3 - 0.6	10 ⁽²⁾	15 ⁽²⁾
Calcium ⁽³⁾ (as dust)	-----	<0.1	10 ⁽²⁾	15 ⁽²⁾
Europium ⁽³⁾ (as dust)	7440-53-1	0.9 - 1.6	10 ⁽²⁾	15 ⁽²⁾
Cerium ⁽³⁾ (as dust)	7440-45-1	0.3 - 0.6	10 ⁽²⁾	15 ⁽²⁾
Terbium ⁽³⁾ (as dust)	7440-27-9	0.3 - 0.6	10 ⁽²⁾	15 ⁽²⁾
Aluminum ⁽³⁾ (as dust)	7429-90-5	0.3 - 0.6	10 ⁽²⁾	15 ⁽²⁾

(1) This chemical is subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

(2) Limits as nuisance particulate.

(3) These elements are contained in the material as part of its chemical structure; the material is not a mixture.

(4) The mercury in this product is a substance known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]

III. PHYSICAL PROPERTIES

Not applicable to intact lamp.

IV. FIRE & EXPLOSION HAZARDS

Flammability: Non-combustible.

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

V. HEALTH HAZARDS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or NIOSH Pocket Guide to Chemical Hazards lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Mercury - Contact, inhalation, or ingestion may cause one or more of the following symptoms: eye irritation, skin irritation, cough, chest pain, dyspnea, bronchitis, pneumonitis, tremor, insomnia, irritability, indecision, headache, fatigue, weakness, stomatitis, salivation, GI tract disturbance, anorexia, weight loss, and proteinuria.

Glass - Glass dust is considered to be physiologically inert and as such has an OSHA exposure limit of 15 mg/cubic meter for total dust and 5 mg/cubic meter for respirable dust. The ACGIH TLVs for particulates not otherwise classified are 10 mg/cubic meter for total dust and 3 mg/cubic meter for respirable dust.

Aluminum Oxide (Alumina) - Alumina is a non-toxic material. Sharp-edged particles can irritate the eyes, skin, and respiratory system.

Phosphor - Phosphor dust is considered to be physiologically inert and as such has an OSHA exposure limit of 15 mg/cubic meter for total dust and 5 mg/cubic meter for respirable dust.

Yttrium - Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, pulmonary irritation, and possible liver damage.

Barium (soluble compounds) - Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, skin irritation, upper respiratory system irritation, skin burns, gastroenteritis, muscle spasm, slow pulse, extrasystole, and hypokalemia.

Tungsten - Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, respiratory system irritation, diffuse pulmonary fibrosis, loss of appetite, nausea, cough, and blood changes.

EMERGENCY AND FIRST AID PROCEDURES

Glass Cuts: Perform normal first aid procedures. Seek medical attention as required.

Inhalation: If discomfort, irritation or symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.

Ingestion: In the unlikely event of ingestion of a large quantity of material, seek medical attention.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention if irritation occurs.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHER): None

VI. REACTIVITY DATA

Stability: Stable

Conditions to avoid: None for intact lamps.

Incompatibility (materials to avoid): None for intact lamps.

Hazardous Decomposition Products (including combustion products): None for intact lamps.

Hazardous Polymerization Products: Will not occur.

VII. PROCEDURES FOR DISPOSAL OF LAMPS

OSRAM SYLVANIA recommends that all mercury-containing lamps be recycled. For a list of lamp recyclers and to obtain state regulatory disposal information, log onto www.lamprecycle.org.

If lamps are broken, ventilate area where breakage occurred. Clean up with a special mercury vacuum cleaner (not a standard vacuum cleaner) or other suitable means that avoids dust and mercury vapor generation. Take usual precautions for collection of broken glass. Clean-up requires special care due to mercury droplet proliferation. Place materials in closed containers to avoid generating dust.

It is the responsibility of the waste generator to ensure proper classification and disposal of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations. Some states have specific disposal requirements for lamps containing mercury.

VIII. SPECIAL HANDLING INFORMATION - FOR BROKEN LAMPS

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Protective Clothing: OSHA specified cut and puncture resistant gloves are recommended for dealing with broken lamps.

Hygienic Practices: After handling broken lamps, wash hands and face thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

Although OSRAM SYLVANIA Products Inc. attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

Issue Date: 08/15/12 Rev E

Supersedes: 07/19/11 rev D

In case of questions, please call:
OSRAM SYLVANIA

Product Safety Engineer
(978) 777-1900

PRODUCT SAFETY DATA SHEET
PSDS No. 1.5.3
DE TUBULAR HID LAMPS



Sylvania brand, unjacketed, Tubular HID Lamps, manufactured by OSRAM SYLVANIA Inc., are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by OSRAM SYLVANIA as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Trade Name (as labeled): Sylvania Double-Ended Tubular HID Lamps

Manufacturer: OSRAM de Mexico S.A. de C.V
A.J. Bermudes, C.P. 32470
Cd. Juarez, Chihuahua, Mexico

II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. If the lamp is broken, the following materials may be released:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% by wt.</u>	<u>Exposure Limits in Air (mg/cubic m)</u>	
			<u>ACGIH (TLV)</u>	<u>OSHA (PEL)</u>
(1, 2) Mercury	7439-97-6	0.05-<0.6	0.025	0.1 Ceiling
(1) Antimony Trioxide	1309-64-4	0-<0.1	0.5	0.5
Boron Oxide	1303-86-2	0-<0.4	---	15
Glass (Aluminosilicate)	142844-00-6	0 -<25	1.0 fiber/cc	1.0 fiber/cc
Quartz, Fused	60676-86-0	85-95	0.1 Resp. Dust	0.1
Platinum	7440-06-4	<0.05	1	---

(1) These chemicals are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
(2) The mercury in this product is one of the substances known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]

III. PHYSICAL PROPERTIES

Not Applicable to intact lamp.

IV. FIRE & EXPLOSION HAZARDS

Flammability: Non-combustible

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

V. HEALTH HAZARDS

A. OPERATING LAMPS

Consult the OSRAM SYLVANIA Product Catalog or relevant technical data sheets for complete warnings, operating and installation guides for specific lamp types.

WARNING:

- **High intensity discharge (HID) arc-tubes operate at high pressure and high temperature and may unexpectedly rupture.**
- **Shortwave ultraviolet radiation which may cause skin and eye irritation with prolonged exposure is emitted during operation.**
- **These HID lamps must be operated only in suitably designed, enclosed fixtures.**

B. LAMP MATERIALS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or NIOSH Pocket Guide to Chemical Hazards lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Mercury - Exposure to high concentrations of vapors for brief periods can cause acute symptoms such as pneumonitis, chest pains, shortness of breath, coughing, gingivitis, salivation and possibly stomatitis. May cause redness and irritation as a result of contact with skin and/or eyes.

Antimony - Exposure to antimony may cause electrocardiogram alterations, dermatitis, pneumoconiosis, and mucous membrane irritation.

Platinum - Exposure to complex platinum salts has been shown to cause symptoms of intoxication such as wheezing, coughing, running of the nose, tightness in the chest, shortness of breath and cyanosis, whereas exposure to dust of pure metallic platinum causes no intoxication.

Quartz, Fused - Fibrosis of the lungs causing shortness of breath and coughing has been associated with silica exposure.

EMERGENCY AND FIRST AID PROCEDURES:

Glass Cuts: Normal first aid procedures. Seek medical attention as required.

Inhalation: If discomfort, irritation or symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.

Ingestion: Seek medical attention.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention if irritation occurs.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHER): None

VI. REACTIVITY DATA

Stability: Stable

Conditions to avoid: None for intact lamps.

Incompatibility (materials to avoid): None for intact lamps.

Hazardous Decomposition Products (including combustion products): None for intact lamps.

Hazardous Polymerization Products: Will not occur.

VII. PROCEDURES FOR DISPOSAL OF LAMPS

OSRAM SYLVANIA recommends that all mercury-containing lamps be recycled. For a list of lamp recyclers and to obtain state regulatory disposal information, log onto www.lamprecycle.org.

If lamps are broken, ventilate area where breakage occurred. Clean-up with a special mercury vacuum cleaner (not a standard vacuum cleaner) or other suitable means that avoids dust and mercury vapor generation. Take usual precautions for collection of broken glass. Clean-up requires special care due to mercury droplet proliferation. Place materials in closed containers to avoid generating dust and mercury vapor. Some states have specific disposal requirements for lamps containing mercury.

It is the responsibility of the waste generator to ensure proper classification and disposal of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations.

VIII. SPECIAL HANDLING INFORMATION - FOR BROKEN LAMPS

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken. To avoid exposure to ultraviolet radiation, use only in enclosed equipment designed for this lamp type.

Protective Clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Hygienic Practices: After handling broken lamps, wash thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

IV. ENVIRONMENTAL

RoHS:

All SYLVANIA and OSRAM lamps listed above meet the EC directive Restriction of Hazardous Substances (RoHS II) Directive 2011/65/EU for mercury and lead.

REACH:

Safety Datasheets are required by article 33 of REACH (Registration, Evaluation, Authorization and Restriction of Chemicals). Safety Datasheets are similar to OSHA Material/Product Safety Data Sheets and are meant to instruct the end-user (customer) on safe handling of the product, if there are any SVHC's (Substances of Very High Concern). For lamps, if any SVHC exists, the amount will be small and encapsulated in the component. Exposure to the SVHC would require grinding the component up.

OSRAM SYLVANIA Inc. HID lamps listed above contain no SVHC as of 11/22/13. See <http://echa.europa.eu/web/guest/candidate-list-table>

Although OSRAM SYLVANIA Products Inc. attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

Issue Date: November 22, 2013 (E)

Supersedes: July 9, 2011 (D)

In case of questions please call:

OSRAM SYLVANIA Inc.
Product Safety Manager
(978) 750 2581

XIV. TRANSPORT INFORMATION**Domestic (Land, D.O.T.):**CLASS: Radioactive Material (7)*PRODUCT LABEL: OSRAM/OSRAM SYLVANIA Metal Halide LampUN NUMBER: 2911PACKING GROUP: n/aPROPER SHIPPING NAME: Radioactive material, excepted package - ArticlesSUPPLEMENTAL HAZARD: NA**International (Water, IMO)**CLASS: Radioactive Material (7)*PRODUCT LABEL: OSRAM/OSRAM SYLVANIA Metal Halide LampUN NUMBER: 2911PACKING GROUP: n/aPROPER SHIPPING NAME: Radioactive material, excepted package - Articles.**International (Air, IATA & ICAO)**CLASS: Corrosive (8)**PRODUCT LABEL: OSRAM/OSRAM SYLVANIA Metal Halide LampUN NUMBER: 3506PACKING GROUP: IIIPROPER SHIPPING NAME: Mercury Contained in manufactured articles, radioactive material, excepted package – Articles* For consignments containing over 10,000 Bq* * For Mercury over 1G per article or 30 G per package, and consignments containing over 10,000 Bq

Emergency Telephone number: INTERNATIONAL: + 49 1784337434 FROM USA: + 011 49 1784337434

CONSULTANK LUTZ HARDER GMBH/ Contract number OSRAM 002

SAFETY DATA SHEET

High Pressure Mercury Lamps



SYLVANIA brand High Pressure Mercury Lamps, manufactured by LEDVANCE, LLC, are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by LEDVANCE, LLC as a courtesy to its customers.

I. IDENTIFICATION

Trade Name (as labeled): **SYLVANIA Mercury lamps for general lighting purposes (Mercury Vapor Lamps, High Pressure Mercury Lamps)**

Manufacturer: OSRAM China Lighting LTD.
No. 1 North Industrial Road
Foshan, Guangdong, 52800

Emergency Contact: EH&S Specialist 978-570-3000

II. HAZARD IDENTIFICATION



Warning!

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.

Warning! RUPTURE RISKS: Mercury lamps are constructed of an outer glass bulb with an internal arc-tube made of quartz. Mercury arc-tubes operate at high pressure and at very high temperatures and can unexpectedly rupture due to internal causes or external factors such as a ballast failure or misapplication. An arc-tube rupture can burst and shatter the outer glass bulb resulting in the discharge of glass fragments and extremely hot quartz particles. In the event of such rupture, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

TO REDUCE THESE RISKS: Only operate lamp with compatible ballast and fixture. (See LEDVANCE catalog for specific information.)

- Fixture lens/diffuser material must be able to contain hot lamp fragments (as high as 1832°F, 1000°C).
- Never expose an operating lamp to moisture (such as rain, sleet, or snow).
- Replace lamp if outer glass bulb is scratched, cracked or damaged in any way.
- Electrically insulate any metal support in contact with the outer bulb to avoid glass decomposition.

- Replace lamp at or before the end of rated life. (See catalog for rated life.)

WARNING: ELECTRICAL SHOCK AND BURN HAZARD Do not remove or insert lamp while power is on. If outer glass bulb is broken, shut off power immediately and remove lamp after it has cooled.

If burn or irritation persists: get medical attention

WARNING! ULTRAVIOLET RADIATION EXPOSURE: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. This product conforms to the following federal regulations: U.S.A.: 21 CFR 1040.30 and CANADA: SOR/80-381.

Do not handle until all safety precautions have been read and understood. Care must be taken to read and follow the directions and warnings accompanying the specific product to avoid personal injury and/or property damage.

Storage: Store in well-ventilated place.

Consult the SYLVANIA product catalog or relevant technical data sheets for complete warnings, operating and installation guides for specific lamp types.

III. COMPOSITION – INFORMATION ON INGREDIENTS

There are no known health hazards from exposure to lamps that are intact.

Materials listed on this data sheet are contained in varying percentages in this product. Exact percentages are proprietary and will not be disclosed other than as required in accordance with the regulations. If a lamp is broken, some of the following materials may be released:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% by wt.</u>
Quartz, fused	60676-86-0	5-15
(1,2) Lead Solder (as Pb)	7439-92-1	0-<1.0
(1,2) Mercury	7439-97-6	<0.1
Aluminum Oxide	1344-28-1	0-<10
Glass (Borosilicate)	---	0-75
Yttrium Vanadate	13566-12-6	0-<0.5

(1) These chemicals are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

(2) The mercury and lead in this product are substances known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or NIOSH Pocket Guide to Chemical Hazards lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Glass - Glass dust is considered to be physiologically inert and as such has an OSHA exposure limit of 15 mg/M3 for total dust and 5 mg/M3 for respirable dust. The ACGIH TLVs for particulates not otherwise classified are 10 mg/M3 for total dust and 3 mg/M3 for respirable dust.

Quartz, Fused - Fibrosis of the lungs causing shortness of breath and coughing has been associated with silica exposure.

Lead - Ingestion and inhalation of lead dust or fume must be avoided. Irritation of the eyes and respiratory tract may occur. Excessive lead absorption is toxic and may include symptoms such as anemia, weakness, abdominal pain, and kidney disease.

Mercury - Exposure to high concentrations of vapors for brief periods can cause acute symptoms such as pneumonitis, chest pains, shortness of breath, coughing, gingivitis, salivation and possibly stomatitis. May cause redness and irritation as a result of contact with skin and/or eyes.

Yttrium Vanadate - Inhalation of vanadium compounds can cause irritation of the nose, throat and respiratory tract. Eye contact and prolonged, repeated skin contact may also cause irritation. Studies of workers exposed to this material showed no evidence of chronic or systemic effects.

Aluminum Oxide (Alumina) - Alumina is a non-toxic material which is very low in free silica content. Sharp edged particles can irritate the eyes, perhaps the skin, and definitely the mucous membranes of the respiratory tract.

All other components of this product do not pose a significant risk of respiratory and/or physical effects.

IV. EMERGENCY AND FIRST AID PROCEDURES:

Glass Cuts: Perform normal first aid procedures. Seek medical attention as required.

Inhalation: If discomfort or irritation to the nose and throat develop, remove from exposure and seek medical attention as needed. If breathing has stopped, perform artificial respiration; keep affected person warm and at rest; get medical attention as soon as possible.

Ingestion: In the unlikely event of ingesting a large quantity of material, seek medical attention immediately.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention as needed.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

V. FIRE-FIGHTING MEASURES:

Flammability: Non-combustible

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

VI. ACCIDENTAL RELEASE MEASURES:

ONLY APPLICABLE FOR BROKEN LAMPS

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Protective clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Hygienic practices: After handling broken lamps, wash hands and face thoroughly before eating, drinking, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

VII. SPECIAL HANDLING INFORMATION - FOR BROKEN LAMPS

ONLY APPLICABLE FOR BROKEN LAMPS

BROKEN ARC-TUBE: Take care in handling and disposing of this lamp. **If arc-tube is broken, avoid skin contact with any of the contents and fragments.**

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken. To avoid exposure to ultraviolet radiation, use only in enclosed equipment designed for this lamp type.

Protective Clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Hygienic Practices: After handling broken lamps, wash thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

Storage Instructions: Store in well-ventilated place.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Threshold Value Limits:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Exposure Limits in Air (mg/cubic m)</u>	
		<u>ACGIH (TLV)</u>	<u>OSHA (PEL)</u>
Quartz, fused	60676-86-0	0.1 Resp Dust	0.1
(1, 2) Lead Solder (as Pb)	7439-92-1	0.05	0.05
(1, 2) Mercury	7439-97-6	0.025	0.1 Ceiling
Aluminum Oxide	1344-28-1	10.0 (3)	15.0 (3)
Glass (Borosilicate)	---	10.0 (3)	15.0 (3)
Yttrium Vanadate	13566-12-6	1.0	1.0

(1) These chemicals are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

(2) The mercury and lead in this product are substances known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]

(3) Limits as nuisance particulate.

Personal Protective Equipment: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Skin Protection: After handling broken lamps, wash hands and face thoroughly before eating, drinking, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

VIV. PHYSICAL AND CHEMICAL PROPERTIES

NOT APPLICABLE FOR LAMPS

X. STABILITY AND REACTIVITY

NOT APPLICABLE FOR LAMPS

XI. TOXICOLOGICAL INFORMATION

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.

XII. ECOLOGICAL INFORMATION

XIII. DISPOSAL CONSIDERATIONS

LEDVANCE, LLC recommends that all mercury-containing lamps be recycled. For a list of lamp recyclers and to obtain state regulatory disposal information, call 1-866-666-6850 or log onto www.lamprecycle.org.

If lamps are broken, ventilate area where breakage occurred. Clean-up with mercury vacuum cleaner or other suitable means that avoids dust and mercury vapor generation. Take usual precautions for collection of broken glass. Place materials in closed containers to avoid generating dust and mercury vapor.

It is the responsibility of the waste generator to ensure proper classification and disposal of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations.

Lamps that pass the US EPA's TCLP test are considered non-hazardous waste in most states. Always review your local and state regulations which can vary.

XVI. TRANSPORTATION INFORMATION

XVII. REGULATORY INFORMATION

Although LEDVANCE, LLC attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

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Issue Date: October 1, 2016

In case of questions please call:

EH&S Specialist 978-570-3000

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PRODUCT SAFETY DATA SHEET
PSDS No. 1.3
HIGH PRESSURE SODIUM LAMPS



Sylvania brand High Pressure Sodium Lamps, manufactured by OSRAM SYLVANIA Inc., are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by OSRAM SYLVANIA as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Trade Name (as labeled):	Sylvania Lumalux®, Lumalux® ECO®, Lumalux Plus®, Lumalux Plus® ECO®, Lumalux® Standby (High Pressure Sodium Lamps for General Lighting)		
Manufacturer:	OSRAM SYLVANIA Inc. 655 South Willow Street Manchester, NH 03103-5705	OSRAM de Mexico S.A. de C.V. 950 Joule Street, Industrial Park A.J. Bermudes, C.P. 32470 Cd. Juarez, Chihuahua, Mexico	

II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.
If the lamp is broken, the following materials may be released:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% by wt.</u>	<u>Exposure Limits in Air (mg/cubic m)</u>	
			<u>ACGIH (TLV)</u>	<u>OSHA (PEL)</u>
Barium Compounds (as Ba)	7440-39-3	0.02-<0.1	0.5	0.5
Sodium	7440-23-5	0.003-<0.01	---	---
(1, 2) Mercury	7439-97-6	0.01-<0.05	0.025	0.1 Ceiling
Glass (Tungsten-Sealing Borosilicate)	---	50-75	10 (3)	15 (3)
Aluminum Oxide	1344-28-1	<15	10 (3)	15 (3)

- (1) These chemicals are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
- (2) The mercury and lead in this product are substances known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]
- (3) Limits as nuisance particulate.

III. PHYSICAL PROPERTIES

Not applicable to intact lamp.

IV. FIRE & EXPLOSION HAZARDS

Flammability: Non-combustible.

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

V. HEALTH HAZARDS

A. OPERATING LAMPS

WARNING:

- **To avoid risk of lamp rupture, lamps must be operated with compatible ballast and fixture only.**

B. LAMP MATERIALS**THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE**

INTACT. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or NIOSH Pocket Guide to Chemical Hazards lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Barium Compounds - Alkaline barium compounds, such as the hydroxide and carbonate, may cause local irritation to the eyes, nose, throat, and skin.

Lead - Ingestion and inhalation of lead dust or fume must be avoided. Irritation of the eyes and respiratory tract may occur. Excessive lead absorption is toxic and may include symptoms such as anemia, weakness, abdominal pain, and kidney disease.

Sodium - Skin contact can cause thermal and/or alkali burns. Fumes from burning sodium are highly irritating to skin, eyes and mucous membranes.

Mercury - Exposure to high concentrations of vapors for brief periods can cause acute symptoms such as pneumonitis, chest pains, shortness of breath, coughing, gingivitis, salivation and possibly stomatitis. May cause redness and irritation as a result of contact with skin and/or eyes.

Glass - Glass dust is considered to be physiologically inert and as such, has an OSHA exposure limit of 15 mg/cubic meter for total dust and 5 mg/cubic meter for respirable dust. The ACGIH TLVs for particulates not otherwise classified are 10 mg/cubic meter for total dust and 3 mg/cubic meter for respirable dust.

Aluminum Oxide (Alumina) - Alumina is a non-toxic material which is very low in free-silica content. Sharp-edged particles can irritate the eyes, perhaps the skin, and definitely the mucous membranes of the respiratory tract.

EMERGENCY AND FIRST AID PROCEDURES

Glass Cuts: Perform normal first aid procedures. Seek medical attention as required.

Inhalation: If discomfort, irritation or symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.

Ingestion: Seek medical attention.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention if irritation occurs.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHER): None

VI. REACTIVITY DATA

Stability: Stable

Conditions to avoid: None for intact lamps.

Incompatibility (materials to avoid): None for intact lamps.

Hazardous Decomposition Products (including combustion products): None for intact lamps.

Hazardous Polymerization Products: Will not occur.

VII. PROCEDURES FOR DISPOSAL OF LAMPS

OSRAM SYLVANIA recommends that all mercury-containing lamps be recycled. For a list of lamp recyclers and to obtain state regulatory disposal information, log onto www.lamprecycle.org.

If lamps are broken, ventilate area where breakage occurred. Clean-up with a special mercury vacuum cleaner (not a standard vacuum cleaner) or other suitable means that avoids dust and mercury vapor generation. Take usual precautions for collection of broken glass. Clean-up requires special care due to mercury droplet proliferation. Place materials in closed containers to avoid generating dust and mercury vapor.

It is the responsibility of the waste generator to ensure proper classification and disposal of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations. Some states have specific disposal requirements for lamps containing mercury.

Lamps which pass the EPA's TCLP test are considered non-hazardous waste in most states. Always review your local and state regulations which can vary. Based upon the NEMA* Standard LL 3 (*Procedures for High Intensity Discharge Lamp Sample Preparation and the TCLP*) testing protocol, Lumalux® ECO®, Lumalux Plus® ECO® lamps pass the TCLP test.

*NEMA (National Electrical Manufacturers Association) standard may be obtained from NEMA, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.

VIII. SPECIAL HANDLING INFORMATION - FOR BROKEN LAMPS

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Protective Clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Hygienic Practices: After handling broken lamps, wash thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

Although OSRAM SYLVANIA Products Inc. attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

Issue Date: [04/29/2011\(E\)](#)

Supersedes: October 01, 2009 (D)

In case of questions, please call:

OSRAM SYLVANIA Inc.
Product Safety and Compliance Manager
(978) 750 2581

**PRODUCT SAFETY DATA SHEET
PSDS No. 1.9
HIGH PRESSURE XENON LAMPS**



OSRAM Xenon Short Arc Display/Optic Lamp XBO®, manufactured by OSRAM GmbH., are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by OSRAM SYLVANIA as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Trade Name (as labeled): **OSRAM Xenon Short Arc Display/Optic Lamp XBO®**

This data sheet covers the following model(s):
XBO > 450 W

Manufacturer: For General Information: For Technical Inquiries:

OSRAM GmbH
Hellabrunner Strasse 1
81536 Munich
Germany

OSRAM SYLVANIA
National Customer Sales and Service Center
Westfield IN
1-888-OSRAM CS
1-888-677-2627

SYLVANIA Componentes Electrónicos
950 Joule Street, Industrial Park
A.J. Bermudes, C.P. 32470
Cd. Juarez, Chihuahua, Mexico
915-775-2939

II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.
If the lamp is broken, the following materials may be released:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% by wt.</u>	<u>Exposure Limits in Air (mg/cubic m)</u>	
			<u>ACGIH (TLV)</u>	<u>OSHA (PEL)</u>
Quartz, Fused	60676-86-0	25 - 35	0.1 Resp. Dust	0.1 Ceiling
Tungsten (Insoluble compounds)	7440-33-7	15 - 30	---	---
			5	10
Molybdenum (Insoluble compounds)	7439-98-7	0,0015 – 0,0035	---	---
			10	15
(2) Thorium Dioxide	1314-20-1	0,0025 – 0,0030	---	---
	NRC maximum permissible dose for occupational exposure:	0-100	5000 mrem/yr	
	NRC maximum permissible dose for non-occupational exposure:	0-100	100 mrem/yr	
(1) Nickel	7440-02-0	0,025 – 0,045	0.05	1

- (1) These chemicals are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
- (2) Limits for Thorium Dioxide have not been established by the ACGIH. All applicable requirements for radioactive materials, including exposure limits contained in 29 CFR 1910.96 (OSHA) AND 10 CFR Parts 20 & 40 (NRC) should be met.
- (3) Limits as nuisance particulate.

III. PHYSICAL PROPERTIES

Not applicable to intact lamp.

IV. FIRE & EXPLOSION HAZARDS

Flammability: Non-combustible.

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

V. HEALTH HAZARDS

A. OPERATING LAMPS

Consult the OSRAM SYLVANIA Product Catalog or relevant technical data sheets for complete warnings, operating and installation guides for specific lamp types.

WARNING:

- **This XBO lamp contains high pressure at room temperature and may unexpectedly shatter. Never handle lamp with out safety shield installed and appropriate PPE.**
- **This XBO lamp operates at super high pressure and at high temperature and may unexpectedly shatter.**
- **This XBO lamp generates ultraviolet radition which may cause skin and eye irritation with exposure.**
- **This XBO lamp must be operated only in suitably designed enclosed fixtures which prevent direct observation of the arc and will prevent lamp fragments from exiting, in the unlikely event of a lamp rupture.**
- **To avoid risk of lamp rupture, lamps must be operated with compatible ballast and fixture only.**

B. LAMP MATERIALS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or NIOSH Pocket Guide to Chemical Hazards lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Quartz, fused – Fibrosis of the lungs causing shortness of breath and coughinh has been associated with silica exposure.

Tungsten – Inhalation of dust may cause mild irritation of nose and throat. Contact may cause mechanical irritation of skin and eyes.

Molybdenum – Oxides have caused irritatin to the eyes, nose, and throat; weight loss and digestive disturbances in experimental animals.

Thorium Dioxide(as Tungsten Thoria) – Tungsten thoria alloy solids do not constitute and important health hazard. Exposure is related mainly to any irritatin fromt dust created. Thoriated solids do not constitute an important radiological health hazard. However, radiological health hazards may exist if the material is present in a form that may be inhaled or injected..

Nickel – Skin contact may cause an allergic rash. Inhaled dust of nickel and its compounds have been reported to cause cancer of the lungs and sinuses. Nickel itself is not very toxic if ingested, but its soluble salts are quite toxic and , if ingested, may cause giddiness and nausea.

EMERGENCY AND FIRST AID PROCEDURES

Quartz Cuts: Perform normal first aid procedures. Seek medical attention as required.

Inhalation: If discomfort, irritation or symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.

Ingestion: Seek medical attention.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention if irritation occurs.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHER):

Nickel was identified as a known or suspected carcinogen by NTP and/or IARC.

VI. REACTIVITY DATA

Stability: Stable

Conditions to avoid: None for intact lamps.

Incompatibility (materials to avoid): None for intact lamps.

Hazardous Decomposition Products (including combustion products): None for intact lamps.

Hazardous Polymerization Products: Will not occur.

VII. PROCEDURES FOR DISPOSAL OF LAMPS

OSRAM SYLVANIA recommends recycling of spent lamps. For a list of lamp recyclers and to obtain state regulatory disposal information, log onto www.lamprecycle.org.

If lamps are broken, ventilate area where breakage occurred. Clean-up with a vacuum cleaner or other suitable means that avoids dust generation. Take usual precautions for collection of broken quartz. Place materials in closed containers to avoid generating dust.

It is the responsibility of the waste generator to ensure proper classification and disposal of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations.

VIII. SPECIAL HANDLING INFORMATION - FOR BROKEN LAMPS

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Protective Clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Hygienic Practices: After handling broken lamps, wash thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

Although OSRAM SYLVANIA Products Inc. attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

Issue Date: May 25, 2011 rev D

Supersedes: April 08, 2011

SAFETY DATA SHEET

Metal Halide Lamps



SYLVANIA brand Metal Halide Lamps, manufactured by LEDVANCE, LLC, are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by LEDVANCE, LLC as a courtesy to its customers.

I. IDENTIFICATION

Trade Name (as labeled): **SYLVANIA Metalarc® and Metalarc Pro-Tech® Lamps, SYLVANIA Metalarc® POWERBALL®, and SYLVANIA ceramic metal halide lamps for general lighting purposes**

This data sheet covers the following general lighting metal halide lamp types:
Ceramic metal halide lamps and quartz medium-based and mogul-based lamps.

Manufacturer: OSRAM de Mexico S.A. de C.V.
950 Joule Street, Industrial Park
A.J. Bermudes, C.P. 32470
Cd. Juarez, Chihuahua, Mexico

LEDVANCE, LLC
435 E. Washington Street
Winchester, KY 40391-2298

Emergency Contact: EH&S Specialist 978-570-3000

II. HAZARD IDENTIFICATION



Warning!

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.

Warning! Rupture risks: Metal Halide lamps can be constructed of an outer glass bulb with an internal arc-tube. Metal Halide arc-tubes operate at high pressure and at very high temperatures and can unexpectedly rupture due to internal causes or external factors such as a ballast failure or misapplication. An arc-tube rupture can burst and shatter the outer glass bulb resulting in the discharge of glass fragments and extremely hot particles. In the event of such rupture, **there is a risk of personal injury, property damage, burns and fire.**

To reduce these risks:

- Only operate with compatible ballast and fixture. (See catalog for specific information.)
- Only operate lamp in designated operating positions. (See catalog for illustration.)
- Never expose operating lamp to moisture (such as rain, sleet or snow).
- Replace lamp if outer glass bulb is scratched, cracked or damaged in any way.
- Electrically insulate any metal support in contact with the outer glass bulb to avoid glass decomposition.
- Replace lamp at or before the end of rated life. (See catalog for rated life.)

For applications where an additional measure of safety is desired, lamps using an internal shield designed to contain an arc-tube rupture are available.

Warning! Electrical shock and burn hazard: Do not remove or insert lamp while power is on. If outer glass bulb is broken, shut off power immediately and remove lamp after it has cooled.

Warning! Ultraviolet radiation exposure: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. This product conforms to the following federal regulations: U.S.A.: 21 CFR 1040.30 and CANADA: SOR/80-381.

Immediately shut power off and replace lamp. If the outer jacket is broken and the lamp continues to operate, ultraviolet radiation may be emitted which may cause skin and eye irritation with prolonged exposure.

If irritation persists: get medical attention.

Do not handle until all safety precautions have been read and understood. Care must be taken to read and follow the directions and warnings accompanying the specific product to avoid personal injury and/or property damage.

Storage: Store in well-ventilated place.

Consult the SYLVANIA product catalog or relevant technical data sheets for complete warnings, operating and installation guides for specific lamp types.

III. COMPOSITION – INFORMATION ON INGREDIENTS

There are no known health hazards from exposure to lamps that are intact.

Materials listed on this data sheet are contained in varying percentages in this product. Exact percentages are proprietary and will not be disclosed other than as required in accordance with the regulations. If a lamp is broken, some of the following materials may be released:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% by wt.</u>
Quartz, fused	60676-86-0	0-30
(1, 2) Mercury	7439-97-6	<0.1
Aluminum Oxide	1344-28-1	0-<0.03
Thallium Iodide	7790-30-9	<0.002
Glass (Borosilicate)	---	50-86
Barium Peroxide	1304-29-6	0-<0.6
Yttrium Vanadate	13566-12-6	0-<0.5

(1) These chemicals are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

(2) The mercury in this product is a substance known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or NIOSH Pocket Guide to Chemical Hazards lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Glass - Glass dust is considered to be physiologically inert and as such has an OSHA exposure limit of 15 mg/M3 for total dust and 5 mg/M3 for respirable dust. The ACGIH TLVs for particulates not otherwise classified are 10 mg/M3 for total dust and 3 mg/M3 for respirable dust.

Quartz, Fused - Fibrosis of the lungs causing shortness of breath and coughing has been associated with silica exposure.

Mercury - Exposure to high concentrations of vapors for brief periods can cause acute symptoms such as pneumonitis, chest pains, shortness of breath, coughing, gingivitis, salivation and possibly stomatitis. May cause redness and irritation as a result of contact with skin and/or eyes.

Barium Peroxide - May be fatal if swallowed. Harmful dust. Avoid skin and eye contact.

Yttrium Vanadate - Inhalation of vanadium compounds can cause irritation of the nose, throat and respiratory tract. Eye contact and prolonged, repeated skin contact may also cause irritation. Studies of workers exposed to this material showed no evidence of chronic or systemic effects.

Aluminum Oxide (Alumina) - Alumina is a non-toxic material which is very low in free silica content. Sharp edged particles can irritate the eyes, perhaps the skin, and definitely the mucous membranes of the respiratory tract.

All other components of this product do not pose a significant risk of respiratory and/or physical effects.

IV. EMERGENCY AND FIRST AID PROCEDURES:

Glass Cuts: Perform normal first aid procedures. Seek medical attention as required.

Inhalation: If discomfort or irritation to the nose and throat develop, remove from exposure and seek medical attention as needed. If breathing has stopped, perform artificial respiration; keep affected person warm and at rest; get medical attention as soon as possible.

Ingestion: In the unlikely event of ingesting a large quantity of material, seek medical attention immediately.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention as needed.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

V. FIRE-FIGHTING MEASURES:

Flammability: Non-combustible

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

VI. ACCIDENTAL RELEASE MEASURES:

ONLY APPLICABLE FOR BROKEN LAMPS

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Protective clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Hygienic practices: After handling broken lamps, wash hands and face thoroughly before eating, drinking, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

VII. SPECIAL HANDLING INFORMATION - FOR BROKEN LAMPS

ONLY APPLICABLE FOR BROKEN LAMPS

BROKEN ARC-TUBE: Take care in handling and disposing of this lamp. **If arc-tube is broken, avoid skin contact with any of the contents and fragments.**

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken. To avoid exposure to ultraviolet radiation, use only in enclosed equipment designed for this lamp type.

Protective Clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Hygienic Practices: After handling broken lamps, wash thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

Storage Instructions: Store in well-ventilated place.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Threshold Value Limits:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Exposure Limits in Air (mg/cubic m)</u>	
		<u>ACGIH (TLV)</u>	<u>OSHA (PEL)</u>

Quartz, fused	60676-86-0	0.1 Resp Dust	0.1
(1, 2) Mercury	7439-97-6	0.025	0.1 Ceiling
Aluminum Oxide	1344-28-1	10.0 ⁽³⁾	15.0 ⁽³⁾
Thallium Iodide	7790-30-9	0.1 Skin	<10.1
Glass (Borosilicate)	---	10.0 ⁽³⁾	15.0 ⁽³⁾
Barium Peroxide	1304-29-6	0.5	---
Yttrium Vanadate	13566-12-6	1.0	1.0

(1) These chemicals are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

(2) The mercury in this product is a substance known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]

(3) Limits as nuisance particulate.

Personal Protective Equipment: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Skin Protection: After handling broken lamps, wash hands and face thoroughly before eating, drinking, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

VIV. PHYSICAL AND CHEMICAL PROPERTIES

NOT APPLICABLE FOR LAMPS

X. STABILITY AND REACTIVITY

NOT APPLICABLE FOR LAMPS

XI. TOXICOLOGICAL INFORMATION

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.

XII. ECOLOGICAL INFORMATION

XIII. DISPOSAL CONSIDERATIONS

LEDVANCE, LLC recommends that all mercury-containing lamps be recycled. For a list of lamp recyclers and to obtain state regulatory disposal information, call 1-866-666-6850 or log onto www.lamprecycle.org.

If lamps are broken, ventilate area where breakage occurred. Clean-up with mercury vacuum cleaner or other suitable means that avoids dust and mercury vapor generation. Take usual precautions for collection of broken glass. Place materials in closed containers to avoid generating dust and mercury vapor.

It is the responsibility of the waste generator to ensure proper classification and disposal of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations.

Lamps that pass the EPA's TCLP test are considered non-hazardous waste in most states. Always review your local and state regulations which can vary. Based upon the NEMA* Standard LL 3 (Procedures for High Intensity Discharge Lamp Sample Preparation and the TCLP) testing protocol, ECOLOGIC® lamps, marked "ECO," pass the TCLP test.

*NEMA (National Electrical Manufacturers Association) standard may be obtained from NEMA, 1300 North 17th Street, Suite 900, Arlington, VA 22209.

XVI. TRANSPORTATION INFORMATION

Shipments of these lamps, if levels of contained hazmat materials reach defined thresholds, will be subject to Dangerous Goods regulations for ground, air or sea shipments. Shippers are required to have DOT 49CFR training for ground shipments, IATA for air and IMDG training for sea shipments.

XVII. REGULATORY INFORMATION

Although LEDVANCE, LLC attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

Issue Date: October 1, 2016

In case of questions please call: EH&S Specialist 978-570-3000

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PRODUCT SAFETY DATA SHEET
PSDS No. 2.1
CERAMIC METAL HALIDE ARC TUBES



Ceramic Metal Halide Arc Tubes, manufactured by OSRAM SYLVANIA Inc., are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by OSRAM SYLVANIA as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Trade Name (as labeled): **Sylvania Metalarc® POWERBALL®, Ceramic Arc Tubes**
(Ceramic Metal Halide Arc Tubes for General Lighting)

Manufacturer: OSRAM de Mexico S.A. de C.V.
950 Joule Street, Industrial Park
A.J. Bermudes, C.P. 32470
Cd. Juarez, Chihuahua, Mexico

II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO ARC TUBES THAT ARE INTACT.

If a arc tube is broken, the following materials may be released:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% by wt.</u>	<u>Exposure Limits in Air (mg/cubic m)</u>	
			<u>ACGIH (TLV)</u>	<u>OSHA (PEL)</u>
(1, 2) Mercury	7439-97-6	<0.05	0.025	0.1 Ceiling
Aluminum Oxide	1344-28-1	0.0005-<0.005	10 (3)	15 (3)
Thallium Iodide	7790-30-9	<0.002	0.1 Skin	<10.1

(1) These chemicals are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
(2) The mercury and lead in this product are substances known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]
(3) Limits as nuisance particulate.

III. PHYSICAL PROPERTIES

Not applicable to intact arc tube.

IV. FIRE & EXPLOSION HAZARDS

Flammability: Non-combustible.

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken arc tubes during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken arc tubes.

V. HEALTH HAZARDS

ARC TUBE MATERIALS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO ARC TUBES THAT ARE INTACT. No adverse effects are expected from occasional exposure to broken arc tubes. As a matter of good practice, avoid prolonged or frequent exposure to broken arc tubes unless there is adequate ventilation. The major hazard from broken arc tubes is the possibility of cuts.

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or NIOSH Pocket Guide to Chemical Hazards lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Mercury - Exposure to high concentrations of vapors for brief periods can cause acute symptoms such as pneumonitis, chest pains, shortness of breath, coughing, gingivitis, salivation and possibly stomatitis. May cause redness and irritation as a result of contact with skin and/or eyes.

Aluminum Oxide (Alumina) - Alumina is a non-toxic material which is very low in free-silica content. Sharp-edged particles can irritate the eyes, perhaps the skin, and definitely the mucous membranes of the respiratory tract.

EMERGENCY AND FIRST AID PROCEDURES

Inhalation: If discomfort, irritation or symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.

Ingestion: Seek medical attention.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention if irritation occurs.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHER): None

VI. REACTIVITY DATA

Stability: Stable

Conditions to avoid: None for intact arc tubes.

Incompatibility (materials to avoid): None for intact arc tubes.

Hazardous Decomposition Products (including combustion products): None for intact arc tubes.

Hazardous Polymerization Products: Will not occur.

VII. PROCEDURES FOR DISPOSAL OF ARC TUBES

OSRAM SYLVANIA recommends that all mercury-containing arc tubes be recycled. For a list of arc tube recyclers and to obtain state regulatory disposal information, call 1-866-666-6850 or log onto www.arc tuberecycle.org.

If arc tubes are broken, ventilate area where breakage occurred. Clean-up with mercury vacuum cleaner or other suitable means that avoids dust and mercury vapor generation. Place materials in closed containers to avoid generating dust and mercury vapor.

It is the responsibility of the waste generator to ensure proper classification and disposal of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations.

VIII. SPECIAL HANDLING INFORMATION - FOR BROKEN ARC TUBES

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if arc tubes are being broken. In the event an outer jacket is broken, the arc tube should be shut off immediately and replaced to avoid exposure to ultraviolet radiation.

Protective Clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken arc tubes.

Hygienic Practices: After handling broken arc tubes, wash thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

Although OSRAM SYLVANIA Products Inc. attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

Issue Date: 09/21/11 Revision A

Supersedes: NEW

In case of questions, please call:OSRAM SYLVANIA Inc.
Product Safety and Compliance Manager
(978) 750-2581

PRODUCT SAFETY DATA SHEET

LIGHT EMITTING DIODE (LED) LAMPS



Sylvania brand Light Emitting Diode Lamps (LED), manufactured by SYLVANIA/OSRAM SYLVANIA, are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles."ⁱ The following information is provided by OSRAM SYLVANIA as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

SYLVANIA LED Lamps:

This MSDS applies only to the following LEDr lamps: A-shape LEDr

Osram Sylvania Inc.
100 Endicott Street
Danvers, MA 01923
PH: (978) 777-1900
www.Sylvania.com

II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. No adverse effects are expected from occasional exposure to broken lamps. The major hazard from broken lamps is the possibility of sustaining glass cuts.

Lamp Assembly

A-line SYLVANIA LEDr lamps do not contain glass. The lamp bases are generally nickel-plated brass. None of these materials would present a hazard even in the event of breakage of the lamp.

LED

The LED's composition consists of metals, phosphor, plastics and InGaN (Indium Gallium Nitride) semiconductor chip. Due to their insolubility and inertness, these materials do not present a significant hazard. Replacement Lamps use LEDs that emit white light. The LED's composition consists of metals, phosphor, plastics and InGaN (Indium Gallium Nitride) semiconductor chip. Due to their insolubility and inertness, these materials do not present a significant hazard.

Electronic LED Driver

The electronic LED driver is built into the lamp housing. The driver consists of parts that are essentially similar, but not identical, to those used throughout the electronics industry for other common consumer electronic equipment.

Plastic Material

The plastic housing is typically made of PBT (Polybutylene-terephthalate) or PET (Polyethylene- terephthalate) fire retarded plastic with a bromine-containing polymer and antimony oxide. The plastic housing is glass fiber filled. This product consists primarily of high molecular weight polymers that are not hazardous.

III. HEALTH CONCERNS

There are no known health hazards from exposure to lamps that are intact. No adverse effects are expected from occasional exposure to broken lamps. If the lamp is broken and the LEDs are exposed, do not look directly into the LEDs. As a matter of good practice, avoid prolong or frequent exposure to broken lamps. The major hazard from broken lamps is the possibility of sustaining cuts from the pieces and eye injury if you look directly into exposed LEDs when emitting light.

EMERGENCY AND FIRST AID PROCEDURES:

Cuts: Perform normal first aid procedures. Seek medical attention as required.

UV

The Ultraviolet energy emitted by LED lamps complies with the Photobiological Safety of Lamps IEC 62471.

IV. DISPOSAL CONCERNS

LED Lamp Disposal:

Dispose in accordance with local regulations; recycling is recommended for large quantity disposal.

RoHS:

All Sylvania LEDr lamps listed above meet the EC directive Restriction of Hazardous Substances (RoHS II) Directive 2011/65/EU. They do not contain any mercury or lead.

REACH:

Safety Datasheets are required by article 33 of REACH (Registration, Evaluation, Authorization and Restriction of Chemicals). Safety Datasheets are similar to OSHA Material/Product Safety Data Sheets and are meant to instruct the end-user (customer) on safe handling of the product, if there are any SVHC's (Substances of Very High Concern). For lamps, if any SVHC exists, the amount will be small and encapsulated in the component. Exposure to the SVHC would require grinding the component up.

Osram Sylvania A-line LED lamps contain no SVHC as of 11/20/13 when the list was last updated. . See <http://echa.europa.eu/web/guest/candidate-list-table>

Although OSRAM SYLVANIA Inc. attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

Issue Date: April 10, 2013 Rev. A

Revised November 20, 2013 Rev. B

In case of questions, please call:

Katherine Hassan, Esq.

OSRAM SYLVANIA Inc.

Product Safety and Compliance Specialist

978-750-2581

ⁱ “Article means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, *e.g.*, minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees.” 29 CFR 1910 accessed March, 2013: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10099

PRODUCT SAFETY DATA SHEET
PSDS No. 1.4.1
INCANDESCENT LAMPS
WITH LEAD-FREE SOLDER



Sylvania brand Incandescent Lamps, manufactured by OSRAM SYLVANIA, are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by OSRAM SYLVANIA as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Trade Name (as labeled): **Sylvania Incandescent "White", "Daylight", Frosted, or Clear Lamps with lead-free solder.**

This data sheet covers all of the following types unless otherwise indicated:
A19 (≤ 135 W), B10 (Made in U.S.A.), G25, BR, ER

Manufacturer: OSRAM SYLVANIA
835 Washington Avenue
St. Marys, PA 15857
(814) 834-1800

II. HAZARDOUS INGREDIENTS

Materials listed on this data sheet are contained in varying percentages in this product. Exact percentages are proprietary and will not be disclosed other than as required in accordance with the regulations.

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.

If a lamp is broken, some of the following materials may be released:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Hazard</u>	<u>Exposure Limits in Air (mg/cubic m)</u>	
			<u>ACGIH (TLV)</u>	<u>OSHA (PEL)</u>
Glass (Soda Lime)	---	Respiratory Irritant	10.0 ⁽²⁾	15.0 ⁽²⁾
Solder (Sb/Sn)				
Antimony (Sb)	7440-36-0	Toxic	0.5	0.5
Tin (Sn)	7440-31-5	Respiratory Irritant	2.0	2.0
(1,3) Lead Glass (as Pb)	7439-92-1	Toxic	0.05	0.05
Aluminum (as dust)	7429-90-5	Respiratory Irritant	10.0	10.0
Copper (as dust)	7440-50-8	Respiratory Irritant	1.0	1.0
Phenolic Resin	---	Physical Irritant	---	---

(1) This chemical is subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

(2) Limits as nuisance particulate.

(3) The lead in this product is one of the substances known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]

III. PHYSICAL PROPERTIES

Not applicable to intact lamp.

IV. FIRE & EXPLOSION HAZARDS

Flammability: Non-combustible

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

V. HEALTH HAZARD

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or NIOSH Pocket Guide to Chemical Hazards lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Lead - Ingestion and inhalation of lead dust or fume must be avoided. Lead dust or fumes may cause irritation of the eyes and respiratory tract. Excessive lead absorption can be toxic and may include symptoms such as anemia, weakness, abdominal pain, and kidney disease. However, the chemical inertness and insolubility of this material is expected to reduce the potential for systemic lead toxicity.

All other components of this product do not pose a significant risk of respiratory and/or physical effects.

EMERGENCY AND FIRST-AID PROCEDURES:

Glass Cuts: Perform normal first aid procedures. Seek medical attention as required.

Inhalation: If discomfort, irritation or symptoms of pulmonary involvement develop, remove from exposure and seek medical attention as needed.

Ingestion: In the unlikely event of ingesting a large quantity of material, seek medical attention immediately.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention as needed.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHER): None

VI. REACTIVITY DATA

Stability: Stable

Conditions to avoid: None for intact lamps.

Incompatibility (materials to avoid): None for intact lamps.

Hazardous decomposition products (including combustion products): None for intact lamps.

Hazardous polymerization products: Will not occur.

VII. PROCEDURES FOR DISPOSAL OF LAMPS

If lamps are broken, ventilate area where breakage occurred. Clean-up by vacuuming or other method that avoids dust generation. Take usual precautions for collection of broken glass. Place materials in closed containers to avoid generating dust.

It is the responsibility of the waste generator to ensure proper classification and disposal of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations.

Lamps which pass the EPA's TCLP test are considered non-hazardous waste in most states. Always review your local and state regulations which can vary. Based upon the NEMA* Standard LL 4 (*Procedures for Incandescent Lamp Sample Preparation and the TCLP*) testing protocol, these lamps pass the TCLP test.

*NEMA (National Electrical Manufacturers Association) standard may be obtained from NEMA, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.

VIII. SPECIAL HANDLING INFORMATION - FOR BROKEN LAMPS

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Protective clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Hygienic practices: After handling broken lamps, wash hands and face thoroughly before eating, drinking, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

Although OSRAM SYLVANIA attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

Issue Date: August 16, 2012 Rev D

Supersedes: July 25, 2011 Rev C

In case of questions, please call:

OSRAM SYLVANIA
Environmental/Safety Engineer
(814) 834-1800

PRODUCT SAFETY DATA SHEET
PSDS No. 1.7
TUNGSTEN HALOGEN LAMPS



Sylvania brand Tungsten Halogen Lamps, manufactured by OSRAM/OSRAM SYLVANIA, are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by OSRAM SYLVANIA as a courtesy to its customers.

-----I. PRODUCT IDENTIFICATION

----- Trade Name (as labeled): Sylvania Halogen Lamps, Sylvania Capsylite® Halogen Lamps

This data sheet covers the following general lighting halogen lamp types:
MB, MC, MR, G, PAR14, PAR16, PAR20, PAR30, and PAR38 lamps.

Manufacturer: OSRAM SYLVANIA
435 East Washington Street
Winchester, KY 40391
(606) 745-3257

Manufacturer: OSRAM SYLVANIA
E.E.S., S.A. de C.V. Mexico (8283)
Juarez, MX

II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.
If a lamp is broken, some of the following materials may be released:

Chemical Name CAS Number % by wt. Exposure Limits in Air (mg/cubic m)
ACGIH (TLV) OSHA (PEL)

Hydrogen Bromide	10035-10-6	0-< 1.0	10.0	Ceiling	10.0
Tungsten	7440-33-7	0.05-1.0	---	---	---
(Insoluble compounds)	-----	5.0	---		
Molybdenum	7439-98-7	0.02-1.0	---	---	---
(Insoluble compounds)	-----	10	15		
Glass (Alkaline Earth Aluminosilicate)	-----	0-95	10 (1)	15 (1)	
Quartz, Fused	60676-86-0	0-95	0.1	Resp. Dust	0.1
Aluminum	7429-90-5	0-70	10.0	10.0	
Copper (as dust)	7440-50-8	0-<3.0	1.0	1.0	
Glass (Alkaline Earth Borosilicate)	-----	0-95	10.0 (1)	15.0 (1)	
Ceramic (Steatite or Porcelain)	-----	0-95	10.0 (1)	15.0 (1)	

(1) Limits as nuisance particulate.

III. PHYSICAL PROPERTIES

Not applicable to intact lamp.

IV. FIRE & EXPLOSION HAZARDS

Flammability: Non-combustible

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

V. HEALTH HAZARDS

A. OPERATING LAMPS

Consult the OSRAM SYLVANIA Product Catalog or relevant technical data sheets for complete warnings, operating and installation guides for specific lamp types.

WARNING:

- Burns:** All tungsten halogen lamps operate at higher temperatures than standard incandescent lamps; some as high as 1832°F, 1000°C. Therefore, caution must be used when replacing lamps. Allow enough time for lamp to cool before attempting replacement.
- Shattering:** Some tungsten halogen lamps are at high pressure at all times and may unexpectedly shatter. Care must be taken to read and follow the directions and warnings accompanying the specific product to avoid personal injury and/or property damage.
- UV Radiation:** Some tungsten halogen lamps produce UV (ultraviolet) radiation which can cause skin burns and/or eye injury if not properly shielded. Care must be taken to read and follow the directions and warnings accompanying the specific product to avoid personal injury.

B. LAMP MATERIALS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or NIOSH Pocket Guide to Chemical Hazards lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Hydrogen Bromide - Short-term exposure to hydrogen bromide may cause irritation of the eyes, nose, and throat. It will cause a burn when a solution is splashed onto skin or into eyes. Repeated or prolonged exposure to hydrogen bromide may cause irritation of the nose and throat with mucous production and indigestion.

Copper - Inhalation of fumes can cause "Metal Fume Fever" with symptoms of chills, fever, nausea, cough, dry throat, weakness, muscle aches, and a sweet metallic taste in the mouth. Contact may cause mechanical irritation of the skin and eyes. Ingestion may cause irritation to the stomach lining or intestines.

Aluminum – Aluminum is a non-toxic material which may cause irritation to the eyes skin and respiratory system.

Quartz, Fused - Fibrosis of the lungs causing shortness of breath and coughing has been associated with silica exposure.

Glass - Glass dust is considered to be physiologically inert and as such, has an OSHA exposure limit of 15 mg/cubic meter for total dust and 5 mg/cubic meter for respirable dust. The ACGIH TLVs for particulates not otherwise classified are 10 mg/cubic meter for total dust and 3 mg/cubic meter for respirable dust.

Tungsten - Inhalation of dust may cause mild irritation of nose and throat. Contact may cause mechanical irritation of skin and eyes.

Molybdenum - Oxides have caused irritation to the eyes, nose, and throat; weight loss and digestive disturbances in experimental animals.

EMERGENCY AND FIRST AID PROCEDURES:

Glass Cuts: Perform normal first aid procedures. Seek medical attention as required.

Inhalation: If discomfort or irritation to the nose and throat develop, remove from exposure and seek medical attention as needed. If breathing has stopped, perform artificial respiration; keep affected person warm and at rest; get medical attention as soon as possible.

Ingestion: In the unlikely event of ingesting a large quantity of material, seek medical attention immediately.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention as needed.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHER): None

VI.REACTIVITY DATA

Stability: Stable

Conditions to avoid: None for intact lamps.

Incompatibility (materials to avoid): None for intact lamps.

Hazardous decomposition products (including combustion products): None for intact lamps.

Hazardous polymerization products: Will not occur.

VII. PROCEDURES FOR DISPOSAL OF LAMPS

If lamps are broken, ventilate area where breakage occurred. Clean-up by vacuuming or other method that avoids dust generation. Take usual precautions for collection of broken glass. Place materials in closed containers to avoid generating dust.

It is the responsibility of the waste generator to ensure proper classification and disposal of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations.

Lamps which pass the EPA's TCLP test are considered non-hazardous waste in most states. Always review your local and state regulations which can vary. Based upon the NEMA* Standard LL 4 (*Procedures for Incandescent Lamp Sample Preparation and the TCLP*) testing protocol, these lamps pass the TCLP test.

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Respiratory protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Protective clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Hygienic practices: After handling broken lamps, wash thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

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Issue Date: October 3, 2013; Rev. E Supersedes: May 18, 2011

In case of questions, please call:

Product Safety Manager

(978) 750 2581