

TSE389-B

SAFETY DATA SHEET

1. Identification

Product identifier: TSE389-B

Other means of identification

Synonyms: Ketoxime Silicone Sealant

Recommended use and restriction on use

Recommended use: Silicone Elastomer (A)

Restrictions on use: Not known.

Manufacturer/Importer/Distributor Information : Momentive Performance Materials - Japan LLC
133 Nishishin-machi, Ohta-shi
Ohta-shi 10 3738505

Contact person : commercial.services@momentive.com

Telephone : General information
+1-800-295-2392

Emergency telephone number
Supplier : CHEMREC
1-800-424-9300

2. Hazard(s) identification

Hazard Classification

Health Hazards

Serious Eye Damage/Eye Irritation	Category 2A
Skin sensitizer	Category 1
Toxic to reproduction	Category 1B
Specific Target Organ Toxicity - Repeated Exposure	Category 2 ¹

Target Organs

1. Heart

Unknown toxicity - Health

Acute toxicity, oral	0 %
Acute toxicity, dermal	0 %
Acute toxicity, inhalation, vapor	0.42 %

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Acute toxicity, inhalation, dust or mist	0 %
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Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: May cause an allergic skin reaction.
Causes serious eye irritation.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements

Prevention: Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Contaminated work clothing must not be allowed out of the workplace. 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 or mists.

Response: 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. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. If exposed or concerned: Get medical advice/attention. Specific treatment (see this label). Wash contaminated clothing before reuse.

Storage: Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

Substance(s) formed under the conditions of use: Mixture of polydimethylsiloxanes, fillers and cross-linkers.

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3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%) [*]	Notes
Silica, (1) Silica	7631-86-9	10 - <20%	# This substance has workplace exposure limit(s).
Oxime silane	Trade secret	5 - <10%	No data available.
butanone oxime vinylsilane	2224-33-1	0.1 - <1%	No data available.
Aminoethyl aminopropyl trimethoxy silane	1760-24-3	0.1 - <1%	No data available.
Carbon Black	1333-86-4	0.1 - <1%	# This substance has workplace exposure limit(s).
Tin and its compounds (22% as Tin)	Trade secret	0.1 - <0.3%	No data available.
Octamethylcyclotetrasiloxane	556-67-2	0.1 - <1%	No data available.

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Trade secret information: ** A specific chemical identity and/or percentage of composition has been withheld as a trade secret.

(1) The respirable particle(s) listed above are inextricably bound within the polymer matrix, and therefore does not present an inhalation hazard during normal use of this product. Tooling or machining of the cured product (sanding, cutting, milling) may release hazardous, respirable substances.

4. First-aid measures

Ingestion: Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

Inhalation: If inhaled, move victim to fresh air and seek medical attention.

Skin Contact: Wash with plenty of water/...

Eye contact: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Most important symptoms/effects, acute and delayed

Symptoms: None known.

Hazards: No data available.

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Indication of immediate medical attention and special treatment needed

Treatment: No data available.

5. Fire-fighting measures

General Fire Hazards: Use water spray to keep fire-exposed containers cool. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Use standard firefighting procedures and consider the hazards of other involved materials.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Extinguish with foam, carbon dioxide or dry powder.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: By heating and fire, irritating vapors/gases may be formed. In case of fire, carbon monoxide and carbon dioxide may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Take precautionary measures against static discharges. Keep away from sources of ignition - No smoking.

Special protective equipment for fire-fighters: Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Keep upwind.

Methods and material for containment and cleaning up: Put in an empty container for recovery after preventing spill by sand or sandbags, if the amount of spill is large. Put in an empty container for recovery after wiping or soaking up in an inert material, if the amount of spill is small.

Notification Procedures: Remove sources of ignition.

Environmental Precautions: Do not allow runoff to sewer, waterway or ground.

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7. Handling and storage

Precautions for safe handling: Wear appropriate personal protective equipment. Keep away from sources of ignition - No smoking. Avoid inhalation of vapors and spray mists. Use only with adequate ventilation.

Conditions for safe storage, including any incompatibilities: Store in a dark, cool place indoors, with container tightly closed.

8. Exposure controls/personal protection
Control Parameters
Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values	Source
Silica, (1) Silica	REL	6 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	TWA	6 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	20 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
	TWA	0.8 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Carbon Black - Inhalable fraction.	TWA	3 mg/m3	US. ACGIH Threshold Limit Values (03 2015)
Carbon Black	REL	0.1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	3.5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	3.5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	3.5 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

This product contains one or more substances with an occupational exposure limit. However, the respirable particle(s) of this/these substance(s) are inextricably bound within the polymer matrix. Therefore, we do not expect an exposure to this/these substance(s) during normal use of this product. Tooling or machining of the cured product (sanding, cutting, milling) may release hazardous, respirable substances.

Appropriate Engineering Controls Use only in well-ventilated areas.

Individual protection measures, such as personal protective equipment

General information: Wear suitable gloves and eye/face protection.

Eye/face protection: Safety glasses with side shields

Skin Protection

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Hand Protection:	Rubber or plastics gloves
Other:	Wear rubber boots. Chemical resistant clothing
Respiratory Protection:	Gas mask with organic vapor canister and dust and mist filter. If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Supplied air respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (see 29CFR 1910.134).
Hygiene measures:	Avoid contact with eyes, skin, and clothing. Wash hands after handling. When using do not eat, drink or smoke.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Black
Odor:	Faint
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	Not applied
Initial boiling point and boiling range:	Not applied
Flash Point:	178 °C
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.

Heat of combustion:

Vapor pressure: Not applied

Vapor density: No data available.

Density: ca. 1.04 g/cm³

Relative density: 1.04

Solubility(ies)

Solubility in water: Insoluble

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Solubility (other):	Insoluble
Partition coefficient (n-octanol/water) Log Pow:	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No decomposition if stored and applied as directed.
SADT:	No data available.
Viscosity, dynamic:	No data available.
Viscosity, kinematic:	> 7 mm ² /s (40 °C)
VOC:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Stable
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	No data available.
Incompatible Materials:	The catalysis of strong acids or bases cause polymerization or decomposition.
Hazardous Decomposition Products:	Reacts with water/moisture liberating Methylethylketoxime (MEKO) = 2-Butanone-oxime. Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.

11. Toxicological information

General information:	Our Experience shows that our Silicone Elastomer products can be handled without risk to health if used properly and if the usual precautions for industrial hygiene are observed.
Information on likely routes of exposure	
Ingestion:	No data available.
Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.
Symptoms related to the physical, chemical and toxicological characteristics	
Ingestion:	No data available.

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Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: No data available. Not classified for acute toxicity based on available data.

Specified substance(s):

Silica, (1) Silica LD 50 (Rat): > 15,000 mg/kg

Aminoethyl aminopropyl trimethoxy silane LD 50 (Rat): 2,995 mg/kg

Octamethylcyclotetrasiloxane LD 50 (Rat): 4,800 mg/kg
LD 50 (Mouse): 1,700 mg/kg

Dermal

Product: No data available. Not classified for acute toxicity based on available data.

Specified substance(s):

Aminoethyl aminopropyl trimethoxy silane LD 50 (Rabbit): > 2,000 mg/kg

Octamethylcyclotetrasiloxane LD 50 (Rat): 2,400 mg/kg

Inhalation

Product: Not classified for acute toxicity based on available data.

Specified substance(s):

Octamethylcyclotetrasiloxane LC50 (Rat): 12.1 mg/l
LC50 (Rat): 36 mg/l

Repeated dose toxicity

Product: No data available.

Specified substance(s):

Aminoethyl aminopropyl trimethoxy silane NOAEL (Rat, Oral, 28 d): >= 500 mg/kg

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Skin Corrosion/Irritation

Product: No data available.

Serious Eye Damage/Eye Irritation

Product: No data available.

Respiratory or Skin Sensitization

Product: No data available.

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Carbon Black Overall evaluation: 2B. Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane Ames-Test (OECD-Guideline 471 (Genetic Toxicology: *Salmonella typhimurium*, Reverse Mutation Assay)): negative (not mutagenic)
Mouse Lymphoma Assay (OECD Guidline 476): negative (not mutagenic)

In vivo

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane Chromosomal aberration (OECD-Guideline 474 (Genetic Toxicology: Micronucleus Test)) Inhalation (Rat, male and female): negative

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

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Product: No data available.

Target Organs

Specific Target Organ Toxicity - Repeated Exposure: Heart

Aspiration Hazard

Product: No data available.

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Other effects:

Nasal epithelial tissue atrophy occurred at all dose levels tested, but was reversible at lower doses. **SUPPLIER RECOMMENDED WORKPLACE GUIDELINE:** 3 ppm 8-hr TWA, Short term exposure limit (STEL) <10 ppm. **Toxicity of methyl ethyl ketoxime (MEKO)** liberated when the material is in touch with water or moisture in the air, or the material is curing. **SKIN CONTACT:** May cause mild skin irritation. **EYE CONTACT:** Causes severe eye irritation may damage tissue. **ACUTE ORAL TOXICITY:** LD50 = 4ml/kg (rat). **ACUTE INHALATION:** 4-hr LC50 = > 4.8mg/l (rat). **INHALATION TOXICITY:** Narcotic(central nervous system)effects in high concentrations. Effects were reversible when exposure was ended. Prolonged overexposure causes adverse effects on the blood. **SKIN SENSITIVITY:** Positive (guinea pig). No allergic reaction to humans. **CARCINOGENICITY:** A lifetime (about two years) inhalation study in male and female mice and rats revealed that liver tumors were observed in male mice and rats at a high exposure level of 375 ppm. **OTHER LONG-TERM EXPOSURE TESTS:** Atrophy of nasal epithelium cells was observed in both mice and rats at all concentrations. The effect appeared reversible at lower concentrations. **PERMISSIBLE CONCENTRATION:** TWA 3 ppm (supplier's recommended value), Keep well ventilated (STEL 10 ppm or less). The WEEL recommended value of AIHA is TWA 10 ppm.

Octamethylcyclotetrasiloxane (D4) Ingestion: Rodents given large doses via oral gavage of Octamethylcyclotetrasiloxane (1600mg/kg/day, 14 days), developed increased liver weights relative to unexposed control animals due to hepatocellular hyperplasia (increased number of liver cells which appear normal) as well as hypertrophy (increased cell size). Inhalation: In inhalation studies, laboratory rodents exposed to Octamethylcyclotetrasiloxane (300 ppm five days/week, 90 days) developed increased liver weights in female animals relative to unexposed control animals. When the exposure was stopped, liver weights returned to normal. Microscopic examination of the liver cells did not show any evidence of pathology. This response in rats, which does not affect the animal's health, is well-documented and widely recognized. It is related to an increase of liver enzymes that metabolize and eliminate a material from the body. The increased liver weight reverses even while the D4 exposure continues. The finding is not adverse, but is considered a natural adaptive change in rats, and does not represent a hazard to humans. Inhalation studies utilizing laboratory rabbits and guinea pigs showed no effects on liver weights. Inhalation exposures typical of industrial usage (5-10 ppm) showed no toxic effects in rodents. Range finding reproductive studies were conducted (whole body inhalation, 70 days prior to mating, through mating, gestation and lactation), with D4. Rats were exposed to 70 and 700 ppm. In the 700 ppm group, there was a statistically significant reduction in mean litter size and in implantation sites. No D4 related clinical signs were observed in the pups and no exposure related pathological findings were found. A two-year, combined chronic/carcinogenicity study, during which rats were exposed to D4 by inhalation, data showed a statistically significant increase in a benign uterine tumor in female rats exposed at the highest level--a level much higher than the low levels that consumers or workers may encounter. An expert panel of independent scientists who have reviewed the results of this research concur that the finding seen in the two-year study occurred through a biological pathway^{1/19} that is specific to the rat and is not relevant to humans. Therefore, this observed effect does not indicate a potential health hazard to humans. In developmental toxicity studies, rats and rabbits were exposed to D4 at concentrations up to 700 ppm and 500 ppm, respectively. No teratogenic effects (birth defects) were observed in either study.

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Ingestion: No data available.

Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Oral
No data available.

Dermal
No data available.

Inhalation
No data available.

Repeated dose toxicity
No data available.

Skin Corrosion/Irritation
No data available.

Serious Eye Damage/Eye Irritation
No data available.

Respiratory or Skin Sensitization
No data available.

Carcinogenicity
No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No data available.

US. National Toxicology Program (NTP) Report on Carcinogens:

No data available.

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US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No data available.

Germ Cell Mutagenicity

In vitro

No data available.

Germ Cell Mutagenicity

In vivo

No data available.

Reproductive toxicity

No data available.

Specific Target Organ Toxicity - Single Exposure

No data available.

Specific Target Organ Toxicity - Single Exposure

No data available.

Target Organs

Aspiration Hazard

No data available.

Other effects

No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product:

No data available.

Specified substance(s):

Silica, (1) Silica

LC0 (Brachydanio rerio, 96 h): 5,000 mg/l

Aminoethyl aminopropyl trimethoxy silane

LC50 (Lepomis macrochirus): > 100 mg/l

Aquatic Invertebrates

Product:

No data available.

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Specified substance(s):

Aminoethyl aminopropyl trimethoxy silane EC50 (Daphnia magna, 48 h): 87.4 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Silica, (1) Silica LC0 (Brachydanio rerio, 4 d): 5,000 mg/l

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Specified substance(s):

Aminoethyl aminopropyl trimethoxy silane EC50 (Algae (Pseudokirchneriella subcapitata), 96 h): 8.8 mg/l
NOEC (Algae (Pseudokirchneriella subcapitata)): 3.1 mg/l

Persistence and Degradability

Biodegradation

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane 3.7 % (29 d, 310 Ready Biodegradability - CO₂ in Sealed Vessels (Headspace Test)) Not readily biodegradable.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Specified substance(s):

Octamethylcyclotetrasiloxane Fathead Minnow, Bioconcentration Factor (BCF): 12.40

Partition Coefficient n-octanol / water (log K_{ow})

Product: No data available.

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Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

Silica, (1) Silica	No data available.
Oxime silane	No data available.
butanone oxime vinylsilane	No data available.
Aminoethyl aminopropyl trimethoxy silane	No data available.
Carbon Black	No data available.
Tin and its compounds (22% as Tin)	No data available.
Octamethylcyclotetrasiloxane	No data available.

Other adverse effects: No data available.

13. Disposal considerations

Disposal instructions: Disposal should be made in accordance with federal, state and local regulations.

Contaminated Packaging: Dispose of as unused product.

14. Transport information

DOT

Not regulated.

IMDG

Not regulated.

IATA

Not regulated.

Special precautions for user:

This product is not regarded as dangerous goods according to the national and international regulations on the transport of dangerous goods.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

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CERCLA Hazardous Substance List (40 CFR 302.4)

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate (Acute) Health Hazards Delayed (Chronic) Health Hazard

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical

Chemical Identity Threshold Planning Quantity

Silica, (1) Silica	10000 lbs
Oxime silane	10000 lbs
butanone oxime	10000 lbs
vinylsilane	
Aminoethyl aminopropyl	10000 lbs
trimethoxy silane	
Carbon Black	10000 lbs
Tin and its compounds	10000 lbs
(22% as Tin)	
Octamethylcyclotetrasiloxa	10000 lbs
ne	

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity

Siloxanes and Silicones, di-Me hydroxyl terminated

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Silica, (1) Silica
Polydimethylsiloxane
Oxime silane
Siloxanes and Silicones, di-Me, polymers with Me silsesquioxanes,
hydroxy-terminated
butanone oxime vinylsilane
Carbon Black
Aminoethyl aminopropyl trimethoxy silane
Tin and its compounds (22% as Tin)
Octamethylcyclotetrasiloxane

US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity

Silica, (1) Silica

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

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Inventory Status:

Australia AICS:	y (positive listing)	Remarks: None.
EU EINECS List:	y (positive listing)	Remarks: None.
Japan (ENCS) List:	y (positive listing)	Remarks: None.
China Inventory of Existing Chemical Substances:	y (positive listing)	Remarks: None.
Korea Existing Chemicals Inv. (KECI):	y (positive listing)	Remarks: None.
Canada DSL Inventory List:	n (Negative listing)	Remarks: None.
Canada NDSL Inventory:	n (Negative listing)	Remarks: None.
Philippines PICCS:	y (positive listing)	Remarks: None.
US TSCA Inventory:	q (quantity restricted)	Remarks: Low Volume Exemption
Taiwan. Taiwan inventory (CSNN):	y (positive listing)	Remarks: None.

16. Other information, including date of preparation or last revision

HMIS Hazard ID

Health	*	2
Flammability		0
Physical Hazards		0
PERSONAL PROTECTION		

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

Issue Date: 01/05/2017

Revision Date: No data available.

Version #: 2.0

Further Information: "Wear eye, hand and respiratory protection when in handling."

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Disclaimer:

Notice to reader

Unless otherwise specified in section 1, Momentive products are intended for use in the manufacture and/or formulation of products and are not intended for direct consumer use. These products are not intended for long-lasting (> 30 days) implantation, injection or direct ingestion into the human body, nor for use in the manufacture of multiple use contraceptives.

"Wear eye, hand and respiratory protection when in handling."

Keep out of the reach of children.

Further Information

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.

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