



SAFETY DATA SHEET

Permabond ET5428B

1. Identification

Product identifier

Product name Permabond ET5428B

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. 1A - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317

Environmental hazards Not Classified

Label elements

Pictogram



Signal word Danger

Hazard statements H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.

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Precautionary statements

P260 Do not breathe vapor/ spray.
 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.
 P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
 P302+P352 If on skin: Wash with plenty of water.
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 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.
 P310 Immediately call a poison center/ doctor.
 P321 Specific treatment (see medical advice on this label).
 P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P363 Wash contaminated clothing before reuse.
 P405 Store locked up.
 P501 Dispose of contents/ container in accordance with national regulations.

Contains

3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE), 2,4,6-
 TRIS(DIMETHYLAMINOMETHYL)PHENOL, BIS[(DIMETHYLAMINO)METHYL]PHENOL

3. Composition/information on ingredients

Mixtures

3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE) CAS number: 4246-51-9	30-60%
Classification Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317	
CALCIUM NITRATE TETRAHYDRATE CAS number: 13477-34-4	5-10%
Classification Ox. Sol. 2 - H272 Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 STOT SE 3 - H335	
2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL CAS number: 90-72-2	5-10%
Classification Skin Corr. 1A - H314 Skin Sens. 1 - H317	

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BIS[(DIMETHYLAMINO)METHYL]PHENOL CAS number: 71074-89-0 IMPURITY	1-5%
Classification Skin Corr. 1B - H314 Eye Dam. 1 - H318	

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.
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

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.

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

Specific hazards	In case of fire, keep containers cool with water spray. Closed containers may rupture (due to buildup of pressure) when exposed to extreme heat.
Hazardous combustion products	Burning produces irritating, toxic and obnoxious fumes. Nitrous gases (NOx). 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

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Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet.

Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground.

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 gas, fume, vapours or spray. Wash hands thoroughly after handling. Use only in well-ventilated areas. 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. Sealant.

8. Exposure Controls/personal protection

Ingredient comments No exposure limits known for ingredient(s).

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 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. When using do not eat, drink or smoke.

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 Cream. or Black.

Odor Amine.

Odor threshold Not determined.

pH Not determined.

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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	1.1
Solubility(ies)	Slightly soluble in water. Soluble in the following materials: Organic solvents.
Partition coefficient	Not available.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not determined.
Viscosity	≈1100000 mPa s @ 23°C Thixotropic
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	Causes burns.

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Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye damage.

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.

Carcinogenicity

Carcinogenicity Does not contain any substances known to be carcinogenic.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development Based on available data the classification criteria are not met.

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 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.

Acute and chronic health hazards This product is strongly irritating. Causes burns. May cause chemical eye burns.

Route of exposure Skin and/or eye contact

Toxicological information on ingredients.

3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE)

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 3,160.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 2,150.0

Species Rat

Acute toxicity - inhalation

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Notes (inhalation LC ₅₀)	No information available.
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Corrosive to skin.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Highly irritating.
<u>Skin sensitization</u>	
Skin sensitization	No information available.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Bacterial reverse mutation test: Negative.
<u>Carcinogenicity</u>	
Carcinogenicity	No information available.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Screening - NOAEL 600 mg/kg/day, Oral, Rat P
<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.

CALCIUM NITRATE TETRAHYDRATE

<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD ₅₀ mg/kg)	3,900.0
Species	Rat
<u>2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL</u>	
<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD ₅₀ mg/kg)	2,169.0
Species	Rat
<u>Acute toxicity - dermal</u>	
Acute toxicity dermal (LD ₅₀ mg/kg)	1,280.0
Species	Rat
<u>Acute toxicity - inhalation</u>	
Notes (inhalation LC ₅₀)	No information available.
<u>Skin corrosion/irritation</u>	

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Animal data Method: OECD 404, Rabbit Corrosive.

Serious eye damage/irritation

Serious eye damage/irritation Irritating to eyes. Risk of serious damage to eyes.

Skin sensitization

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

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative.

Carcinogenicity

Carcinogenicity Not 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 Not available.

12. Ecological Information

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

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

UN Number

UN No. (IMDG) 2735

UN No. (ICAO) 2735

UN No. (DOT) UN2735

UN proper shipping name

Polyamines, liquid, corrosive, n.o.s. (contains 3,3'-Oxybis(ethyleneoxy)bis(propylamine))

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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

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

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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 Corr. = Skin corrosion Skin Sens. = Skin sensitisation
Revision date	8/3/2018
Revision	3
Supersedes date	6/9/2015
Hazard statements in full	H272 May intensify fire; oxidizer. 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.

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.