

SAFETY DATA SHEETS

This SDS packet was issued with item:

076708606

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

076708226

The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).

076708598

Safety Data Sheet

PERMABOND 102

Revision Number: 2

Issue date: 05/05/15

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: PERMABOND 102
Product Type: Cyanoacrylate

Telephone: 732-868-1372 or 800-640-7599
Website: www.permabond.com

Company: PERMABOND LLC
14 Robinson Street
Pottstown, PA 19464
USA

Emergency Telephone:

Medical: Poison Control Center 866-827-6282 (toll free)
or 1-303-389-1109
Transport: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

WARNING: BONDS SKIN ON CONTACT
MAY CAUSE SKIN IRRITATION
CAUSES EYE IRRITATION
MAY CAUSE RESPIRATORY TRACT IRRITATION
COMBUSTIBLE LIQUID

| HAZARD CLASS | HAZARD CATEGORY |
|---|-----------------|
| FLAMMABLE LIQUID | 4 |
| EYE IRRITATION | 2B |
| SKIN IRRITATION | 2 |
| SPECIFIC TARGET ORGAN TOXICITY- SINGLE EXPOSURE- RESPIRATORY SYSTEM | 3 |

PICTOGRAM(S)



Precautionary Statements

Prevention:

Keep away from heat, sparks, open flames, hot surfaces – No smoking. Avoid breathing vapors, mist or spray. Wash thoroughly after handling. Use outdoors or in a well-ventilated area. Wear protective gloves, eye protection and face protection.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with plenty of water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF ON SKIN: Rinse with plenty of soap and water.
If you feel unwell call a poison control center or a physician. If eye irritation occurs: Get medical attention. If skin irritation occurs: Get medical attention. In case of fire: Use foam, dry chemical or carbon dioxide to extinguish.

Storage:

Store in a well-ventilated cool place. Keep container tightly closed. Store locked up.

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).

Disposal: Dispose of according to Federal, State/Provincial and local governmental regulations.

Existing conditions aggravated by exposure: Skin, eye and respiratory disorders.

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Hazardous components | CAS NUMBER | CONCENTRATION (%)* |
|-----------------------|------------|--------------------|
| Ethyl 2-cyanoacrylate | 7085-85-0 | 60 – 100 |

*Exact concentration is a trade secret. Concentration ranges are provided to assist user in determining appropriate protection.

4. FIRST AID MEASURES

| | |
|----------------------------|--|
| Inhalation: | Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms persist, get medical attention. |
| Skin contact: | On contact, immediate bonding of skin will occur. Do not pull bonded skin apart as bonded skin can be easily torn. Soak in warm soapy water while flexing bonded skin followed by gently peeling skin apart. If skin is burnt due to the heat generated during the rapid polymerization of a large drop, seek medical attention. If lips are bonded apply warm water to the lips and encourage the use of saliva to wet the interior. Gently peel or roll the lips apart. Do not use direct opposing force to peel the lips apart. |
| Eye contact: | Immediately flush with large amounts of water for at least 15 minutes. Get medical attention. If eyes are bonded closed, apply warm water using a wet pad to release eyelashes. Do not force eye open. Cyanoacrylates will cause a lachrymatory effect which will help to debond the adhesive. Keep the eye covered until debonding is completed usually 1- 3 days. Get medical attention to make sure cured adhesive is not trapped behind eyelid. |
| Ingestion: | Keep individual calm. Make sure breathing passage ways not obstructed. The product will polymerize almost instantaneously bonding the mouth making it almost impossible to swallow. Saliva will debond and separate any cured material in several hours. Prevent patient from swallowing any separated cure material. Get medical attention. |
| Symptoms: | See section 11 |
| Notes to Physician: | Surgery is not necessary to separate accidentally bonded tissues. Experience has shown that bonded tissues are best treated by passive non-surgical first aid. If rapid curing has caused thermal burn they should be treated symptomatically after adhesive is removed. |

5. FIRE-FIGHTING MEASURES

| | |
|---|--|
| Extinguishing media: | Foam, water spray or fog, dry chemical or carbon dioxide. |
| Special fire fighting procedures: | Fire fighter should wear positive pressure self-contained breathing apparatus. |
| Unusual fire or explosion hazards: | None |
| Hazardous combustion products: | Trace amount of toxic and/or irritating organic vapors may be generated. The use a breathing apparatus is recommended. |

6. ACCIDENTAL RELEASE MEASURES

Use personal protection equipment recommended in section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

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

Clean-up methods: Do not use cloths to mop spills. Flood area with plenty of water to insure complete polymerization. When cured scrape off the floor for disposal. Cured material can be disposed of as non-hazardous waste. Refer to section 8 (Exposure Controls/ Personal Protection) before clean up.

7. HANDLING AND STORAGE

Handling: 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.

Storage: Store away from heat, sparks, flames, or other sources of ignition.

For shelf life information contact Permabond customer service at (800)714-0170

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employees should complete an assessment of all workplaces to determine the need for and selection of proper exposure controls and protective equipment before each task is started.

| Hazardous components | ACGIH TLV | OSHA PEL | AIHA WEEL | OTHER |
|-----------------------|-------------|----------|-----------|-------|
| Ethyl 2-cyanoacrylate | 0.2 ppm TWA | None | None | None |

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

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Skin protection: Use nitrile gloves and protective clothing as necessary to prevent skin contact. Do not use PVC, nylon, cloth or cotton gloves

Eye/face protection: Safety goggles or safety glasses with side shields or face shield

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|----------------------------------|
| Physical state: | Liquid |
| Color: | Clear |
| Odor: | Sharp irritating |
| Odor threshold: | Not Available |
| pH: | Not applicable |
| Vapor pressure: | <0.3 mm Hg |
| Boiling point/range: | >149°C (300°F) |
| Melting point/range: | Not determined |
| Specific gravity: | 1.05 at 23.9°C (75°F) |
| Vapor density: | Approximately 3 |
| Flash point: | 80°C – 93°C (176°F - 199.94°F) |
| Flammable/Explosive limits – Lower: | Not determined |
| Flammable/Explosive limits – upper: | Not determined |
| Autoignition Temperature: | 485°C (905°F) |
| Evaporation rate: | Not available |
| Solubility in water: | Polymerizes in water |
| Partition coefficient (n-octanol/water): | Not applicable |
| Decomposition temperature: | Not available |
| VOC content: | <2 %, 20 grams/liter (Estimated) |

10. STABILITY AND REACTIVITY

| | |
|--|--|
| Stability: | Stable when stored under the recommended storage conditions |
| Hazardous reactions: | Rapid exothermic reaction will occur in the presence of water, amines, alkalis and alcohols. |
| Hazardous decomposition products: | Upon heating may decompose to release toxic fumes of nitrogen oxides, carbon monoxide and carbon dioxide |
| Incompatible materials: | Water, amines, alkalis and alcohols. |
| Conditions to avoid: | Contact with incompatible materials which may cause spontaneous polymerization |

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

Inhalation: Exposure to vapors above the exposure limits causes irritation to the respiratory tract, which may lead to difficulty of breathing and tightness of chest.

Skin contact: Bonds skin in seconds. May cause skin irritation. Cyanoacrylates have been reported to cause skin allergic reaction but due to the rapid polymerization upon skin contact, an allergic reaction is rare.

Eye contact: Irritating to eyes. May cause excessive tearing. On contact, will bond eyelids.

Ingestion: Not expected to be harmful by ingestion. On contact, immediate bonding of the mouth may occur. It is almost impossible to swallow.

Existing conditions aggravated by exposure: Skin, eye and respiratory disorders.

| Hazardous components | LD50 | LC50 | Immediate and delayed Health Effects |
|-----------------------|---|------|--------------------------------------|
| Ethyl 2-cyanoacrylate | Acute oral toxicity (mg/Kg): 5000 Rat Acute Dermal Toxicity (mg/Kg): 2000 Rabbit | None | Allergen, Irritant |

| Hazardous components | NTP Carcinogen | IARC Carcinogen | OSHA Carcinogen |
|-----------------------|----------------|-----------------|-----------------|
| Ethyl 2-cyanoacrylate | No | No | No |

12. ECOLOGICAL INFORMATION

Ecological information: Not Available

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State/Provincial and local governmental regulations. Refer to section 8 (Exposure Controls/Personal Protection) before handling.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR):

| | |
|---------------------------|---|
| Proper shipping name: | Combustible liquid, n.o.s (cyanoacrylate ester) |
| Hazard class or division: | Combustible liquid |
| Identification number: | NA 1993 |
| Packing group: | III |
| Exceptions: | Unrestricted, (Not more than 450 L) |

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.

International Air Transportation (ICAO/IATA):

| | |
|---------------------------|--|
| Proper shipping name: | Aviation regulated liquid, n.o.s. (Cyanoacrylate ester) |
| Hazard class or division: | 9 |
| Identification number: | UN 3334 |
| Packing group: | III |
| Exceptions: | Inner packaging containing less than 500ml are unregulated by this mode of transportation and may be shipped unrestricted. |

Please note that Cyanoacrylates are restricted for air transportation in inner packages containing more than 500ml. 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.

Water Transportation (IMO/IMDG):

| | |
|---------------------------|--------------|
| Proper shipping name: | Unrestricted |
| Hazard class or division: | None |
| Identification number: | None |
| Packing group: | None |
| Marine pollutant: | None |

15. REGULATORY INFORMATION

United States Regulatory Information

| | |
|----------------------------------|---|
| TSCA 8 (b) Inventory Status: | All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory. |
| TSCA 12 (b) Export Notification: | None above the reporting limits. |
| CERCLA/SARA Section 302 EHS: | None above the reporting limits. |
| CERCLA/SARA Section 311/312: | Immediate Health, Delayed Health, Fire, Reactive |
| CERCLA/SARA 313: | None above the reporting limits. |
| California Proposition 65: | No chemical listed on the California Proposition 65 are known to be present. |

Canada Regulatory Information

| | |
|----------------------|--|
| CEPA DSL/NDL Status: | All components are listed on or are exempt from listing on the Domestic Substances List. |
|----------------------|--|

16. OTHER INFORMATION

This safety data sheet contains changes from the previous one: New format

Issue date: 05/05/15

ADDITIONAL INFORMATION: The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

MSDS
Material Safety Data Sheet
PERMABOND® 102



READ MATERIAL SAFETY DATA SHEET BEFORE HANDLING PRODUCT!

Issue Date 02/11/05

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER

PRODUCT NAME

Manufacturer

PERMABOND® 102

PERMABOND LLC

20 World's Fair Drive

Somerset, NJ 08873

EMERGENCY PHONES:

MEDICAL – 1-866-827-6282

TRANSPORT - (CHEMTREC) – 1-800-424-9300

MSDS REQUESTS: HELP LINE: 1-800-640-7599

SYNONYMS

SUPER GLUE

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL FAMILY

Cyanoacrylate Adhesive

COMPONENT

CAS NUMBER

CONCENTRATION (%)

Ethyl cyanoacrylate

7085-85-0

60 - 100

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING.

ON CONTACT, WILL BOND EYELIDS TOGETHER
SKIN IRRITANT. ON CONTACT WILL BOND SKIN
Colorless Liquid Pungent odor

EYE

On contact, will bond eyelids together.

SKIN CONTACT

Repeated or prolonged skin contact may result in moderate irritation. On contact, immediate bonding of the skin will occur.

INHALATION

Vapor may be irritant to the respiratory tract.

INGESTION

On contact, immediate bonding of mouth could occur.

4. FIRST-AID MEASURES

EYE

Flush with large amounts of water while holding eyelids open. Get medical attention immediately. Cured adhesive will not bond well to surface of eye, but corneal damage from abrasion may result. Do not wear contact lenses when working with this material.

SKIN CONTACT

No attempt should be made to remove material from skin or to remove contaminated clothing, as the bonded skin can be easily torn. Wash with large volumes of soap and water while flexing bonded skin parts. This procedure will slowly release bonded areas. DO NOT mechanically remove cured adhesive or attempt to pull skin apart.

INHALATION

Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention.

INGESTION

Immediate bonding of mouth will occur. Get medical attention.

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Issue Date 02/11/05

5. FIREFIGHTING MEASURES

| | |
|---------------------------------|---|
| FLASH POINT | 167 °F (Setaflash Closed Tester) |
| EXTINGUISHING MEDIA | CO2; Dry Chemical; Foam |
| SPECIAL FIREFIGHTING PROCEDURES | Fire fighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. |
| FIRE & EXPLOSION HAZARDS | Cloths used to wipe up spills may cause rapid polymerization that could generate sufficient heat to ignite the cloth. |
| FLAMMABILITY HAZARD CLASS | Combustion will evolve toxic and irritant vapors. 2 = Moderate. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|---------------------------|--|
| SPILL AND LEAK PROCEDURES | 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. Wear NIOSH approved respirator for organic vapors if needed, and protective clothing. |
|---------------------------|--|

For safety and environmental precautions, please review entire Material Safety Data Sheet for necessary information.

7. HANDLING AND STORAGE

| | |
|---------------------|---|
| STORAGE TEMPERATURE | = 35 - 45 °F = 2 - 7 °C |
| HANDLING/STORAGE | Keep away from heat, sources of ignition and direct sunlight. Keep material refrigerated at the storage temperature referenced above. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | |
|-----------------------------|--|-------------------------------------|
| COMPONENT | EXPOSURE LIMITS | |
| Ethyl cyanoacrylate | ACGIH-TWA: 0.2 ppm | OSHA-PEL: 2 ppm OSHA-STEL: 4 ppm |
| VENTILATION REQUIREMENTS | Local. | |
| EYE PROTECTION REQUIREMENTS | Safety glasses, goggles or face shield to protect against splashing. | |
| GLOVE REQUIREMENTS | Wear polyethylene gloves. Do not wear rubber or cloth gloves. | |
| CLOTHING REQUIREMENTS | No special clothing required for low volume activity. | |
| WASH REQUIREMENTS | Wash before eating, drinking, or using toilet facilities. | |
| RESPIRATOR REQUIREMENTS | Avoid prolonged or repeated breathing of vapor or mists. If exposure may or does exceed occupational exposure limits, use a NIOSH approved respirator to prevent overexposure. | |

MSDS
Material Safety Data Sheet
PERMABOND® 102



READ MATERIAL SAFETY DATA SHEET BEFORE HANDLING PRODUCT!

Issue Date 02/11/05

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|----------------------------|----------------------------------|
| PURE SUBSTANCE OR MIXTURE | Mixture |
| PHYSICAL FORM | Liquid |
| COLOR | Colorless |
| ODOR | Pungent |
| PH AS IS | Not applicable |
| pH IN (1%) SOLUTION | Not applicable |
| OXIDIZING PROPERTIES | Not applicable |
| BOILING POINT | 1403 °F |
| MELTING/FREEZING POINT | Not available |
| SOLUBILITY IN WATER | Insoluble |
| VISCOSITY | 100 cPs |
| SPECIFIC GRAVITY (WATER=1) | 1.05 |
| BULK DENSITY | 8.75 lb/gal |
| VAPOR PRESSURE (mmHg) | 0.3 |
| VAPOR DENSITY (air = 1) | >1 |
| VOLATILES | Nil |
| VOLATILE ORGANIC COMPOUNDS | Nil |
| FLASH POINT | 167 °F (Setaflash Closed Tester) |

10. STABILITY AND REACTIVITY

| | |
|----------------------------------|--|
| STABILITY | Stable |
| REACTIVITY HAZARD CLASS | 2 = Reactive material. |
| HAZARDOUS DECOMPOSITION PRODUCTS | Decomposes upon heating to release toxic fumes of nitrogen oxides, carbon monoxide and carbon dioxide. |

11. TOXICOLOGICAL INFORMATION

| | |
|----------------|--|
| ROUTE OF ENTRY | Inhalation; Skin Contact; Eye Contact; Ingestion |
|----------------|--|

CHRONIC (LONG TERM) EFFECTS OF EXPOSURE

| | |
|---------------|--------------------------------|
| TARGET ORGANS | Skin; Eyes; Respiratory system |
| CARCINOGEN | No. |

| COMPONENT | ORAL TOXICITY | NOTES ON ORAL TOXICITY |
|---------------------|--------------------------|---|
| Ethyl cyanoacrylate | Oral LD50: Rat 180 mg/kg | Ingestion may cause irritation of the gastrointestinal tract. On contact, immediate bonding of mouth could occur. |

| COMPONENT | DERMAL TOXICITY | NOTES ON DERMAL TOXICITY |
|---------------------|-------------------------------|---|
| Ethyl cyanoacrylate | Dermal LD50: Rabbit 220 ml/kg | Irritating to the skin. On contact, immediate bonding of the skin will occur. |

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Material Safety Data Sheet
PERMABOND® 102



READ MATERIAL SAFETY DATA SHEET BEFORE HANDLING PRODUCT!

Issue Date 02/11/05

11. TOXICOLOGICAL INFORMATION – CONT'D

| COMPONENT | INHALATION TOXICITY | NOTES ON INHALATION TOXICITY |
|---------------------|---------------------|---|
| Ethyl cyanoacrylate | | Vapor, if generated, can cause irritation of the eyes, nose and respiratory tract. Avoid breathing vapors or mists. |
| COMPONENT | | NOTES ON EYE IRRITATION |
| Ethyl cyanoacrylate | | On contact, will bond eyelids together. Vapors are lachrymatory. Will cause eye irritation. Cyanoacrylates will not bond to the eye but may cause corneal scratching. |

12. ECOLOGICAL INFORMATION

| | |
|----------------------------|------------------|
| POTENTIAL TO BIOACCUMULATE | Unknown. |
| AQUATIC TOXICITY | None Established |

13. DISPOSAL CONSIDERATIONS

| | |
|--------------------------|---|
| WASTE DISPOSAL METHODS | Disposal should be in accordance with local, state or national legislation. |
| EMPTY CONTAINER WARNINGS | Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied. |

14. TRANSPORTATION INFORMATION

This section provided for general information only.

FOR NON-BULK SHIPMENTS.

FOR MORE COMPLETE TRANSPORTATION REGULATORY INFORMATION PLEASE REFER TO THE SHIPPING DOCUMENTS ACCOMPANYING THE SHIPMENT OF THIS PRODUCT.

DOT CLASSIFICATION

| | |
|----------------------|----------------------------|
| PROPER SHIPPING NAME | COMBUSTIBLE LIQUID, N.O.S. |
| TECHNICAL NAME | (ETHYL CYANOACRYLATE) |
| HAZARD CLASS | N |
| U.N. NUMBER | NA1993 |
| PACKING GROUP | III |

The information provided herein may not include the impact of additional regulatory requirements (eg, for materials meeting the definition of a hazardous waste under RCRA, hazardous substances under CERCLA, and/of marine pollutants under CWA or other similar federal, state or local laws) or any associated exceptions or exemptions under regulations applicable to the transport of this material.

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PERMABOND® 102



READ MATERIAL SAFETY DATA SHEET BEFORE HANDLING PRODUCT!

Issue Date 02/11/05

15. REGULATORY INFORMATION

USA

TSCA

All components are on the TSCA inventory.

SARA/TITLE III

Contains no substances at or above the reporting threshold under Section 313.

CAS NUMBER

CONCENTRATION (%)

16. OTHER INFORMATION

MSDS DATE

02/11/05

This MSDS contains changes from the previous one in section 1; the medical emergency phone number was changed.

FOR INFORMATION CONTACT:

Permabond LLC
HELP Line: 1-800-640-7599

ADDITIONAL INFORMATION: The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.