

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations


Printing date: April 26, 2018

Revision: April 26, 2018

1 Identification

- **Product identifier**
- **Trade name:** Armor-Hard Part A
- **Other means of identification:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Epoxy binder
- **Restrictions on use:** For professional use only.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
METZGER/McGUIRE
Mailing Address:
PO Box 2217
Concord, NH 03302
Shipping Address:
807 Route 3-A
Bow, NH 03304
Phone: 603-224-6122
Toll Free: 800-223-6680
Email: info@metzgermcguire.com
- **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**

GHS07
- **Signal word:** Warning
- **Hazard statements:**
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
- **Precautionary statements:**
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P264 Wash thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.

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- (Cont'd. of page 1)
- P280 Wear protective gloves and eye protection.
 - P302+P352 If on skin: Wash with plenty of soap and water.
 - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 - P337+P313 If eye irritation persists: Get medical advice/attention.
 - P362+P364 Take off contaminated clothing and wash it before reuse.
 - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

· Components:

25068-38-6	4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317	60-90%
2461-15-6	[[[(2-ethylhexyl)oxy]methyl]oxirane ⚠ Skin Irrit. 2, H315; Skin Sens. 1A, H317	10-20%

· Additional information:

- For the wording of the listed Hazard Statements, refer to section 16.
- For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:**
Supply fresh air; consult doctor in case of complaints.
Provide oxygen treatment if affected person has difficulty breathing.
- **After skin contact:**
Immediately remove any clothing soiled by the product.
Immediately wash with water and soap and rinse thoroughly.
If skin irritation or rash occurs: Get medical advice/attention.
- **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed:**
Coughing
Dizziness
Breathing difficulty
Allergic reactions
Gastric or intestinal disorders when ingested.
Nausea in case of ingestion.

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Irritant to skin and mucous membranes.
Causes eye irritation.

· **Indication of any immediate medical attention and special treatment needed:**

Contains 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, [[(2-ethylhexyl)oxy]methyl]oxirane. May produce an allergic reaction.
Medical supervision for at least 48 hours.
Later observation for pneumonia and pulmonary edema.
Treat symptomatically.

5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:** Water fog / haze

· **For safety reasons unsuitable extinguishing agents:**

Water stream.
Water spray

· **Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

· **Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.
Wear fully protective suit.

· **Additional information:** Cool endangered containers with water fog.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Use respiratory protective device against the effects of fumes/dust/aerosol.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation.

· **Environmental precautions**

Do not allow to enter sewers/ surface or ground water.
Inform respective authorities in case of seepage into water course or sewage system.

· **Methods and material for containment and cleaning up**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Send for recovery or disposal in suitable receptacles.

· **Reference to other sections**

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling**

· **Precautions for safe handling:**

Use only in well ventilated areas.
Avoid splashes or spray in enclosed areas.

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· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**

· **Requirements to be met by storerooms and receptacles:**

Avoid storage near extreme heat, ignition sources or open flame.
Store in cool, dry conditions in well sealed receptacles.

· **Information about storage in one common storage facility:**

Store away from foodstuffs.
Store away from oxidizers, strong acids, strong bases.

· **Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· **Exposure controls**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid breathing mist, vapors, or spray.
Avoid contact with the eyes and skin.

· **Engineering controls:** No relevant information available.

· **Breathing equipment:**

Not required under normal conditions of use.
For spills, respiratory protection may be advisable.
Wear appropriate NIOSH respirator when ventilation is inadequate and occupational exposure limits are exceeded.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· **Eye protection:**



Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment**

No relevant information available.

· **Risk management measures** No relevant information available.

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9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance:

- **Form:** Liquid
- **Color:** Colorless
- **Odor:** Sweet
- **Odor threshold:** Not determined.

- **pH-value:** Not determined.
- **Melting point/Melting range:** Not determined.
- **Boiling point/Boiling range:** >200 °C (>392 °F)

- **Flash point:** >150 °C (>302 °F) (Open Cup)

- **Flammability (solid, gaseous):** Not applicable.

- **Auto-ignition temperature:** Not determined.

- **Decomposition temperature:** Not determined.

- **Danger of explosion:** Product does not present an explosion hazard.

Explosion limits

- **Lower:** Not determined.
- **Upper:** Not determined.
- **Oxidizing properties:** Not determined.

- **Vapor pressure:** Not determined.

Density:

- **Relative density at 20 °C (68 °F):** 1.12 g/cm³ (9.35 lbs/gal)
- **Vapor density:** Not determined.
- **Evaporation rate:** Not determined.

Solubility in / Miscibility with

- **Water:** Not miscible or difficult to mix.

- **Partition coefficient (n-octanol/water):** Not determined.

Viscosity

- **Dynamic at 20 °C (68 °F):** 900-1400 cps
- **Kinematic:** Not determined.

- **Other information** No relevant information available.

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions** Toxic fumes may be released if heated above the decomposition point. Exothermic polymerization.

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- Reacts with catalysts, oxidizing agents and strong alkali.
- Reacts with strong acids.
- **Conditions to avoid** No relevant information available.
- **Incompatible materials** Oxidizers, strong bases, strong acids
- **Hazardous decomposition products** Carbon monoxide and carbon dioxide
Chlorine compounds

11 Toxicological information

Information on toxicological effects

- **Acute toxicity:** Based on available data, the classification criteria are not met.

LD/LC50 values that are relevant for classification:

25068-38-6 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane

Oral	LD50	>2000 mg/kg (rat, female)
Dermal	LD50	>2000 mg/kg (rat)

- **Primary irritant effect:**
- **On the skin:** Irritant to skin and mucous membranes.
- **On the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.

IARC (International Agency for Research on Cancer):

None of the ingredients are listed.

NTP (National Toxicology Program):

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration):

None of the ingredients are listed.

Probable route(s) of exposure:

- Ingestion.
- Inhalation.
- Eye contact.
- Skin contact.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity** Toxic to aquatic life with long lasting effects.

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25068-38-6 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane

EC50	2.7 mg/kg (daphnia) (48hr)
LC50	1.2 mg/l (Oncorhynchus mykiss) (96hr)
	2.4 mg/l (zebra fish) (96hr)

- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Can be disposed of with household garbage after solidification following consultation with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- **Uncleaned packagings**
- **Recommendation:**
Disposal must be made according to official regulations.
Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

14 Transport information

· UN-Number	
· DOT	Not regulated.
· ADR, IMDG, IATA	UN3082
· UN proper shipping name	
· DOT	Not regulated.
· ADR, IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane)

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· IATA	Environmentally hazardous substance, liquid, n.o.s. (4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane)
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Transport hazard class(es)

· DOT	
· Class	Not regulated.

ADR


· Class	9 (M6) Miscellaneous dangerous substances and articles
· Label	9

IMDG


· Class	9 Miscellaneous dangerous substances and articles
· Label	9

IATA


· Class	Not regulated.
· Label	9

Packing group

· DOT	Not regulated.
· ADR, IMDG, IATA	III

Environmental hazards

Product contains environmentally hazardous substances: 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane

Marine pollutant:


Yes

Special precautions for user

Warning: Miscellaneous dangerous substances and articles

· Danger code (Kemler):	90
· EMS Number:	F-A,S-F

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- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
- **Transport/Additional information:** Not regulated when carried in single or combination packaging containing a net quantity of 5 L or less for liquids or 5 kg or less for solids per the following:
DOT: 171.4(c)(2)
ADR: SP 375
IMDG: 2.10.2.7
IATA: special provision A197
- **DOT**
- **Remarks:** Transport labeling is not required for non-bulk single package shipments by motor vehicle, rail car or aircraft. Bulk packaging consists of a maximum capacity of greater than 450L (119 gallons) for a liquid and a maximum net mass greater than 400kg (882 pounds) for a solid.

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**
- **Section 302 (extremely hazardous substances):**
None of the ingredients are listed.
- **Section 355 (extremely hazardous substances):**
None of the ingredients are listed.
- **Section 313 (Specific toxic chemical listings):**
None of the ingredients are listed.
- **TSCA (Toxic Substances Control Act)**
All ingredients are listed.
- **Proposition 65 (California)**
- **Chemicals known to cause cancer:**
None of the ingredients are listed.
- **Chemicals known to cause developmental toxicity for females:**
None of the ingredients are listed.
- **Chemicals known to cause developmental toxicity for males:**
None of the ingredients are listed.
- **Chemicals known to cause developmental toxicity:**
None of the ingredients are listed.
- **EPA (Environmental Protection Agency):**

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- None of the ingredients are listed.
- **IARC (International Agency for Research on Cancer):**
None of the ingredients are listed.
- **Canadian Domestic Substances List (DSL):**
All ingredients are listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Date of preparation / last revision** April 26, 2018 / -
- **Abbreviations and acronyms:**
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bio-accumulable, Toxic
vPvB: very Persistent and very Bioaccumulative
OSHA: Occupational Safety & Health Administration
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1A: Skin sensitisation – Category 1A
- **Sources**
Website, European Chemicals Agency (echa.europa.eu)
Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)
Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.
Safety Data Sheets, Individual Manufacturers
- SDS Prepared by:
ChemTel Inc.
1305 North Florida Avenue
Tampa, Florida USA 33602-2902
Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
Website: www.chemtelinc.com

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1 Identification

- **Product identifier**
- **Trade name:** Armor-Hard Part B
- **Other means of identification:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Epoxy binder
- **Restrictions on use:** For professional use only.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
METZGER/McGUIRE
Mailing Address:
PO Box 2217
Concord, NH 03302
Shipping Address:
807 Route 3-A
Bow, NH 03304
Phone: 603-224-6122
Toll Free: 800-223-6680
Email: info@metzgermcguire.com
- **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
- Acute Tox. 4 H302 Harmful if swallowed.
- Acute Tox. 4 H312 Harmful in contact with skin.
- Skin Corr. 1B H314 Causes severe skin burns and eye damage.
- Eye Dam. 1 H318 Causes serious eye damage.
- Skin Sens. 1 H317 May cause an allergic skin reaction.
- Repr. 1A H360 May damage fertility or the unborn child.
- STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:**



GHS05 GHS07 GHS08

- **Signal word:** Danger

- **Hazard statements:**

 H302+H312 Harmful if swallowed or in contact with skin.
 H314 Causes severe skin burns and eye damage.

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- H317 May cause an allergic skin reaction.
- H360 May damage fertility or the unborn child.
- H335 May cause respiratory irritation.
- **Precautionary statements:**
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe mist/vapors/spray.
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P280 Wear protective gloves/protective clothing/eye protection.
- P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
- P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a poison center/doctor.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P363 Wash contaminated clothing before reuse.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

 · **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Components:**

111-40-0	2,2'-iminodiethylamine ⚠ Acute Tox. 2, H330 ⚠ Skin Corr. 1B, H314 ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317; STOT SE 3, H335	30-50%
80-05-7	bisphenol A ⚠ Repr. 1B, H360 ⚠ Eye Dam. 1, H318 ⚠ Skin Sens. 1, H317; STOT SE 3, H335	20-38%
112-24-3	Triethylenetetramine ⚠ Skin Corr. 1B, H314 ⚠ Acute Tox. 4, H312; Skin Sens. 1, H317	1-10%
100-51-6	benzyl alcohol ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Eye Irrit. 2A, H319	4-8%
90-72-2	2,4,6-tris(dimethylaminomethyl)phenol ⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318	1-3%

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Acute Tox. 4, H312; Skin Sens. 1B, H317

Additional information:

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.
For the wording of the listed Hazard Statements, refer to section 16.

4 First-aid measures

Description of first aid measures

After inhalation:

Supply fresh air; consult doctor in case of complaints.
Provide oxygen treatment if affected person has difficulty breathing.
In case of irregular breathing or respiratory arrest provide artificial respiration.

After skin contact:

Immediately remove any clothing soiled by the product.
Immediately wash with water and soap and rinse thoroughly.
If skin irritation or rash occurs: Get medical advice/attention.

After eye contact:

Remove contact lenses if worn, if possible.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.

Most important symptoms and effects, both acute and delayed:

Asthma attacks
Breathing difficulty
Coughing
Allergic reactions
Irritating to eyes, respiratory system and skin.
Gastric or intestinal disorders when ingested.
Nausea in case of ingestion.

Danger:

Danger of impaired breathing.
Harmful if swallowed or in contact with skin.
Suspected of damaging fertility or the unborn child.

Indication of any immediate medical attention and special treatment needed:

Contains 2,2'-iminodiethylamine, bisphenol A, Triethylenetetramine. May produce an allergic reaction.
Severe allergic skin reaction, bronchial spasms and anaphylactic shock are possible.
Medical supervision for at least 48 hours.
Later observation for pneumonia and pulmonary edema.
In cases of irritation to the lungs, initial treatment with cortical steroid inhalants.
If medical advice is needed, have product container or label at hand.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents: Foam, dry chemical or carbon dioxide.
For safety reasons unsuitable extinguishing agents:
Water stream.

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Water spray

Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.
Nitrogen oxides (NOx)

Advice for firefighters

Protective equipment:

Wear self-contained respiratory protective device.
Wear fully protective suit.

Additional information:

Cool endangered containers with water fog.
Evacuate area and fight fire from from the upwind side.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use respiratory protective device against the effects of fumes/dust/aerosol.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation.

Environmental precautions

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Inform respective authorities in case of seepage into water course or sewage system.

Methods and material for containment and cleaning up

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Send for recovery or disposal in suitable receptacles.

Reference to other sections

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling

Precautions for safe handling:

Open and handle receptacle with care.
Avoid contact with the eyes and skin.
Avoid breathing mist, vapors, or spray.
Avoid splashes or spray in enclosed areas.
Use only outdoors or in a well-ventilated area.

Information about protection against explosions and fires:

Keep respiratory protective device available.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

Avoid storage near extreme heat, ignition sources or open flame.
Protect from humidity and water.

Information about storage in one common storage facility:

Store away from foodstuffs.

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- Do not store together with oxidizing and acidic materials.
- Further information about storage conditions:**
Keep containers tightly sealed.
Store locked up.
- Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

111-40-0 2,2'-iminodiethylamine

REL (USA)	Long-term value: 4 mg/m ³ , 1 ppm Skin
TLV (USA)	Long-term value: 4.2 mg/m ³ , 1 ppm Skin
EL (Canada)	Long-term value: 1 ppm Skin; S
EV (Canada)	Long-term value: 4 mg/m ³ , 1 ppm Skin
LMPE (Mexico)	Long-term value: 1 ppm PIEL

112-24-3 Triethylenetetramine

WEEL (USA)	Long-term value: 6 mg/m ³ , 1 ppm Skin
EV (Canada)	Long-term value: 3 mg/m ³ , 0.5 ppm Skin

100-51-6 benzyl alcohol

WEEL (USA)	Long-term value: 10 ppm
------------	-------------------------

Exposure controls

General protective and hygienic measures:

- The usual precautionary measures for handling chemicals should be followed.
- Keep away from foodstuffs, beverages and feed.
- Wash hands before breaks and at the end of work.
- Do not inhale gases / fumes / aerosols.
- Avoid contact with the eyes and skin.
- Pregnant women should strictly avoid inhalation or skin contact.

Engineering controls:

- No relevant information available.
- Breathing equipment:**
Use suitable respiratory protective device in case of insufficient ventilation.
Use respiratory protection when grinding or cutting material.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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Eye protection:



Safety glasses

- Follow relevant national guidelines concerning the use of protective eyewear.
- Body protection:** Protective work clothing
- Limitation and supervision of exposure into the environment**
No relevant information available.
- Risk management measures** No relevant information available.

9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance:

- Form:** Liquid
- Color:** Amber colored
- Odor:** Amine-like
- Odor threshold:** Not determined.

- pH-value:** Not determined.
- Melting point/Melting range:** Not determined.
- Boiling point/Boiling range:** >176 °C (>348.8 °F)

- Flash point:** >100 °C (>212 °F)

- Flammability (solid, gaseous):** Not applicable.

- Auto-ignition temperature:** Not determined.

- Decomposition temperature:** Not determined.

- Danger of explosion:** Product does not present an explosion hazard.

Explosion limits

- Lower:** Not determined.
- Upper:** Not determined.
- Oxidizing properties:** Non-oxidizing.

- Vapor pressure:** Not determined.

Density:

- Relative density at 20 °C (68 °F):** 1.01 g/cm³ (8.43 lbs/gal)
- Vapor density:** Not determined.
- Evaporation rate:** Not determined.

Solubility in / Miscibility with

- Water:** Not miscible or difficult to mix.

- Partition coefficient (n-octanol/water):** Not determined.

Viscosity

- Dynamic at 20 °C (68 °F):** 150-350 cps
- Kinematic:** Not determined.

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Other information

No relevant information available.

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**
Exothermic polymerization.
Reacts with water and acids.
Reacts with alcohols, amines, aqueous acids and alkalis.
Reacts with catalysts.
Reacts with peroxides and other radical forming substances.
Toxic fumes may be released if heated above the decomposition point.
- **Conditions to avoid** Excessive heat.
- **Incompatible materials** Oxidizers, strong bases, strong acids
- **Hazardous decomposition products**
Carbon monoxide and carbon dioxide
Nitrogen oxides (NO_x)
Ammonia

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Harmful if swallowed or in contact with skin.

LD/LC50 values that are relevant for classification:
111-40-0 2,2'-iminodiethylamine

Oral	LD50	1080 mg/kg (rat)
Dermal	LD50	1090 mg/kg (rabbit)
Inhalative	LC50/4h	0.3 mg/l (rat)

80-05-7 bisphenol A

Oral	LD50	3250 mg/kg (rat)
Dermal	LD50	3000 mg/kg (rabbit)

112-24-3 Triethylenetetramine

Oral	LD50	2500 mg/kg (rat)
Dermal	LD50	805 mg/kg (rabbit)

100-51-6 benzyl alcohol

Oral	LD50	1230 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rabbit)

90-72-2 2,4,6-tris(dimethylaminomethyl)phenol

Oral	LD50	2169 mg/kg (rat)
Dermal	LD50	>1000 mg/kg (rat)

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- **Primary irritant effect:**
- **On the skin:** Strong caustic effect on skin and mucous membranes.
- **On the eye:** Strong caustic effect.
- **Sensitization:** Sensitization possible through skin contact.

IARC (International Agency for Research on Cancer):

None of the ingredients are listed.

NTP (National Toxicology Program):

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration):

None of the ingredients are listed.

Probable route(s) of exposure:

- Ingestion.
- Inhalation.
- Eye contact.
- Skin contact.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** May damage fertility or the unborn child.
- **STOT-single exposure:** May cause respiratory irritation.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity**
Toxic to aquatic life with long lasting effects.

100-51-6 benzyl alcohol

LC50 | 460 mg/l (pimephales promelas)

- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.

Additional ecological information

- **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No relevant information available.

13 Disposal considerations

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Waste treatment methods
Recommendation:

Can be disposed of with household garbage after solidification following consultation with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

Uncleaned packagings
Recommendation:

Disposal must be made according to official regulations. Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

14 Transport information
UN-Number

DOT, ADR, IMDG, IATA UN2735

UN proper shipping name

 DOT, IATA Amines, liquid, corrosive, n.o.s. (Diethylenetriamine, Triethylenetetramine)
 ADR, IMDG AMINES, LIQUID, CORROSIVE, N.O.S. (DIETHYLENETRIAMINE, TRIETHYLENETETRAMINE)

Transport hazard class(es)
DOT

 Class 8 Corrosive substances
 Label 8

ADR

 Class 8 (C7) Corrosive substances
 Label 8

IMDG, IATA

 Class 8 Corrosive substances
 Label 8

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Packing group

DOT, ADR, IMDG, IATA II

Environmental hazards

Product contains environmentally hazardous substances: bisphenol A

Marine pollutant:


Yes

Special precautions for user

Warning: Corrosive substances

Danger code (Kemler):

80

EMS Number:

F-A,S-B

Segregation groups

Alkalis

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

Transport/Additional information:
DOT

Labeling as a Marine Pollutant is only required for bulk single package shipments. Bulk packaging consists of a maximum capacity of greater than 450 L (119 gallons) for a liquid and a maximum net mass greater than 400 kg (882 pounds) for a solid. (See 171.4(c))



Limited Quantity for packages less than 30 kg gross and inner packagings less than 1 L each.

ADR

Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to provisions relevant to marine pollutants. (See 5.2.1.8.1)



Limited Quantity for packages less than 30 kg gross and inner packagings less than 1 L each.

IMDG

Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to provisions relevant to marine pollutants. (See 2.10.2.7)



Limited Quantity for packages less than 30 kg gross and inner packagings less than 1 L each.

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IATA


Limited Quantity for packages less than 30 kg gross and inner packagings less than 0.1 L each / 0.5 L net.

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

Section 302 (extremely hazardous substances):

None of the ingredients are listed.

Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

80-05-7 | bisphenol A

TSCA (Toxic Substances Control Act)

All ingredients are listed.

Proposition 65 (California)
Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity for females:

80-05-7 | bisphenol A

Chemicals known to cause developmental toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

EPA (Environmental Protection Agency):

None of the ingredients are listed.

IARC (International Agency for Research on Cancer):

None of the ingredients are listed.

Canadian Domestic Substances List (DSL):

All ingredients are listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bio-accumulable, Toxic
 vPvB: very Persistent and very Bioaccumulative
 OSHA: Occupational Safety & Health Administration
 Acute Tox. 4: Acute toxicity – Category 4
 Acute Tox. 2: Acute toxicity – Category 2
 Skin Corr. 1B: Skin corrosion/irritation – Category 1B
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
 Skin Sens. 1: Skin sensitisation – Category 1
 Skin Sens. 1B: Skin sensitisation – Category 1B
 Repr. 1A: Reproductive toxicity – Category 1A
 Repr. 1B: Reproductive toxicity – Category 1B
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Sources

Website, European Chemicals Agency (echa.europa.eu)
 Website, US EPA Substance Registry Services (ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do)
 Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
 Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
 Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.
 Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

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1 Identification

- **Product identifier**
- **Trade name:** Armor-Hard (Part C)
- **Other means of identification:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Epoxy Filler
- **Restrictions on use:** For professional use only.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
METZGER/McGUIRE
Mailing Address:
PO Box 2217
Concord, NH 03302
Shipping Address:
807 Route 3-A
Bow, NH 03304
Phone: 603-224-6122
Toll Free: 800-223-6680
Email: info@metzgermcguire.com
- **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
Carc. 1A H350 May cause cancer. Route of exposure: Inhalation.
- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**

GHS08
- **Signal word:** Danger
- **Hazard statements:**
H350 May cause cancer. Route of exposure: Inhalation.
- **Precautionary statements:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves and eye protection.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures

- **Components:**

14808-60-7	Quartz (SiO ₂)		Carc. 1A, H350	50-100%
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- **Additional information:**

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.
For the wording of the listed Hazard Statements, refer to section 16.

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:**
Supply fresh air; consult doctor in case of complaints.
Provide oxygen treatment if affected person has difficulty breathing.
- **After skin contact:**
Brush off loose particles from skin.
Wash with soap and water.
If skin irritation is experienced, consult a doctor.
- **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed:**
Coughing
Breathing difficulty
- **Danger:**
Danger of impaired breathing.
May cause cancer by inhalation. Route of exposure: Inhalation.
- **Indication of any immediate medical attention and special treatment needed:**
If necessary oxygen respiration treatment.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
The product is not flammable.
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** None.
- **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**

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- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation.
For large spills, wear protective clothing.
For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.
- **Environmental precautions** No special measures required.
- **Methods and material for containment and cleaning up**
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
Use personal protective equipment as required.
Prevent formation of dust.
Any deposit of dust which cannot be avoided must be regularly removed.
Use only in well ventilated areas.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**
Store in cool, dry conditions in well sealed receptacles.
- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidizing agents.
- **Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

14808-60-7 Quartz (SiO₂)

PEL (USA)	Long-term value: 0.05* mg/m ³ *resp. dust; 30mg/m ³ /%SiO ₂ +2
REL (USA)	Long-term value: 0.05* mg/m ³ *respirable dust; See Pocket Guide App. A

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TLV (USA)	Long-term value: 0.025* mg/m ³ *as respirable fraction
EL (Canada)	Long-term value: 0.025 mg/m ³ ACGIH A2; IARC 1
EV (Canada)	Long-term value: 0.10* mg/m ³ *respirable fraction
LMPE (Mexico)	Long-term value: 0.025* mg/m ³ A2, *fracción respirable

- **Exposure controls**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Do not breathe dust.
- **Engineering controls:** No relevant information available.
- **Breathing equipment:**
NIOSH or EU approved dust respirator should be used for operations generating dust.
Particulate mask should filter at least 99% of airborne particles.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Eye protection:



Safety glasses

- **Body protection:**
Not required under normal conditions of use.
Protection may be required for spills.
- **Limitation and supervision of exposure into the environment**
No relevant information available.

9 Physical and chemical properties

Information on basic physical and chemical properties

- **Appearance:**
- **Form:** Granulate
- **Color:** Various colors
- **Odor:** Odorless
- **Odor threshold:** Not determined.
- **pH-value:** Not applicable.
- **Melting point/Melting range:** >1000 °C (>1,832 °F)
- **Boiling point/Boiling range:** >1000 °C (>1,832 °F)

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· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not determined.
· Auto-ignition temperature:	Not determined.
· Decomposition temperature:	Not determined.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits	
Lower:	Not determined.
Upper:	Not determined.
· Oxidizing properties:	Not determined.
· Vapor pressure:	Not determined.
· Density:	
Relative density at 20 °C (68 °F):	2.65 g/cm ³ (22.11 lbs/gal)
Vapor density:	Not applicable.
Evaporation rate:	Not applicable.
· Solubility in / Miscibility with Water:	Insoluble.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Other information	No relevant information available.

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions** Reacts with strong oxidizing agents.
- **Conditions to avoid** Prevent formation of dust.
- **Incompatible materials** No relevant information available.
- **Hazardous decomposition products** Possible in traces.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values that are relevant for classification:** None.
- **Primary irritant effect:**
- **On the skin:** Based on available data, the classification criteria are not met.
- **On the eye:** Based on available data, the classification criteria are not met.

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· IARC (International Agency for Research on Cancer):	
14808-60-7 Quartz (SiO ₂)	1
· NTP (National Toxicology Program):	
14808-60-7 Quartz (SiO ₂)	K
· OSHA-Ca (Occupational Safety & Health Administration):	
None of the ingredients are listed.	
· Probable route(s) of exposure:	
Ingestion.	
Inhalation.	
Eye contact.	
Skin contact.	
· Repeated dose toxicity:	
Long-term inhalation of silica dusts may cause obstructive pulmonary disease including silicosis.	
· Germ cell mutagenicity: Based on available data, the classification criteria are not met.	
· Carcinogenicity: May cause cancer. Route of exposure: Inhalation.	
· Reproductive toxicity: Based on available data, the classification criteria are not met.	
· STOT-single exposure: Based on available data, the classification criteria are not met.	
· STOT-repeated exposure: Causes damage to organs through prolonged or repeated exposure.	
· Aspiration hazard: Based on available data, the classification criteria are not met.	

12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:** Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Contact waste processors for recycling information. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- **Uncleaned packagings**

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 · **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

 · **UN-Number**
 · DOT, ADR, IMDG, IATA Not regulated.

 · **UN proper shipping name**
 · DOT, ADR, IMDG, IATA Not regulated.

 · **Transport hazard class(es)**
 · DOT, ADR, IMDG, IATA
 · Class Not regulated.

 · **Packing group**
 · DOT, ADR, IMDG, IATA Not regulated.

 · **Environmental hazards**
 · Marine pollutant: No

 · **Special precautions for user** Not applicable.

 · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

15 Regulatory information

 · **Safety, health and environmental regulations/legislation specific for the substance or mixture**
 · United States (USA)
 · SARA

 · **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

 · **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

 · **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

 · **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

 · **Proposition 65 (California)**

 · **Chemicals known to cause cancer:**

 14808-60-7 | Quartz (SiO₂)

 · **Chemicals known to cause developmental toxicity for females:**

None of the ingredients are listed.

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 · **Chemicals known to cause developmental toxicity for males:**

None of the ingredients are listed.

 · **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

 · **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

 · **IARC (International Agency for Research on Cancer):**

 14808-60-7 | Quartz (SiO₂)

1

 · **Canadian Domestic Substances List (DSL):**

All ingredients are listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

 · **Date of preparation / last revision** April 26, 2018 / -

 · **Abbreviations and acronyms:**

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bio-accumulable, Toxic

vPvB: very Persistent and very Bioaccumulative

OSHA: Occupational Safety & Health Administration

Carc. 1A: Carcinogenicity – Category 1A

 · **Sources**

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

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Safety Data Sheets, Individual Manufacturers

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