

# Permabond®

## Engineering Adhesives

### SAFETY DATA SHEET

#### Permabond UV645

#### 1. Identification

##### Product identifier

**Product name** Permabond UV645

##### 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

##### 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** Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Repr. 1B - H360Df

##### Label elements

##### Pictogram



##### Signal word

Danger

##### Hazard statements

H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H360Df May damage the unborn child. Suspected of damaging fertility.

## Permabond UV645

### 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.  
 P270 Do not eat, drink or smoke when using this product.  
 P272 Contaminated work clothing must not be allowed out of the workplace.  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
 P301+P312 If swallowed: Call a poison center/ doctor if you feel unwell.  
 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.  
 P310 Immediately call a poison center/ doctor.  
 P330 Rinse mouth.  
 P332+P313 If skin irritation occurs: Get medical advice/ attention.  
 P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.  
 P362+P364 Take off contaminated clothing and wash it before reuse.  
 P405 Store locked up.  
 Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

### Contains

TETRAHYDROFURFURYL METHACRYLATE, ISOBORNYL ACRYLATE, N,N-DIMETHYLACRYLAMIDE, 2-HYDROXYETHYL METHACRYLATE, DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE

### Other hazards

None under normal conditions.

### 3. Composition/information on ingredients

#### Mixtures

<b>TETRAHYDROFURFURYL METHACRYLATE</b>	<b>10-30%</b>
CAS number: 2455-24-5	
<b>Classification</b>	
Repr. 1B - H360Df	
<b>ISOBORNYL ACRYLATE</b>	<b>10-30%</b>
CAS number: 5888-33-5	
<b>Classification</b>	
Skin Irrit. 2 - H315	
Eye Irrit. 2A - H319	
Skin Sens. 1 - H317	
STOT SE 3 - H335	
Not relevant.	

## Permabond UV645

<b>N,N-DIMETHYLACRYLAMIDE</b>	<b>10-30%</b>
CAS number: 2680-03-7	
<b>Classification</b>	
Acute Tox. 3 - H301	
Acute Tox. 3 - H311	
Eye Dam. 1 - H318	
<b>2-HYDROXYETHYL METHACRYLATE</b>	<b>5-10%</b>
CAS number: 868-77-9	
<b>Classification</b>	
Skin Irrit. 2 - H315	
Eye Irrit. 2A - H319	
Skin Sens. 1 - H317	
<b>DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE</b>	<b>1-5%</b>
CAS number: 75980-60-8	
<b>Classification</b>	
Skin Sens. 1B - H317	
Repr. 2 - H361f	
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 symptoms are severe or persist.
<b>Ingestion</b>	Do not induce vomiting unless under the direction of medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
<b>Skin Contact</b>	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing. Wash contaminated clothing before reuse.
<b>Eye contact</b>	Remove any contact lenses and open eyelids wide apart. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

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

<b>Inhalation</b>	May cause respiratory irritation.
<b>Ingestion</b>	Harmful if swallowed.
<b>Skin contact</b>	Causes skin irritation. May cause an allergic skin reaction.
<b>Eye contact</b>	Causes serious eye damage.

## Permabond UV645

### 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

#### Exposure controls

**Appropriate engineering controls** Provide adequate general and local exhaust ventilation. 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.

## Permabond UV645

<b>Hygiene measures</b>	Wash at the end of each work shift and before eating, smoking and using the toilet.
<b>Respiratory protection</b>	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

<b>Color</b>	Colorless.
<b>Odor</b>	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>	Not applicable.
<b>Flash point</b>	>93°C (199.94°F)
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	1.1
<b>Solubility(ies)</b>	Slightly soluble in water. Miscible with the following materials: acetone
<b>Partition coefficient</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition Temperature</b>	Not available.
<b>Viscosity</b>	≈45000 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)

### 10. Stability and reactivity

<b>Stability</b>	Stable at normal ambient temperatures and when used as recommended. Polymerizes when heated.
<b>Possibility of hazardous reactions</b>	There are no known reactivity hazards associated with this product. Polymerization may occur at elevated temperature or in the presence of incompatible materials
<b>Conditions to avoid</b>	Do not store near heat sources or expose to high temperatures. Protect against direct sunlight.
<b>Materials to avoid</b>	Strong oxidizing agents. Strong reducing agents.

## Permabond UV645

**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** Risk of serious damage to eyes.

#### 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 fertility.

**Reproductive toxicity - development** 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

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

#### **Inhalation**

In high concentrations, vapors may irritate throat and respiratory system and cause coughing.

#### **Ingestion**

Harmful if swallowed.

#### **Skin Contact**

Irritating to skin.

#### **Eye contact**

Causes serious eye damage.

#### **Acute and chronic health hazards**

May cause serious eye damage. Causes skin irritation. May cause skin sensitization or allergic reactions in sensitive individuals.

#### **Route of exposure**

Oral Skin and/or eye contact

#### Toxicological information on ingredients.

## Permabond UV645

### TETRAHYDROFURFURYL METHACRYLATE

#### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 4,000.0

Species Rat

ATE oral (mg/kg) 4,000.0

#### Reproductive toxicity

Reproductive toxicity - fertility Suspected of damaging fertility.

#### Specific target organ toxicity - repeated exposure

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

### ISOBORNYL ACRYLATE

#### Acute toxicity - oral

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

Species Rat

ATE oral (mg/kg) 5,000.0

#### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> mg/kg) 3,000.0

Species Rabbit

ATE dermal (mg/kg) 3,000.0

### 2-HYDROXYETHYL METHACRYLATE

#### Acute toxicity - oral

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

Species Rat

ATE oral (mg/kg) 5,000.0

#### Acute toxicity - dermal

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

Species Rabbit

ATE dermal (mg/kg) 5,000.0

#### Acute toxicity - inhalation

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

#### Skin corrosion/irritation

Animal data Erythema/eschar score: Very slight erythema - barely perceptible (1). Not irritating.

## Permabond UV645

### Serious eye damage/irritation

**Serious eye damage/irritation** Moderately irritating.

### Respiratory sensitization

**Respiratory sensitization** No information available.

### Skin sensitization

**Skin sensitization** Guinea pig maximization test (GPMT) - Guinea pig: Sensitizing.

### Germ cell mutagenicity

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

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

### Carcinogenicity

**Carcinogenicity** No specific test data are available.

### Reproductive toxicity

**Reproductive toxicity - fertility** Screening - NOAEL  $\geq$ 1000 mg/kg/day, Oral, Rat F1

**Reproductive toxicity - development** Developmental toxicity: - NOAEL:  $\geq$ 1000 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** No specific test data are available.

### Aspiration hazard

**Aspiration hazard** Not applicable.

### DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE

#### Acute toxicity - oral

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

**Species** Rat

**ATE oral (mg/kg)** 5,000.0

#### Acute toxicity - dermal

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

**Species** Rat

**ATE dermal (mg/kg)** 2,000.1

## 12. Ecological Information

**Toxicity** No data available.

### Bioaccumulative potential



## Permabond UV645

**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

**Sea transport notes** Applies only to inner containers >5 litres. See 2.10.2.7 of the IMDG code.

**Air transport notes** Applies only to inner containers >5 liters. See SP A197 (375)

**DOT transport notes** Applies only to inner containers >5 liters. See CFR 49173.155 and 172.102.173

#### UN Number

**UN No. (IMDG)** 3082

**UN No. (ICAO)** 3082

**UN No. (DOT)** UN3082

#### UN proper shipping name

CORROSIVE LIQUID, N.O.S. (contains Isobornyl Acrylate)

**Proper shipping name (IMDG)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains Isobornyl Acrylate)

**Proper shipping name (ICAO)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains Isobornyl Acrylate)

**Proper shipping name (DOT)** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (contains Isobornyl Acrylate)

#### Transport hazard class(es)

**DOT hazard class** 9

**DOT hazard label** 9

**IMDG Class** 9

**ICAO class/division** 9

#### **DOT transport labels**



#### **Transport labels**



#### Packing group

**IMDG packing group** III

**ICAO packing group** III

## Permabond UV645

DOT packing group III

### Environmental hazards

Environmentally Hazardous Substance



### 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)

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

**Classification abbreviations and acronyms**

Eye Dam. = Serious eye damage  
Skin Irrit. = Skin irritation  
Skin Sens. = Skin sensitisation  
Repr. = Reproductive toxicity

**Revision date** 1/31/2018

**Revision** 4

**Supersedes date** 8/7/2015

## Permabond UV645

### Hazard statements in full

H301 Toxic if swallowed.  
H302 Harmful if swallowed.  
H311 Toxic in contact with skin.  
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.  
H360Df May damage the unborn child. Suspected of damaging fertility.  
H361f Suspected of damaging fertility.

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.