

# Permabond®

Engineering Adhesives

## SAFETY DATA SHEET

### Permabond PT321A

#### 1. Identification

##### Product identifier

**Product name** Permabond PT321A

##### 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** Not Classified

**Health hazards** Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 Skin Sens. 1 - H317

##### Label elements

##### Hazard symbols



**Signal word** Warning

**Hazard statements** H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H317 May cause an allergic skin reaction.

## Permabond PT321A

<b>Precautionary statements</b>	<p>P261 Avoid breathing vapor/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</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>P302+P352 If on skin: Wash with plenty of water.</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>P332+P313 If skin irritation occurs: Get medical advice/ attention.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P337+P313 If eye irritation persists: Get medical advice/ attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.</p>
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**Contains** m-PHENYLENEBIS(METHYLAMINE)

### 3. Composition/information on ingredients

#### Mixtures

<b>1,1',1",1'''-ETHYLENEDINITRILOTETRAPROPAN-2-OL</b> CAS number: 102-60-3	<b>10-30%</b>
<b>Classification</b> Eye Irrit. 2A - H319	
<b>m-PHENYLENEBIS(METHYLAMINE)</b> CAS number: 1477-55-0	<b>1-5%</b>
<b>Classification</b> Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Corr. 1C - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 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 the exposed person to fresh air. Get medical attention if any discomfort continues.
<b>Ingestion</b>	Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Get medical attention if any discomfort continues.
<b>Skin Contact</b>	Remove contaminated clothing. Wash skin thoroughly with soap and water. If symptoms develop, obtain medical attention
<b>Eye contact</b>	Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Remove any contact lenses and open eyelids wide apart. Get medical attention if any discomfort continues.

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

## Permabond PT321A

**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** 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

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

### Advice for firefighters

**Protective actions during firefighting** Use water to keep fire exposed containers cool and disperse vapors.

**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 the spillage or runoff entering drains, sewers or watercourses.

### Methods and material for containment and cleaning up

**Methods for cleaning up** Absorb spillage with sand or other inert absorbent. Transfer to suitable, labelled containers for disposal.

**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. Do not breathe vapour/spray. Wash hands thoroughly after handling. Keep container tightly sealed when not in use.

### Conditions for safe storage, including any incompatibilities

**Storage precautions** Store in tightly-closed, original container in a dry, cool and well-ventilated place.

### Specific end uses(s)

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

## 8. Exposure controls/Personal protection

### Control parameters

### Occupational exposure limits

m-PHENYLENEBIS(METHYLAMINE)

## Permabond PT321A

Ceiling exposure limit: ACGIH 0.1 mg/m<sup>3</sup>

Sk

ACGIH = American Conference of Governmental Industrial Hygienists.

Sk = Danger of cutaneous absorption.

### Exposure controls

<b>Appropriate engineering controls</b>	Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients.
<b>Eye/face protection</b>	Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for slashing or spraying exists.
<b>Hand protection</b>	Nitrile rubber or Viton™ gloves are recommended. Cotton or other absorbent gloves should not be worn.
<b>Other skin and body protection</b>	Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance.
<b>Hygiene measures</b>	Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated.
<b>Respiratory protection</b>	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

<b>Appearance</b>	Liquid.
<b>Color</b>	Black.
<b>Odor</b>	Slight.
<b>Odor threshold</b>	No information available.
<b>pH</b>	Not relevant.
<b>Melting point</b>	Not available.
<b>Initial boiling point and range</b>	Not relevant.
<b>Flash point</b>	>100°C
<b>Evaporation rate</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	1.25
<b>Solubility(ies)</b>	Insoluble in water. Soluble in the following materials: Organic solvents.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition Temperature</b>	Not available.
<b>Viscosity</b>	≈5500 mPa s @ 23°C Thixotropic
<b>Explosive properties</b>	Not relevant.
<b>Oxidizing properties</b>	Not applicable.
<b>Other information</b>	Not relevant.
<b>Volatile organic compound</b>	<2 %, 20 grams/liter (Estimated)

## PermaBond PT321A

### 10. Stability and reactivity

<b>Reactivity</b>	The following materials may react with the product: Strong oxidizing agents. Acids. Isocyanates.
<b>Stability</b>	Stable at normal ambient temperatures. Polymerizes when heated.
<b>Possibility of hazardous reactions</b>	Reactions with the following materials may generate heat: Isocyanates.
<b>Conditions to avoid</b>	Do not store near heat sources or expose to high temperatures.
<b>Materials to avoid</b>	Strong oxidizing agents. Isocyanates.
<b>Hazardous decomposition products</b>	Thermal decomposition could produce carbon monoxide, carbon dioxide, and unidentified organic compounds.

### 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>	Irritating to skin.
<b><u>Serious eye damage/irritation</u></b>	
<b>Serious eye damage/irritation</b>	Causes serious eye irritation.
<b><u>Respiratory sensitization</u></b>	
<b>Respiratory sensitization</b>	Based on available data the classification criteria are not met.
<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.
<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>	Based on available data the classification criteria are not met.
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	Based on available data the classification criteria are not met.
<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.

## PermaBond PT321A

<b>Inhalation</b>	May cause respiratory irritation.
<b>Ingestion</b>	No harmful effects expected from quantities likely to be ingested by accident.
<b>Skin Contact</b>	Irritating.
<b>Eye contact</b>	Causes serious eye irritation.
<b>Acute and chronic health hazards</b>	Irritating to skin. May cause skin sensitization or allergic reactions in sensitive individuals. Irritating to eyes.
<b>Route of exposure</b>	Skin and/or eye contact
<b>Target Organs</b>	Eyes Skin

### Toxicological information on ingredients.

#### 1,1',1'',1'''-ETHYLENEDINITRILOTETRAPROPAN-2-OL

##### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 2,890.0

**Species** Rat

##### Acute toxicity - dermal

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

**Species** Rat

##### Acute toxicity - inhalation

**Notes (inhalation LC<sub>50</sub>)** No information available.

##### Skin corrosion/irritation

**Animal data** Method: OECD 404, Rabbit Not irritating.

##### Serious eye damage/irritation

**Serious eye damage/irritation** Method: OECD 405, Rabbit Irritating to eyes.

##### Skin sensitization

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

##### Germ cell mutagenicity

**Genotoxicity - in vitro** Chromosome aberration: Negative.

##### Carcinogenicity

**Carcinogenicity** No information available.

##### Reproductive toxicity

**Reproductive toxicity - fertility** Screening - NOAEL 1000 mg/kg/day, Oral, Rat P

**Reproductive toxicity - development** Developmental toxicity: - NOAEL: 1000 mg/kg/day, Oral, Rat

##### Specific target organ toxicity - single exposure

**STOT - single exposure** No information available.

## Permabond PT321A

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** No information available.

### Aspiration hazard

**Aspiration hazard** No information available.

### m-PHENYLENEBIS(METHYLAMINE)

### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 930.0

**Species** Rat

### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 3,100.0

**Species** Rabbit

### Acute toxicity - inhalation

**Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l)** 1.34

**Species** Rat

### Skin corrosion/irritation

**Animal data** Dose: 1 mL/kg, 4 hours, Rat Corrosive.

### Serious eye damage/irritation

**Serious eye damage/irritation** No information available.

### Skin sensitization

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

### Germ cell mutagenicity

**Genotoxicity - in vitro** Chromosome aberration: Negative.

**Genotoxicity - in vivo** Chromosome aberration: Negative.

### Carcinogenicity

**Carcinogenicity** Negative.

### Reproductive toxicity

**Reproductive toxicity - fertility** Screening - NOEL 450 mg/kg/day, Oral, Rat F1

**Reproductive toxicity - development** Developmental toxicity: - NOAEL: 300 mg/kg/day, Oral, Rat

### Specific target organ toxicity - single exposure

**STOT - single exposure** No information available.

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** No information available.

## PermaBond PT321A

### Aspiration hazard

**Aspiration hazard** No information available.

### 12. Ecological information

**Ecotoxicity** Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Toxicity** No data available.

#### Other adverse effects

**Other adverse effects** None known.

### 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 proper shipping name

**Proper shipping name (International)** Not applicable.

#### Transport hazard class(es)

**Transport Labels (International)** No transport warning sign required.

#### Packing group

**Packing group (International)** Not applicable.

#### Environmental hazards

**Environmentally Hazardous Substance**

No.

#### Special precautions for user

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



## PermaBond PT321A

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

None above reporting limits

### 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

<b>Classification abbreviations and acronyms</b>	Eye Irrit. = Eye irritation Skin Irrit. = Skin irritation Skin Sens. = Skin sensitisation
<b>Revision date</b>	12/10/2021
<b>Revision</b>	5
<b>Supersedes date</b>	1/31/2018
<b>Hazard statements in full</b>	H302 Harmful if swallowed. 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. H332 Harmful if inhaled.

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.