SAFETY DATA SHEET
Permabond UV6160

1. Identification

Product identifier

Product name Permabond UV6160

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 Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 Skin Sens. 1 - H317 Repr. 2 - H361f STOT SE 3 - H335

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.
H361f Suspected of damaging fertility.
H335 May cause respiratory irritation.

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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.
P271 Use only outdoors or in a well-ventilated area.
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.
P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.
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.
P312 Call a poison center/ doctor if you feel unwell.
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.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/ container in accordance with national regulations.

Contains

ISOBORNYL ACRYLATE, 2-HYDROXYETHYL METHACRYLATE, METHACRYLIC ACID, MALEIC ACID, DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE

3. Composition/information on ingredients

Mixtures

ISOBORNYL ACRYLATE **30-60%**

CAS number: 5888-33-5

Classification
Skin Irrit. 2 - H315
Eye Irrit. 2A - H319
Skin Sens. 1 - H317
STOT SE 3 - H335
Not relevant.

2-HYDROXYETHYL METHACRYLATE **10-30%**

CAS number: 868-77-9

Classification
Skin Irrit. 2 - H315
Eye Irrit. 2A - H319
Skin Sens. 1 - H317

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METHACRYLIC ACID	1-5%
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

MALEIC ACID	1-5%
CAS number: 110-16-7	

Classification
Acute Tox. 4 - H302
Acute Tox. 4 - H312
Skin Irrit. 2 - H315
Eye Irrit. 2A - H319
Skin Sens. 1 - H317
STOT SE 3 - H335

DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE	<1%
CAS number: 75980-60-8	

Classification
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

Inhalation Move the exposed person to fresh air. Get medical attention if any discomfort continues.

Ingestion Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Get medical attention if any discomfort continues.

Skin Contact Remove contaminated clothing. Wash skin thoroughly with soap and water. If symptoms develop, obtain medical attention

Eye contact 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

Inhalation May cause respiratory system irritation.

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

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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

METHACRYLIC ACID

Long-term exposure limit (8-hour TWA): ACGIH 20 ppm 70 mg/m³
ACGIH = American Conference of Governmental Industrial Hygienists.

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Ingredient comments	WEL = Workplace Exposure Limits

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	Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for slashing or spraying exists.
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. Promptly remove any clothing that becomes contaminated.
Respiratory protection	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	Colorless.
Odor	Acrylic
Odor threshold	No information available.
pH	Not relevant.
Melting point	Not available.
Initial boiling point and range	Not relevant.
Flash point	>100°C
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	1.1
Solubility(ies)	Slightly soluble in water. Soluble in the following materials: Organic solvents.
Partition coefficient	Not available.
Auto-ignition temperature	Not applicable.
Decomposition Temperature	Not available.
Viscosity	≈1500 mPa s @ 23°C
Explosive properties	Not relevant.
Oxidizing properties	Not applicable.

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Other information	Not relevant.
Volatile organic compound	<2 %, 20 grams/liter (Estimated)

10. Stability and reactivity

Possibility of hazardous reactions	Polymerization may occur at elevated temperature or in the presence of incompatible materials
Conditions to avoid	Do not store near heat sources or expose to high temperatures. Protect against direct sunlight.
Materials to avoid	Strong oxidizing agents. Strong reducing 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 fertility. Contains a substance/a group of substances which may damage the unborn child.

Specific target organ toxicity - single exposure

STOT - single exposure	May cause respiratory system irritation.
Target organs	Respiratory tract

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

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Aspiration hazard	Based on available data the classification criteria are not met.
Inhalation	May cause respiratory system irritation.
Ingestion	No harmful effects expected from quantities likely to be ingested by accident.
Skin Contact	Irritating to skin.
Eye contact	Irritating and may cause redness and pain.
Acute and chronic health hazards	May cause skin irritation/eczema. May cause sensitisation by skin contact. Causes eye irritation.
Route of exposure	Inhalation Skin and/or eye contact
Target Organs	Reproductive organs Respiratory tract Skin Eyes

Toxicological information on ingredients.

ISOBORNYL ACRYLATE

Acute toxicity - oral	
Acute toxicity oral (LD_{50} mg/kg)	5,000.0
Species	Rat
Acute toxicity - dermal	
Acute toxicity dermal (LD_{50} mg/kg)	3,000.0
Species	Rabbit
Acute toxicity - inhalation	
Notes (inhalation LC_{50})	No information available.
Skin corrosion/irritation	
Skin corrosion/irritation	Not irritating.
Serious eye damage/irritation	
Serious eye damage/irritation	Not irritating.
Skin sensitization	
Skin sensitization	Local Lymph Node Assay (LLNA) - : Sensitizing.
Germ cell mutagenicity	
Genotoxicity - in vitro	Genome mutation: Negative.
Carcinogenicity	
Carcinogenicity	No information available.
Reproductive toxicity	
Reproductive toxicity - fertility	Two-generation study - NOEC 0.092 mg/l, Inhalation, Rat P
Reproductive toxicity - development	Developmental toxicity: - NOAEL: 500 mg/kg/day, Oral, Rat

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Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

2-HYDROXYETHYL METHACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg) 5,000.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg) 5,000.0

Species Rabbit

Acute toxicity - inhalation

Notes (inhalation LC_{50}) No information available.

Skin corrosion/irritation

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

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 >=1000 mg/kg/day, Oral, Rat F1

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

Specific target organ toxicity - single exposure

STOT - single exposure No specific test data are available.

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Specific target organ toxicity - repeated exposure

STOT - repeated exposure No specific test data are available.

Aspiration hazard

Aspiration hazard Not applicable.

METHACRYLIC ACID

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg) 1,320.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg) 1,000.0

Species Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} vapours mg/l) 7.1

Species Rat

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

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Target organs	No specific target organs known.

Aspiration hazard

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

MALEIC ACID

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	708.0
Species	Rat

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	1,560.0
Species	Rabbit

Acute toxicity - inhalation

Notes (inhalation LC_{50})	No information available.

Skin corrosion/irritation

Skin corrosion/irritation	Rabbit Irritating to skin.

Serious eye damage/irritation

Serious eye damage/irritation	Rabbit Causes serious eye damage.

Respiratory sensitization

Respiratory sensitization	Not irritating.

Skin sensitization

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

Germ cell mutagenicity

Genotoxicity - in vitro	Chromosome aberration: Positive. Ames test: Negative. DNA damage and/or repair: Negative.

Carcinogenicity

Carcinogenicity	Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility	Two-generation study - NOEL 55 mg/kg/day, Oral, Rat F2
Reproductive toxicity - development	No information available.

Specific target organ toxicity - single exposure

STOT - single exposure	May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	No information available.

Aspiration hazard

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Aspiration hazard	No data available.

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

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	5,000.0
Species	Rat

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	2,000.1
Species	Rat

Acute toxicity - inhalation

Notes (inhalation LC_{50})	No information available.

Skin corrosion/irritation

Skin corrosion/irritation	Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation	Not irritating.

Skin sensitization

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

Germ cell mutagenicity

Genotoxicity - in vitro	Gene mutation: Negative.

Carcinogenicity

Carcinogenicity	No data available.

Reproductive toxicity

Reproductive toxicity - fertility	Possible risk of adverse reproductive effects.
Reproductive toxicity - development	Developmental toxicity: - NOAEL: 150 mg/kg, Oral, Rat

Specific target organ toxicity - single exposure

STOT - single exposure	No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	NOAEL 50 mg/kg/day, Oral, Rat

Aspiration hazard

Aspiration hazard	No data available.

12. Ecological information

Ecotoxicity	Very toxic to aquatic life with long lasting effects.

Bioaccumulative potential

Partition coefficient	Not available.

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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

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

Proper shipping name (International) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, 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)

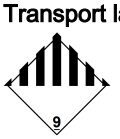
DOT hazard class 9

DOT hazard label 9

IMDG Class 9

ICAO class/division 9

Transport labels



DOT transport labels

Packing group

IMDG packing group III

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ICAO packing group III

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)

MALEIC ACID

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 Irrit. = Eye irritation
Skin Irrit. = Skin irritation
Skin Sens. = Skin sensitisation
Repr. = Reproductive toxicity
STOT SE = Specific target organ toxicity-single exposure

Revision date 4/29/2021

Revision 4

Permabond UV6160

Supersedes date 10/1/2015

Hazard statements in full

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.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H361f Suspected of damaging fertility.