

Permabond®

Engineering Adhesives

SAFETY DATA SHEET

Permabond 4C20

1. Identification

Product identifier

Product name Permabond 4C20

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 Flam. Liq. 4 - H227

Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 STOT SE 3 - H335

Label elements

Pictogram



Signal word Warning

Hazard statements H227 Combustible liquid.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

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Precautionary statements	<p>P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.</p> <p>P261 Avoid breathing vapor/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P271 Use only outdoors or in a well-ventilated area.</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>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>P312 Call a poison center/ doctor if you feel unwell.</p> <p>P321 Specific treatment (see medical advice on this label).</p> <p>P332+P313 If skin irritation 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>P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P403+P235 Store in a well-ventilated place. Keep cool.</p> <p>P405 Store locked up.</p> <p>Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.</p>
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Contains ETHYL 2-CYANOACRYLATE

Other hazards

None under normal conditions.

3. Composition/information on ingredients

Mixtures

ETHYL 2-CYANOACRYLATE	60-100%
CAS number: 7085-85-0	
Classification	
Flam. Liq. 4 - H227	
Skin Irrit. 2 - H315	
Eye Irrit. 2A - H319	
STOT SE 3 - H335	

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 to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If symptoms develop and persist, get medical attention.
Ingestion	On contact, immediate bonding of mouth could occur. Do not induce vomiting. Get medical attention.
Skin Contact	On contact, immediate bonding of the skin will occur. No attempt should be made to remove material from skin or to remove contaminated clothing, as the bonded skin can be easily torn. Wash skin thoroughly with soap and water.

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Eye contact Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. If adhesive bonding occurs, do not force eyelids apart. Apply a pad soaked in warm water and allow the eyelids to separate. Get medical attention. Cured adhesive will not bond well to surface of eye, but corneal damage from abrasion may result.

Most important symptoms and effects, both acute and delayed

Inhalation Irritation of nose, throat and airway.

Ingestion On contact, immediate bonding of mouth could occur.

Skin contact Prolonged skin contact may cause redness and irritation.

Eye contact Irritating and may cause redness and pain.

Indication of immediate medical attention and special treatment needed

Notes for the doctor SKIN BONDING. Prise the skin apart slowly working from the edge of the bonded area. This can be eased by using warm soapy water. EYE BONDING. DO NOT force eyelids apart. Apply a pad soaked in warm water and allow the eye to separate itself.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media Extinguish with foam, carbon dioxide, dry powder or water fog.

Special hazards arising from the substance or mixture

Specific hazards Cloths used to wipe up spills may cause rapid polymerization that could generate sufficient heat to ignite the cloth.

Hazardous combustion products Trace amounts of toxic and/or irritating organic vapors may be generated. The use of breathing apparatus is recommended.

Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or 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 For personal protection, see Section 8. Provide adequate ventilation.

Environmental precautions

Environmental precautions Ventilate area. Prevent product from entering drains or waterways.

Methods and material for containment and cleaning up

Methods for cleaning up Small spills: wipe up with cloth. Immediately soak cloth with water to polymerize the adhesive. Caution! Cloth containing adhesive may undergo autoignition if not soaked with water Large spills: flood area with water. When cured, remove film with a scraper.

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

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Usage precautions Ensure adequate ventilation of the working area. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep away from fabric and paper goods. Contact with these materials may cause rapid polymerization which can generate smoke and strong irritating vapors and cause thermal burns.

Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry and cool place. Keep away from heat, sparks and open flame. Keep container closed when not in use.

Specific end uses(s)

Specific end use(s) Adhesive.

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

ETHYL 2-CYANOACRYLATE

Long-term exposure limit (8-hour TWA): ACGIH 0.2 ppm 1 mg/m³

ACGIH = American Conference of Governmental Industrial Hygienists.

Exposure controls

Appropriate engineering controls Use positive down draft exhaust ventilation if general ventilation is insufficient to maintain vapor concentrations below established exposure limits.

Eye/face protection Wear approved safety goggles. Use 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 Uniforms, coveralls, or a lab coat should be worn

Respiratory protection No specific recommendations. Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Color	Clear.
Odor	Pungent. Irritating.
Odor threshold	1 - 2 ppm
pH	Not applicable.
Melting point	Not applicable.
Initial boiling point and range	>149°C (300°F)
Flash point	80°C – 93°C (176°F - 199.94°F)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not available.
Vapor pressure	~0.6 mbar @ 25°C
Vapor density	Not applicable.

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Relative density	1.1 @ 25°C
Bulk density	Not applicable.
Solubility(ies)	Hardens in contact with water. Insoluble in water. Miscible with the following materials: acetone
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Oxidizing properties	Not applicable.
Volatile organic compound	<2 %, 20 grams/liter (Estimated)

10. Stability and reactivity

Reactivity	The product reacts with water and will generate heat.
Stability	Stable at normal ambient temperatures and when used as recommended.
Possibility of hazardous reactions	Reactions with the following materials may generate heat: Water Alcohols. Alkalis. Amines.
Conditions to avoid	Do not add water directly to the product. It may cause a violent reaction.
Materials to avoid	Water. Amines. Alkalis. Alcohols.
Hazardous decomposition products	Toxic/Irritating fumes

11. Toxicological information

Information on toxicological effects

Toxicological effects	The toxicological properties of this product have not been fully evaluated. Avoid direct contact with skin or eyes. Do not ingest or inhale.
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Irritating to skin.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Causes serious eye irritation.
<u>Respiratory sensitization</u>	
Respiratory sensitization	Based on available data the classification criteria are not met.
<u>Skin sensitization</u>	
Skin sensitization	Based on available data the classification criteria are not met.
<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	Based on available data the classification criteria are not met.

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

Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 3 - H335

Target organs Respiratory system, lungs

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after a single exposure.

Aspiration hazard

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

Inhalation May cause respiratory system irritation.

Ingestion On contact, immediate bonding of mouth could occur.

Skin Contact On contact, immediate bonding of the skin will occur. May cause skin irritation.

Eye contact Irritating to eyes. On contact, will bond eyelids together. Vapours are lachrymatory.

Route of exposure Ingestion Inhalation Skin and/or eye contact

Target Organs Respiratory system, lungs

Toxicological information on ingredients.

ETHYL 2-CYANOACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0

Species Rat

ATE oral (mg/kg) 5,000.0

Acute toxicity - dermal

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

Species Rabbit

ATE dermal (mg/kg) 2,000.1

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Not available.

Skin corrosion/irritation

Animal data Dose: 0.5g, 24 hours, Rabbit Slightly irritating.

Serious eye damage/irritation

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

Skin sensitization

Skin sensitization - Guinea pig: Not sensitizing.

Germ cell mutagenicity

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Genotoxicity - in vitro	Gene mutation: Negative. Chromosome aberration: Negative. Bacterial reverse mutation test: Negative.
<u>Carcinogenicity</u>	
Carcinogenicity	No evidence of carcinogenicity in animal studies.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Technically not feasible.
Reproductive toxicity - development	Technically not feasible.
<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	Not available.

12. Ecological Information

Ecotoxicity 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

Sea transport notes Not classified.

Air transport notes Applies only to inner containers > 500ml. Inner packaging containing less than 500ml are unregulated for air transportation and may be shipped unrestricted. But inner packages containing more than 500ml meet the criteria of IATA 3.9.2.1 and are regulated. The "inner package" is the individual bottle, tube or drum, not the outer packaging such as a fiberboard box or carton containing many bottles.
Permabond 3g, 20gr, 1 ounce (28.4 gr), 1 pound (454gr) and 500ml, are not restricted for air transportation.

DOT transport notes This product is not regulated for road transportation in accordance with 49 CFR Exceptions. Please note that Cyanoacrylates are not restricted for domestic ground transportation in non bulk containers (The DOT defines a bulk container as a "Package" containing more than 450 liters. The "Package" is the individual bottle, tube or drum, not a carton containing many bottles

UN Number

UN No. (IMDG) Not applicable

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UN No. (ICAO) 3334

UN No. (DOT) NA1993

UN proper shipping name

Proper shipping name (IMDG) Not applicable

Proper shipping name (ICAO) AVIATION REGULATED LIQUID, N.O.S (Cyanoacrylate ester)

Proper shipping name (DOT) COMBUSTIBLE LIQUID, N.O.S. (Cyanoacrylate ester)

Transport hazard class(es)

DOT hazard class Combustible Liquid

IMDG Class Not applicable

ICAO class/division 9

Packing group

IMDG packing group Not applicable

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 de minimis.

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
Fire
Reactivity

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.

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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 Flam. Liq. = Flammable liquid Skin Irrit. = Skin irritation STOT SE = Specific target organ toxicity-single exposure
Revision date	1/25/2018
Revision	3
Supersedes date	5/5/2015
Hazard statements in full	H227 Combustible liquid. H315 Causes skin irritation. 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.