

# Permabond®

Engineering Adhesives

## SAFETY DATA SHEET

### Permabond TA4246

#### 1. Identification

##### Product identifier

Product name Permabond TA4246

##### Recommended use of the chemical and restrictions on use

Application Adhesive.

##### Details of the supplier of the safety data sheet

Supplier Permabond LLC  
14 Robinson Street  
Pottstown, PA 19464  
USA  
Telephone: 732-868-1372 or 800-640-7599  
Website: www.permabond.com



chemical-concepts.com  
**800.220.1966**  
410 Pike Road • Huntingdon Valley, PA 19006

##### Emergency telephone number

Emergency telephone Medical: Poison Control Center 866-827-6282 (toll free) or 303-389-1109 Transport: CHEMTREC 800-424-9300

#### 2. Hazard(s) identification

##### Classification of the substance or mixture

OSHA Regulatory Status Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Physical hazards Flam. Liq. 2 - H225

Health hazards Skin Corr. 1A - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 STOT SE 3 - H335

##### Label elements

##### Hazard symbols



Signal word

Danger

##### Hazard statements

H225 Highly flammable liquid and vapor.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H335 May cause respiratory irritation.

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<b>Precautionary statements</b>	<p>P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.</p> <p>P240 Ground/ bond container and receiving equipment.</p> <p>P241 Use explosion-proof electrical equipment.</p> <p>P242 Use only non-sparking tools.</p> <p>P243 Take precautionary measures against static discharge.</p> <p>P260 Do not breathe vapor/ spray.</p> <p>P261 Avoid breathing vapor/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P272 Contaminated work clothing must not be allowed out of the workplace.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.</p> <p>P302+P352 If on skin: Wash with plenty of water.</p> <p>P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.</p> <p>P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.</p> <p>P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P310 Immediately call a poison center/ doctor.</p> <p>P312 Call a poison center/ doctor if you feel unwell.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P363 Wash contaminated clothing before reuse.</p> <p>P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P403+P235 Store in a well-ventilated place. Keep cool.</p> <p>P405 Store locked up.</p> <p>Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.</p>
<b>Contains</b>	METHYL METHACRYLATE, METHACRYLIC ACID, EPOXY RESIN (Number average MW <= 700 )

### 3. Composition/information on ingredients

#### Mixtures

<b>METHYL METHACRYLATE</b>	<b>30-60%</b>
CAS number: 80-62-6	
<b>Classification</b>	
Flam. Liq. 2 - H225	
Skin Irrit. 2 - H315	
Skin Sens. 1 - H317	
STOT SE 3 - H335	

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<b>METHACRYLIC ACID</b>	<b>5-10%</b>
CAS number: 79-41-4	
<b>Classification</b> Acute Tox. 4 - H302 Acute Tox. 3 - H311 Acute Tox. 4 - H332 Skin Corr. 1A - H314 Eye Dam. 1 - H318 STOT SE 3 - H335	
<b>EPOXY RESIN (Number average MW &lt;= 700 )</b>	<b>5-10%</b>
CAS number: 1675-54-3	
<b>Classification</b> Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 Skin Sens. 1 - H317 Not relevant.	
<b>CUMENE HYDROPEROXIDE</b>	<b>&lt;1%</b>
CAS number: 80-15-9	
<b>Classification</b> Org. Perox. E - H242 Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 3 - H331 Skin Corr. 1B - H314 Eye Dam. 1 - H318 STOT SE 3 - H335 STOT RE 2 - H373 Not relevant.	

The full text for all hazard statements is displayed in Section 16.

**Composition comments**      Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

#### 4. First-aid measures

##### Description of first aid measures

<b>Inhalation</b>	Move affected person to fresh air at once. Get medical attention if any discomfort continues.
<b>Ingestion</b>	Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.
<b>Skin Contact</b>	Wash with plenty of soap and water. Remove contaminated clothing immediately and wash skin with soap and water. Wash clothing and clean shoes thoroughly before reuse. Get medical attention if irritation persists after washing.
<b>Eye contact</b>	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention.

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### Most important symptoms and effects, both acute and delayed

<b>Inhalation</b>	May cause respiratory system irritation. May cause drowsiness or dizziness.
<b>Ingestion</b>	May cause irritation.
<b>Skin contact</b>	Causes skin irritation. May cause allergic skin reaction.
<b>Eye contact</b>	Causes serious eye damage.

### Indication of immediate medical attention and special treatment needed

<b>Notes for the doctor</b>	No specific recommendations. Treat symptomatically.
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### 5. Fire-fighting measures

#### Extinguishing media

<b>Suitable extinguishing media</b>	Extinguish with foam, carbon dioxide, dry powder or water fog.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.

#### Special hazards arising from the substance or mixture

<b>Specific hazards</b>	Vapors are heavier than air and may travel along the floor and accumulate in the bottom of containers. Vapors may be ignited by a spark, a hot surface or an ember.
<b>Hazardous combustion products</b>	Thermal decomposition or combustion products may include the following substances: Carbon dioxide (CO <sub>2</sub> ). Carbon monoxide (CO). Irritating gases or vapors.

#### Advice for firefighters

<b>Special protective equipment for firefighters</b>	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.
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### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

<b>Personal precautions</b>	Wear protective clothing as described in Section 8 of this safety data sheet.
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#### Environmental precautions

<b>Environmental precautions</b>	Avoid the spillage or runoff entering drains, sewers or watercourses.
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#### Methods and material for containment and cleaning up

<b>Methods for cleaning up</b>	Eliminate all sources of ignition. Provide adequate ventilation. Absorb spillage with sand or other inert absorbent. Place waste in labeled, sealed containers.
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<b>Reference to other sections</b>	For personal protection, see Section 8. For waste disposal, see section 13.
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### 7. Handling and storage

#### Precautions for safe handling

<b>Usage precautions</b>	Keep away from heat, sparks and open flame. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling. Keep container tightly sealed when not in use. Do not eat, drink or smoke when using this product. All handling should only take place in well-ventilated areas.
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#### Conditions for safe storage, including any incompatibilities

<b>Storage precautions</b>	Keep container tightly closed, in a cool, well ventilated place. Keep container dry. Store in closed original container at temperatures between 2°C and 7°C.
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#### Specific end uses(s)

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**Specific end use(s)** Adhesive.

### 8. Exposure controls/Personal protection

#### Control parameters

#### Occupational exposure limits

#### **METHYL METHACRYLATE**

Long-term exposure limit (8-hour TWA): ACGIH 50 ppm 205 mg/m<sup>3</sup>

Short-term exposure limit (15-minute): ACGIH 100 ppm 410 mg/m<sup>3</sup>

A4, DSens

Long-term exposure limit (8-hour TWA): OSHA 100 ppm 410 mg/m<sup>3</sup>

#### **METHACRYLIC ACID**

Long-term exposure limit (8-hour TWA): ACGIH 20 ppm 70 mg/m<sup>3</sup>

ACGIH = American Conference of Governmental Industrial Hygienists.

A4 = Not Classifiable as a Human Carcinogen.

DSens = Dermal sensitizer.

OSHA = Occupational Safety and Health Administration.

**Ingredient comments** WEL = Workplace Exposure Limits

#### Exposure controls

**Appropriate engineering controls** Observe any occupational exposure limits for the product or ingredients. Provide adequate general and local exhaust ventilation.

**Eye/face protection** Chemical splash goggles or face shield.

**Hand protection** It is recommended that chemical-resistant, impervious gloves are worn.

**Other skin and body protection** Wear appropriate clothing to prevent skin contamination.

**Hygiene measures** Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated.

**Respiratory protection** Respiratory protection may be required if excessive airborne contamination occurs. Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Organic vapor filter.

### 9. Physical and chemical properties

#### Information on basic physical and chemical properties

<b>Appearance</b>	Viscous liquid.
<b>Color</b>	Amber.
<b>Odor</b>	Pungent. Acrylic
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not relevant.
<b>Melting point</b>	Not available.
<b>Initial boiling point and range</b>	~100°C
<b>Flash point</b>	11°C
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.

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<b>Upper/lower flammability or explosive limits</b>	Not available.
<b>Vapor pressure</b>	28 mm Hg
<b>Vapor density</b>	3.46
<b>Relative density</b>	1.0
<b>Solubility(ies)</b>	Slightly soluble in water. Soluble in the following materials: Organic solvents.
<b>Partition coefficient</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition Temperature</b>	Not available.
<b>Viscosity</b>	≈23000 mPa s @ 23°C
<b>Oxidizing properties</b>	Not available.
<b>Other information</b>	Not relevant.
<b>Volatile organic compound</b>	<2 %, 20 grams/liter (Estimated) adhesive and activator mixed

### 10. Stability and reactivity

<b>Reactivity</b>	Not available
<b>Stability</b>	Stable at normal ambient temperatures.
<b>Possibility of hazardous reactions</b>	Reactions with the following materials may generate heat: Amines. Organic peroxides/hydroperoxides.
<b>Conditions to avoid</b>	Avoid heat, flames and other sources of ignition.
<b>Materials to avoid</b>	Oxidizing agents. Reducing agents. Acids. Peroxides.
<b>Hazardous decomposition products</b>	Thermal decomposition or combustion products may include the following substances: Carbon dioxide (CO <sub>2</sub> ). Carbon monoxide (CO). Irritating gases or vapors.

### 11. Toxicological information

#### Information on toxicological effects

<b>Toxicological effects</b>	The toxicological properties of this product have not been fully evaluated. Use of good industrial hygiene practices is required. Avoid direct contact with skin or eyes. Do not ingest or inhale.
<b><u>Skin corrosion/irritation</u></b>	
<b>Skin corrosion/irritation</b>	Causes burns.
<b><u>Serious eye damage/irritation</u></b>	
<b>Serious eye damage/irritation</b>	Causes serious eye damage.
<b><u>Skin sensitization</u></b>	
<b>Skin sensitization</b>	May cause sensitisation by skin contact.
<b><u>Germ cell mutagenicity</u></b>	
<b>Genotoxicity - in vitro</b>	Based on available data the classification criteria are not met.

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<b>Genotoxicity - in vivo</b>	Based on available data the classification criteria are not met.
<b><u>Carcinogenicity</u></b>	
<b>Carcinogenicity</b>	No component of this product present at levels great than or equal to 0.1% is identified as a known carcinogen.
<b><u>Reproductive toxicity</u></b>	
<b>Reproductive toxicity - fertility</b>	Based on available data the classification criteria are not met.
<b>Reproductive toxicity - development</b>	Does not contain any substances known to be toxic to reproduction.
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	May cause respiratory irritation.
<b>Target organs</b>	Respiratory tract
<b><u>Specific target organ toxicity - repeated exposure</u></b>	
<b>STOT - repeated exposure</b>	Based on available data the classification criteria are not met.
<b><u>Aspiration hazard</u></b>	
<b>Aspiration hazard</b>	Based on available data the classification criteria are not met.
<b>Inhalation</b>	May cause respiratory system irritation. May cause drowsiness or dizziness.
<b>Ingestion</b>	May cause irritation.
<b>Skin Contact</b>	May cause allergic skin reaction. Causes skin burns
<b>Eye contact</b>	Causes serious eye damage.
<b>Acute and chronic health hazards</b>	Causes skin burns, irritation, and possible allergic reaction. Causes serious eye damage. May cause respiratory irritation.
<b>Route of exposure</b>	Skin and/or eye contact Inhalation
<b>Target Organs</b>	Respiratory tract Skin Eyes
<b><u>Toxicological information on ingredients.</u></b>	

### METHYL METHACRYLATE

#### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> 5,000.0 mg/kg)

Species Rat

#### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> 5,000.0 mg/kg)

Species Rat

#### Acute toxicity - inhalation

Acute toxicity inhalation (LC<sub>50</sub> vapours mg/l) 29.8

Species Rat

#### Skin corrosion/irritation

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**Skin corrosion/irritation** Not irritating. Prolonged skin contact may cause temporary irritation.

### Serious eye damage/irritation

**Serious eye damage/irritation** Not irritating.

### Respiratory sensitization

**Respiratory sensitization** Mouse: Sensitizing.

### Skin sensitization

**Skin sensitization** Local Lymph Node Assay (LLNA) - Mouse: Sensitizing.

### Germ cell mutagenicity

**Genotoxicity - in vitro** Inconclusive.

**Genotoxicity - in vivo** This substance has no evidence of mutagenic properties.

### Carcinogenicity

**Carcinogenicity** CMR: no

**IARC carcinogenicity** IARC Group 3 Not classifiable as to its carcinogenicity to humans.

### Reproductive toxicity

**Reproductive toxicity - fertility** No evidence of reproductive toxicity in animal studies.

**Reproductive toxicity - development** No evidence of reproductive toxicity in animal studies. non-teratogenic, not embryotoxic

### Specific target organ toxicity - single exposure

**Target organs** Respiratory tract Irritation.

### Specific target organ toxicity - repeated exposure

**Target organs** No specific target organs known.

### Aspiration hazard

**Aspiration hazard** Based on available data the classification criteria are not met.

## METHACRYLIC ACID

### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 1,320.0

**Species** Rat

### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 1,000.0

**Species** Rabbit

### Acute toxicity - inhalation

**Acute toxicity inhalation (LC<sub>50</sub> vapours mg/l)** 7.1

**Species** Rat



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### Skin corrosion/irritation

**Animal data** Dose: Method: OECD 404, 3 minutes, Rabbit Corrosive.

### Serious eye damage/irritation

**Serious eye damage/irritation** Method: OECD 405, Rabbit Corrosive.

### Respiratory sensitization

**Respiratory sensitization** Guinea pig: Not sensitizing. Method: various test systems

### Skin sensitization

**Skin sensitization** Guinea pig maximization test (GPMT) - Guinea pig: Not sensitizing.

### Germ cell mutagenicity

**Genotoxicity - in vitro** Based on available data the classification criteria are not met.

### Carcinogenicity

**Carcinogenicity** CMR: no

### Reproductive toxicity

**Reproductive toxicity - fertility** No evidence of reproductive toxicity in animal studies.

**Reproductive toxicity - development** Non-teratogenic, not embryotoxic

### Specific target organ toxicity - single exposure

**Target organs** Respiratory tract Irritating.

### Specific target organ toxicity - repeated exposure

**Target organs** No specific target organs known.

### Aspiration hazard

**Aspiration hazard** Based on available data the classification criteria are not met.

### EPOXY RESIN (Number average MW <= 700 )

### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 11,400.0

**Species** Rat

### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 2,000.1

**Species** Rabbit

### Acute toxicity - inhalation

**Notes (inhalation LC<sub>50</sub>)** No specific test data are available.

### Skin corrosion/irritation

**Skin corrosion/irritation** Not irritating.

**Animal data** Edema score: Very slight oedema - barely perceptible (1).

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### Serious eye damage/irritation

**Serious eye damage/irritation** Not irritating.

### Respiratory sensitization

**Respiratory sensitization** No specific test data are available.

### Skin sensitization

**Skin sensitization** Local Lymph Node Assay (LLNA) - Mouse: Sensitizing.

### Germ cell mutagenicity

**Genotoxicity - in vitro** Conclusive data but not sufficient for classification.

### Carcinogenicity

**Carcinogenicity** Conclusive data but not sufficient for classification.

**IARC carcinogenicity** IARC Group 3 Not classifiable as to its carcinogenicity to humans.

### Reproductive toxicity

**Reproductive toxicity - fertility** Fertility - NOAEL 750 mg/kg/day, Oral, Rat

**Reproductive toxicity - development** Developmental toxicity: - NOAEL: 180 mg/kg/day, Oral, Rat

### Specific target organ toxicity - single exposure

**STOT - single exposure** No specific test data are available.

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** Conclusive data but not sufficient for classification.

### Aspiration hazard

**Aspiration hazard** Based on available data the classification criteria are not met.

## CUMENE HYDROPEROXIDE

### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 328.0

**Species** Rat

### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 1,200.0

**Species** Rat

### Acute toxicity - inhalation

**Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l)** 1.37

**Species** Rat

### Skin corrosion/irritation

**Animal data** Highly irritating.

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### Serious eye damage/irritation

**Serious eye damage/irritation** Irritating to eyes.

### Skin sensitization

**Skin sensitization** Not sensitizing.

### Germ cell mutagenicity

**Genotoxicity - in vitro** Positive.

**Genotoxicity - in vivo** This substance has no evidence of mutagenic properties.

### Carcinogenicity

**Carcinogenicity** CMR: No

### Reproductive toxicity

**Reproductive toxicity - fertility** No specific test data are available.

**Reproductive toxicity - development** Developmental toxicity: - NOAEL:  $\geq 100$  mg/kg/day, Oral, Rat

### Specific target organ toxicity - single exposure

**STOT - single exposure** No specific test data are available.

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** Toxic: danger of serious damage to health by prolonged exposure through inhalation.

### Aspiration hazard

**Aspiration hazard** No specific test data are available.

## 12. Ecological information

**Ecotoxicity** There are no data on the ecotoxicity of this product.

### Bioaccumulative potential

**Partition coefficient** Not available.

## 13. Disposal considerations

### Waste treatment methods

**General information** Empty containers may contain product residue; follow SDS and label warnings even after they have been emptied.

**Disposal methods** Dispose of according to Federal, State and local governmental regulations.

## 14. Transport information

### UN Number

**UN No. (IMDG)** 2924

**UN No. (ICAO)** 2924

**UN No. (DOT)** UN2924

### UN proper shipping name

## Permabond TA4246

**Proper shipping name (IMDG)** FLAMMABLE LIQUID, CORROSIVE, N.O.S. (contains methylmethacrylate and Methacrylic acid)

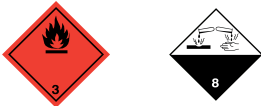
**Proper shipping name (ICAO)** FLAMMABLE LIQUID, CORROSIVE, N.O.S. (contains Methylmethacrylate and Metahcrylic acid)

**Proper shipping name (DOT)** FLAMMABLE LIQUIDS, CORROSIVE, N.O.S. (contains Methylmethacrylate and Methacrylic acid)

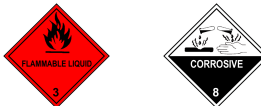
### Transport hazard class(es)

DOT hazard class	3
DOT subsidiary risk	8
DOT hazard label	3
IMDG Class	3
IMDG subsidiary risk	8
ICAO class/division	3
ICAO subsidiary risk	8

### Transport labels



### DOT transport labels



### Packing group

IMDG packing group	II
ICAO packing group	II
DOT packing group	II

### Environmental hazards

**Environmentally Hazardous Substance**  
No.

## 15. Regulatory information

### US Federal Regulations

#### SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

None above reporting levels

#### CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

*METHYL METHACRYLATE*

*CUMENE HYDROPEROXIDE*

#### SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None above reporting limits

**Permabond TA4246****SARA 313 Emission Reporting**

METHYL METHACRYLATE

**SARA (311/312) Hazard Categories**Acute  
Chronic  
Fire**US State Regulations****California Proposition 65 Carcinogens and Reproductive Toxins**

This product contains a chemical known to the state of California to cause cancer.

CUMENE

**Inventories****Canada - DSL/NDSL**

All the ingredients are listed or exempt.

**US - TSCA**

All the ingredients are listed or exempt.

**US - TSCA 12(b) Export Notification**

None above reporting limits

**16. Other information****Classification abbreviations and acronyms**Flam. Liq. = Flammable liquid  
Eye Dam. = Serious eye damage  
Skin Corr. = Skin corrosion  
Skin Irrit. = Skin irritation  
STOT SE = Specific target organ toxicity-single exposure**Revision date**

11/30/2021

**Revision**

10

**Supersedes date**

10/16/2020

**Hazard statements in full**H225 Highly flammable liquid and vapor.  
H242 Heating may cause a fire.  
H302 Harmful if swallowed.  
H311 Toxic in contact with skin.  
H312 Harmful in contact with skin.  
H314 Causes severe skin burns and eye damage.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H319 Causes serious eye irritation.  
H331 Toxic if inhaled.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.  
H373 May cause damage to organs through prolonged or repeated exposure.

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



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