

Permabond®

Engineering Adhesives

SAFETY DATA SHEET

Permabond TA4631B

1. Identification

Product identifier

Product name Permabond TA4631B

Recommended use of the chemical and restrictions on use

Application Adhesive. Sealant.

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 Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 Skin Sens. 1 - H317 Repr. 1B - H360D

Label elements

Hazard symbols



Signal word

Danger

Hazard statements

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H360D May damage the unborn child.

Permabond TA4631B

Precautionary statements	P201 Obtain special instructions before use.
	P202 Do not handle until all safety precautions have been read and understood.
	P261 Avoid breathing vapor/ spray.
	P264 Wash contaminated skin thoroughly after handling.
	P272 Contaminated work clothing must not be allowed out of the workplace.
	P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
	P302+P352 If on skin: Wash with plenty of 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.
	P308+P313 If exposed or concerned: Get medical advice/ attention.
	P321 Specific treatment (see medical advice on this label).
	P332+P313 If skin irritation occurs: Get medical advice/ attention.
	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.
	P405 Store locked up.
P501 Dispose of contents/ container in accordance with national regulations.	

Contains	TETRAHYDROFURFURYL METHACRYLATE, 2-ETHYLHEXYL METHACRYLATE, TRIETHYLBORANE-1,3-DIAMINOPROPANE COMPLEX, METHYL METHACRYLATE
-----------------	--

Other hazards

None under normal conditions.

3. Composition/information on ingredients

Mixtures

TETRAHYDROFURFURYL METHACRYLATE	30-60%
CAS number: 2455-24-5	
Classification	
Skin Sens. 1 - H317	
Repr. 1B - H360D	
Not relevant.	
2-ETHYLHEXYL METHACRYLATE	5-10%
CAS number: 688-84-6	
Classification	
Skin Irrit. 2 - H315	
Eye Irrit. 2A - H319	
Skin Sens. 1 - H317	
STOT SE 3 - H335	
Not relevant.	

Permabond TA4631B

TRIETHYLBORANE-1,3-DIAMINOPROPANE COMPLEX 1-5%
CAS number: 148861-07-8 REACH registration exemption – < 1 tonne
Classification Acute Tox. 4 - H312 Skin Corr. 1A - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317
2-DIMETHYLAMINOETHYL METHACRYLATE <1%
CAS number: 2867-47-2
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1B - H317
METHYL METHACRYLATE <1%
CAS number: 80-62-6
Classification Flam. Liq. 2 - H225 Skin Irrit. 2 - H315 Skin Sens. 1 - H317 STOT SE 3 - H335

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 the exposed person to fresh air. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. If breathing stops, provide artificial respiration. Get medical attention.
Ingestion	Do not induce vomiting unless under the direction of medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
Skin Contact	Wash skin thoroughly with soap and water. Take off contaminated clothing and wash it before reuse. Get medical attention.
Eye contact	Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention.

Most important symptoms and effects, both acute and delayed

Inhalation	May cause respiratory irritation.
Ingestion	May cause irritation.

Permabond TA4631B

Skin contact Causes skin irritation. May cause an allergic skin reaction.

Eye contact Causes serious eye irritation.

Indication of immediate medical attention and special treatment needed

Notes for the doctor No specific recommendations. Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media Water spray, foam, dry powder or carbon dioxide.

Special hazards arising from the substance or mixture

Hazardous combustion products Burning produces irritating, toxic and obnoxious fumes. Carbon monoxide, carbon dioxide, and unknown hydrocarbons.

Advice for firefighters

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

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.

Environmental precautions

Environmental precautions Avoid discharge into drains.

Methods and material for containment and cleaning up

Methods for cleaning up Absorb spillage with sand or other inert absorbent. Collect and place in suitable waste disposal containers and seal securely.

Reference to other sections For personal protection, see Section 8. For waste disposal, see section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions Avoid contact with skin, eyes and clothing. Use only in well-ventilated areas. Keep container tightly sealed when not in use. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage precautions Store in closed original container at temperatures between 44°F and 77°F. Never return unused material to storage receptacle.

Specific end uses(s)

Usage description Adhesive. Sealant.

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

Permabond TA4631B

ACGIH = American Conference of Governmental Industrial Hygienists.

A4 = Not Classifiable as a Human Carcinogen.

DSens = Dermal sensitizer.

OSHA = Occupational Safety and Health Administration.

Exposure controls

Appropriate engineering controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Observe any occupational exposure limits for the product or ingredients.
Eye/face protection	Use safety goggles and face shield in case of splash risk.
Hand protection	Nitrile rubber or Viton™ gloves are recommended. Cotton or other absorbent gloves should not be worn.
Other skin and body protection	Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance.
Hygiene measures	Wash at the end of each work shift and before eating, smoking and using the toilet.
Respiratory protection	No specific recommendations. Respiratory protection may be required if excessive airborne contamination occurs. Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Liquid.
Color	Translucent.
Odor	Acrylic
Odor threshold	Not available.
pH	Not relevant.
Melting point	Not available.
Initial boiling point and range	Not applicable.
Flash point	>93°C (199.94°F)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1.0 @ 25°C
Solubility(ies)	Slightly soluble in water. Miscible with the following materials: acetone
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	12,000 cP @ 25°C
Oxidizing properties	Not available.

Permabond TA4631B

Other information Not relevant.

Volatile organic compound Not available.

10. Stability and reactivity

Reactivity	The following materials may react with the product: Strong oxidizing agents.
Stability	Stable at normal ambient temperatures and when used as recommended.
Possibility of hazardous reactions	There are no known reactivity hazards associated with this product. Polymerization may occur at elevated temperature or in the presence of incompatible materials
Conditions to avoid	None known.
Materials to avoid	Avoid contact with strong oxidizing agents.
Hazardous decomposition products	Thermal decomposition could produce carbon monoxide, carbon dioxide, and unidentified organic compounds.

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.

Skin corrosion/irritation

Skin corrosion/irritation Irritating to skin.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitization

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization

Skin sensitization May cause sensitisation by skin contact.

Germ cell mutagenicity

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

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

Carcinogenicity

Carcinogenicity No component of this product present at levels great than or equal to 0.1% is identified as a known carcinogen.

Reproductive toxicity

Reproductive toxicity - fertility Contains a substance/a group of substances which may damage the unborn child.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Permabond TA4631B

Aspiration hazard	Based on available data the classification criteria are not met.
Ingestion	No harmful effects expected from quantities likely to be ingested by accident.
Skin Contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Irritating to eyes.
Acute and chronic health hazards	This product may cause skin and eye irritation.
Route of exposure	Skin and/or eye contact

Toxicological information on ingredients.

TETRAHYDROFURFURYL METHACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 4,000.0

Species Rat

Skin corrosion/irritation

Skin corrosion/irritation Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation Not irritating.

Skin sensitization

Skin sensitization Sensitizing.

Germ cell mutagenicity

Genotoxicity - in vitro Negative.

Carcinogenicity

Carcinogenicity No specific test data are available.

Reproductive toxicity

Reproductive toxicity - fertility Screening - NOAEL 120 mg/kg/day, Oral, Rat F1

Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL 300 mg/kg, Oral, Rat

Aspiration hazard

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

2-ETHYLHEXYL METHACRYLATE

Acute toxicity - oral

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

Permabond TA4631B

Species	Rat
<u>Acute toxicity - dermal</u>	
Notes (dermal LD₅₀)	No information available.
<u>Acute toxicity - inhalation</u>	
Notes (inhalation LC₅₀)	No information available.
<u>Skin corrosion/irritation</u>	
Human skin model test	Not irritating.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Not irritating.
<u>Skin sensitization</u>	
Skin sensitization	Local Lymph Node Assay (LLNA) - Mouse: Not sensitizing.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Chromosome aberration: Negative.
<u>Carcinogenicity</u>	
Carcinogenicity	NOAEC >=2.05 mg/l, Inhalation, Rat
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Screening - NOAEL 300 mg/kg/day, Oral, Rat F1
Reproductive toxicity - development	Developmental toxicity: - LOAEL: 1000 mg/kg/day, Oral, Rat
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Not available.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Not available.
<u>Aspiration hazard</u>	
Aspiration hazard	Not available.

2-DIMETHYLAMINOETHYL METHACRYLATE

<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD₅₀ mg/kg)	2,000.0
Species	Rat
<u>Acute toxicity - dermal</u>	
Acute toxicity dermal (LD₅₀ mg/kg)	2,000.0
Species	Rat
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Corrosive to skin.

Permabond TA4631B

Serious eye damage/irritation

Serious eye damage/irritation Corrosive Possible risk of irreversible effects.

Skin sensitization

Skin sensitization Sensitizing.

Germ cell mutagenicity

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

Carcinogenicity

Carcinogenicity No specific test data are available.

Aspiration hazard

Aspiration hazard Not applicable.

METHYL METHACRYLATE

Acute toxicity - oral

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

Species Rat

Acute toxicity - dermal

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

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 29.8

Species Rat

Skin corrosion/irritation

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

Permabond TA4631B

IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.
<u>Reproductive toxicity</u>	
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
<u>Specific target organ toxicity - single exposure</u>	
Target organs	Respiratory tract Irritation.
<u>Specific target organ toxicity - repeated exposure</u>	
Target organs	No specific target organs known.
<u>Aspiration hazard</u>	
Aspiration hazard	Based on available data the classification criteria are not met.

12. Ecological information

Toxicity No data available.

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

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT).

UN Number

UN No. (International) Not applicable.

UN No. (DOT) Not applicable.

UN proper shipping name

Proper shipping name (International) Not applicable.

Proper shipping name (DOT) Not applicable.

Transport hazard class(es)

Transport Labels (International) No transport warning sign required.

DOT transport labels

No transport warning sign required.

Packing group

Packing group (International) Not applicable.

Permabond TA4631B

DOT packing group Not applicable.

Environmental hazards

Environmentally Hazardous Substance

No.

Special precautions for user

Not applicable.

DOT reportable quantity Not applicable.

DOT TIH Zone Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

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

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None above reporting limits

SARA 313 Emission Reporting

None above reporting limits

SARA (311/312) Hazard Categories

Acute
Chronic

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

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

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

Permabond TA4631B

Classification abbreviations and acronyms	Eye Irrit. = Eye irritation Skin Irrit. = Skin irritation Skin Sens. = Skin sensitisation STOT SE = Specific target organ toxicity-single exposure
Revision date	2/8/2021
Revision	1
Hazard statements in full	H225 Highly flammable liquid and vapor. H302 Harmful if swallowed. 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. H335 May cause respiratory irritation. H360D May damage the unborn child.

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.