

Permabond®

Engineering Adhesives

SAFETY DATA SHEET

Permabond ET5393B

1. Identification

Product identifier

Product name Permabond ET5393B

Recommended use of the chemical and restrictions on use

Application Two-component, epoxy-based 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 Corr. 1C - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Repr. 2 - H361

Label elements

Hazard symbols



Signal word

Danger

Hazard statements

H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H361 Suspected of damaging fertility or the unborn child.

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Precautionary statements	<p>P201 Obtain special instructions before use.</p> <p>P202 Do not handle until all safety precautions have been read and understood.</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>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>P308+P313 If exposed or concerned: Get medical advice/ attention.</p> <p>P310 Immediately call a poison center/ doctor.</p> <p>P321 Specific treatment (see medical advice on this label).</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>P405 Store locked up.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
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Contains	ATBN POLYMER, m-PHENYLENEBIS(METHYLAMINE), SALICYLIC ACID, 3,6-DIAZAOCTANEETHYLENEDIAMINE, 2-PIPERAZIN-1-YLETHYLAMINE
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Other hazards

None under normal conditions.

3. Composition/information on ingredients

Mixtures

ATBN POLYMER	10-30%
CAS number: 68683-29-4	
REACH registration exemption – POLYMER	
Classification	
Skin Irrit. 2 - H315	
Skin Sens. 1 - H317	
m-PHENYLENEBIS(METHYLAMINE)	5-10%
CAS number: 1477-55-0	
Classification	
Acute Tox. 4 - H302	
Acute Tox. 4 - H332	
Skin Corr. 1C - H314	
Eye Dam. 1 - H318	
Skin Sens. 1 - H317	
Not relevant.	

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SALICYLIC ACID	5-10%
CAS number: 69-72-7	
Classification	
Acute Tox. 4 - H302	
Eye Dam. 1 - H318	
Repr. 2 - H361d	
3,6-DIAZAOCTANEETHYLENEDIAMINE	1-5%
CAS number: 112-24-3	
Classification	
Acute Tox. 4 - H312	
Skin Corr. 1B - H314	
Eye Dam. 1 - H318	
Skin Sens. 1 - H317	
Not relevant.	
TRIS-2,4,6-(DIMETHYLAMINOMETHYL)PHENOL	1-5%
CAS number: 90-72-2	
Classification	
Acute Tox. 4 - H302	
Skin Irrit. 2 - H315	
Eye Irrit. 2A - H319	
2-PIPERAZIN-1-YLETHYLAMINE	<1%
CAS number: 140-31-8	
Classification	
Acute Tox. 4 - H302	
Acute Tox. 3 - H311	
Skin Corr. 1B - H314	
Eye Dam. 1 - H318	
Skin Sens. 1 - H317	
Repr. 2 - H361	
STOT RE 1 - H372	
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	Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

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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.

Most important symptoms and effects, both acute and delayed

Inhalation	Vapors irritate the respiratory system.
Ingestion	May cause chemical burns in mouth and throat.
Skin contact	Chemical burns. Mild dermatitis, allergic skin rash.
Eye contact	May cause 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

Hazardous combustion products	Burning produces irritating, toxic and obnoxious fumes. Nitrous gases (NOx). Carbon monoxide, carbon dioxide, and unknown hydrocarbons.
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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	Do not discharge into drains or watercourses or onto the ground.
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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.
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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	Avoid contact with skin, eyes and clothing. Do not breathe gas, fume, vapours or spray. Wash hands thoroughly after handling. Use only in well-ventilated areas. Keep container tightly sealed when not in use.
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Conditions for safe storage, including any incompatibilities

Storage precautions	Store in tightly-closed, original container in a dry, cool and well-ventilated place.
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Specific end uses(s)

Specific end use(s) Adhesive. Sealant.

8. Exposure controls/Personal protection

Control parameters

Occupational exposure limits

m-PHENYLENEBIS(METHYLAMINE)

Ceiling exposure limit: ACGIH 0.1 mg/m³

Sk

ACGIH = American Conference of Governmental Industrial Hygienists.

Sk = Danger of cutaneous absorption.

Exposure controls

Appropriate engineering controls	Provide adequate general and local exhaust ventilation.
Eye/face protection	The following protection should be worn: Chemical splash goggles or face shield.
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. Use appropriate skin cream to prevent drying of skin. Do not eat, drink or smoke when using this product.
Respiratory protection	No specific recommendations. Respiratory protection may be required if excessive airborne contamination occurs.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Paste.
Color	Yellow.
Odor	Amine.
Odor threshold	Not determined.
pH	Not determined.
Melting point	Not determined.
Initial boiling point and range	Not determined.
Flash point	>100°C
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not available.
Vapor pressure	Not determined.
Vapor density	Not determined.
Relative density	Amine. 1.1

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Solubility(ies)	Slightly soluble in water. Soluble in the following materials: Organic solvents.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not determined.
Viscosity	~50000 cP @ 23°C
Explosive properties	Not determined.
Oxidizing properties	Not applicable.
Other information	Not relevant.
Volatile organic compound	<2 %, 20 grams/liter (Estimated)

10. Stability and reactivity

Reactivity	There are no known reactivity hazards associated with this product.
Stability	Stable at normal ambient temperatures.
Possibility of hazardous reactions	Reactions with the following materials may generate heat: Epoxy Resin
Conditions to avoid	Avoid excessive heat for prolonged periods of time.
Materials to avoid	Avoid contact with the following materials: Acids. 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.
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Corrosive to skin.
<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.
<u>Carcinogenicity</u>	
Carcinogenicity	Does not contain any substances known to be carcinogenic.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Suspected of damaging fertility.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Based on available data the classification criteria are not met.

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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

Unlikely to be hazardous by inhalation because of the low vapor pressure of the product at ambient temperature. Gas or vapor in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Coughing.

Ingestion

Causes burns. May cause chemical burns in mouth and throat. May cause stomach pain or vomiting.

Skin Contact

This product is strongly irritating. Prolonged contact may cause burns.

Eye contact

Causes serious eye damage.

Route of exposure

Ingestion Skin and/or eye contact

Toxicological information on ingredients.

ATBN POLYMER

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 15,400.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 3,000.0

Species Rabbit

Acute toxicity - inhalation

Notes (inhalation LC₅₀) No specific test data are available.

Skin corrosion/irritation

Skin corrosion/irritation Moderately irritating. Rabbit

Serious eye damage/irritation

Serious eye damage/irritation Slightly irritating. Rabbit

Skin sensitization

Skin sensitization Sensitizing. Guinea pig

Germ cell mutagenicity

Genotoxicity - in vitro No specific test data are available.

Carcinogenicity

Carcinogenicity No specific test data are available.

Reproductive toxicity

Reproductive toxicity - fertility No specific test data are available.

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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 No information available.

Aspiration hazard

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

m-PHENYLENEBIS(METHYLAMINE)

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 930.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 3,100.0

Species Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ 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.

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Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

SALICYLIC ACID

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 891.0

Species Rat

Acute toxicity - dermal

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

Species Rat

Skin corrosion/irritation

Animal data Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation Highly irritating.

Skin sensitization

Skin sensitization Not sensitizing.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative.

Genotoxicity - in vivo DNA damage and/or repair: Negative.

Carcinogenicity

Carcinogenicity Read-across data. NOAEL 500 mg/kg/day, Oral, Rat

Reproductive toxicity

Reproductive toxicity - fertility Read-across data. Three-generation study - NOAEL 75 mg/kg/day, Oral, Rat F2

Reproductive toxicity - development Developmental toxicity: - NOAEL: 75 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 Read-across data. NOAEL 45.4 mg/kg/day, Oral, Rat NOAEC 635 mg/m³, Inhalation, Rat

Aspiration hazard

Aspiration hazard No information available.

3,6-DIAZAOCTANEETHYLENEDIAMINE

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Acute toxicity - inhalation

Notes (inhalation LC₅₀) No information available.

Skin corrosion/irritation

Animal data Corrosive.

Serious eye damage/irritation

Serious eye damage/irritation Corrosive

Skin sensitization

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

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Positive. DNA damage and/or repair: Negative.

Genotoxicity - in vivo Chromosome aberration: Negative.

Carcinogenicity

Carcinogenicity Negative.

Reproductive toxicity

Reproductive toxicity - development Developmental toxicity: - NOAEL: 750 mg/kg, , Rat Developmental toxicity: - NOAEL: 125 mg/kg, , Rabbit

Specific target organ toxicity - single exposure

STOT - single exposure NOAEL 50 mg/kg/day, Oral,

Target organs Respiratory system, lungs

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

TRIS-2,4,6-(DIMETHYLAMINOMETHYL)PHENOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,169.0

Species Rat

Acute toxicity - inhalation

Notes (inhalation LC₅₀) No information available.

Skin corrosion/irritation

Skin corrosion/irritation Method: OECD 404, Rabbit Corrosive

Serious eye damage/irritation

Serious eye damage/irritation Rabbit Causes serious eye irritation.

Skin sensitization

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Skin sensitization Guinea pig maximization test (GPMT) - Guinea pig: Mild dermatitis, allergic skin rash.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative.

Genotoxicity - in vivo No information available.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility Screening - NOAEL 15 mg/kg/day, Oral, Rat F1

Reproductive toxicity - development Developmental toxicity: - NOAEL: >150 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.

Aspiration hazard

Aspiration hazard No information available.

2-PIPERAZIN-1-YLETHYLAMINE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 1,500.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 866.0

Species Rabbit

Acute toxicity - inhalation

Notes (inhalation LC₅₀) No information available.

Skin corrosion/irritation

Animal data Severe skin irritation. Rabbit

Serious eye damage/irritation

Serious eye damage/irritation Highly irritating. Rabbit

Skin sensitization

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

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative.

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Genotoxicity - in vivo	Chromosome aberration: Negative.
<u>Carcinogenicity</u>	
Carcinogenicity	No information available.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Screening - NOAEC 8000 mg/l, Oral, Rat P
Reproductive toxicity - development	Developmental toxicity: - NOAEL: 75 mg/kg/day, Oral, Rabbit
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	No information available.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	No information available.
<u>Aspiration hazard</u>	
Aspiration hazard	No information available.

12. Ecological information

Toxicity There are no data on the ecotoxicity of this product.

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/Provincial and local regulations. Refer to section 8 before handling.

14. Transport information

UN Number

UN No. (IMDG) 2735

UN No. (ICAO) 2735

UN No. (DOT) UN2735

UN proper shipping name

Proper shipping name (IMDG) POLYAMINES, LIQUID, CORROSIVE, N.O.S (contains 2,4,6-Tris(dimethylaminomethyl)phenol

Proper shipping name (ICAO) POLYAMINES, LIQUID, CORROSIVE, N.O.S (contains 2,4,6-Tris(dimethylaminomethyl)phenol

Proper shipping name (DOT) POLYAMINES, LIQUID, CORROSIVE, N.O.S. (contains 2,4,6-Tris(dimethylaminomethyl)phenol

Transport hazard class(es)

DOT hazard class 8

DOT hazard label 8

IMDG Class 8

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ICAO class/division 8

Transport labels



DOT transport labels



Packing group

IMDG packing group III

ICAO packing group III

DOT packing group III

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)

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

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16. Other information

Classification abbreviations and acronyms	Eye Dam. = Serious eye damage Skin Corr. = Skin corrosion Skin Sens. = Skin sensitisation
Revision date	4/24/2020
Revision	2
Supersedes date	6/27/2019
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. H361 Suspected of damaging fertility or the unborn child. H361d Suspected of damaging the unborn child. H372 Causes 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.