

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

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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Precautionary statements	<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>
Contains	METHYL METHACRYLATE, METHACRYLIC ACID, EPOXY RESIN (Number average MW <= 700)

3. Composition/information on ingredients

Mixtures

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

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METHACRYLIC ACID	5-10%
CAS number: 79-41-4	
Classification	
Acute Tox. 4 - H302	
Acute Tox. 3 - H311	
Acute Tox. 4 - H332	
Skin Corr. 1A - H314	
Eye Dam. 1 - H318	
STOT SE 3 - H335	
EPOXY RESIN (Number average MW <= 700)	5-10%
CAS number: 1675-54-3	
Classification	
Skin Irrit. 2 - H315	
Eye Irrit. 2A - H319	
Skin Sens. 1 - H317	
Not relevant.	
CUMENE HYDROPEROXIDE	<1%
CAS number: 80-15-9	
Classification	
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

Inhalation	Move affected person to fresh air at once. Get medical attention if any discomfort continues.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.
Skin Contact	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.
Eye contact	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

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

Indication of immediate medical attention and special treatment needed

Notes for the doctor	No specific recommendations. Treat symptomatically.
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5. Fire-fighting measures

Extinguishing media

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

Special hazards arising from the substance or mixture

Specific hazards	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.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Carbon dioxide (CO ₂). Carbon monoxide (CO). Irritating gases or vapors.

Advice for firefighters

Special protective equipment for firefighters	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

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet.
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Environmental precautions

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

Methods for cleaning up	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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Reference to other sections	For personal protection, see Section 8. For waste disposal, see section 13.
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7. Handling and storage

Precautions for safe handling

Usage precautions	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

Storage precautions	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/m³

Short-term exposure limit (15-minute): ACGIH 100 ppm 410 mg/m³

A4, DSens

Long-term exposure limit (8-hour TWA): OSHA 100 ppm 410 mg/m³

METHACRYLIC ACID

Long-term exposure limit (8-hour TWA): ACGIH 20 ppm 70 mg/m³

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

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

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

10. Stability and reactivity

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

11. Toxicological information

Information on toxicological effects

Toxicological effects	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.
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Causes burns.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Causes serious eye damage.
<u>Skin sensitization</u>	
Skin sensitization	May cause sensitisation by skin contact.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Based on available data the classification criteria are not met.

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

METHYL METHACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ 5,000.0 mg/kg)

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ 5,000.0 mg/kg)

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ 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 (LD₅₀ mg/kg) 1,320.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 1,000.0

Species Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ 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 (LD₅₀ mg/kg) 11,400.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 2,000.1

Species Rabbit

Acute toxicity - inhalation

Notes (inhalation LC₅₀) 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 (LD₅₀ mg/kg) 328.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 1,200.0

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ 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: ≥ 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

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

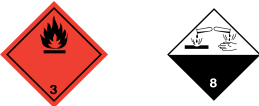
Proper shipping name (ICAO) FLAMMABLE LIQUID, CORROSIVE, N.O.S. (contains Methylmethacrylate and Metahcrylic acid)

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

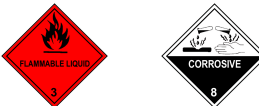
Transport hazard class(es)

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

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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.