

Safety Data Sheet

According to U.S.A. Federal Hazcom 2012

1. Identification

1.1. Product identifier used on the label

Product name **Permabond TA4810B**

1.2. Recommended use of the chemical and restrictions on use

Intended use **Adhesive**

Identified Uses	Industrial	Professional	Consumer
Use	✓	✓	-

1.3. Name, U.S. address, and U.S. telephone number of the chemical manufacturer, importer, or other responsible party

Name **Permabond Engineering Adhesives**
Full address **Niederkasseler Lohweg 18**
District and Country **40547 Düsseldorf**
Germany
Tel. **+44 (0)1962 711 661**

e-mail address of the competent person responsible for the Safety Data Sheet **info.europe@permabond.com**

Supplier: **Permabond LCC**
14 Robinson Street
Pottstown, PA 19464, USA
tel 732-868-1372 OR 800-640-7599
www.permabond.com

1.4. Emergency phone number

For urgent inquiries refer to **Medical: Poison Control Center 866-827-6282 (toll free) or 303-389-1109**
Transport: CHEMTREC 800-424-9300 (toll free) or 1-703-741-5970

2. Hazards identification

2.1. Classification of the chemical in accordance with paragraph (d)(1)(i)(A) of §1910.1200

Classification and Hazard Statement	
Flammable liquid, category 2	Highly flammable liquid and vapour.
Skin irritation, category 2	Causes skin irritation.
Specific target organ toxicity - single exposure, category 3	May cause respiratory irritation.
Skin sensitization, category 1	May cause an allergic skin reaction.

2.2. Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200

Hazard pictograms:



Signal word: **Danger**

Hazard statements:

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.

Precautionary statements:

Prevention:

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2. Hazards identification ... / >>

- P210** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P261** Avoid breathing vapors or aerosols.
- P242** Use only non-sparking tools.
- P280** Wear protective gloves / eye protection / face protection.
- P271** Use only outdoors or in a well-ventilated area.
- P264** Wash contaminated skin thoroughly after handling.
- P240** Ground / bond container and receiving equipment.
- P243** Take precautionary measures against static discharge.
- P241** Use explosion-proof electrical / ventilating / lighting / . . . / equipment.
- P272** Contaminated work clothing should not be allowed out of the workplace.

Response:

- P321** Specific treatment (see . . . on this label).
- P303+P361+P353** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / shower.
- P312** Call a POISON CENTER / doctor / . . . / if you feel unwell.
- P333+P313** If skin irritation or rash occurs: Get medical advice / attention.
- P304+P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P302+P352** IF ON SKIN: Wash with plenty of soap and water.
- P362+P364** Take off contaminated clothing and wash it before reuse.
- P370+P378** In case of fire: Use dry powder, dry sand or dry earth to extinguish.

Storage:

- P403+P235** Store in a well-ventilated place. Keep cool.
- P403+P233** Store in a well-ventilated place. Keep container tightly closed.
- P405** Store locked up.

Disposal:

- P501** Dispose of the product according to current regulations.

2.3. Hazards not otherwise classified that have been identified during the classification process

No other hazards known.

2.4. Unknown acute toxicity

Information not available

3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification:
Methyl methacrylate		
INDEX 607-035-00-6	65 ≤ x < 80	Flammable liquid, category 2 H225, Skin irritation, category 2 H315, Specific target organ toxicity - single exposure, category 3 H335, Skin sensitization, category 1 H317
EC 201-297-1		
CAS 80-62-6		
REACH Reg. 01-2119452498-28-XXXX		
3,5-diethyl-1,2-dihydro-1-phenyl-2-propylpyridine		
	3 ≤ x < 5	Acute toxicity, category 4 H302, Eye irritation, category 2 H319, Skin irritation, category 2 H315
EC 252-091-3		
CAS 34562-31-7		
REACH Reg. 01-2120769712-47-XXXX		

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

The full wording of hazard (H) phrases is given in section 16 of the sheet.

4. First-aid measures

4.1. Description of necessary measures

In case of doubt or in the presence of symptoms contact a doctor and show him this document.
In case of more severe symptoms, ask for immediate medical aid.
EYES: Remove, if present, contact lenses if the situation allows you to do so easily. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. Get medical advice/attention.

Permabond TA4810B**4. First-aid measures ... / >>**

SKIN: Take off immediately all contaminated clothing. Wash immediately and thoroughly with running water (and soap if possible). Get medical advice/attention. Avoid further contact with contaminated clothing.

INGESTION: Do not induce vomiting unless explicitly authorised by a doctor. Do not give anything by mouth to an unconscious person. Get medical advice/attention.

INHALATION: Remove victim to fresh air, away from the accident scene. In the event of respiratory symptoms (coughing, wheezing, breathing difficulty, asthma) keep the victim in a comfortable position for breathing. If necessary administer oxygen. If the subject stops breathing, administer artificial respiration. Get medical advice/attention.

4.2. Most important symptoms/effects, acute and delayed

Specific information on symptoms and effects caused by the product are unknown.

DELAYED EFFECTS: Based on the information currently available, there are no known cases of delayed effects following exposure to this product.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

If symptoms occur, whether acute or delayed, consult a doctor.

5. Fire-fighting measures**5.1. Suitable (and unsuitable) extinguishing media****SUITABLE EXTINGUISHING EQUIPMENT**

Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

UNSUITABLE EXTINGUISHING EQUIPMENT

Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

5.2. Specific hazards arising from the chemical**DANGERS DUE TO EXPOSURE IN THE EVENT OF FIRE**

Overpressure can be created in containers exposed to fire with risk of explosion. Avoid breathing combustion products, carbon monoxide (CO), carbon dioxide (CO₂), and nitric oxides (NO_x).

5.3. Special protective equipment and precautions for fire-fighters**GENERAL INFORMATION**

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

6. Accidental release measures**6.1. Personal precautions, protective equipment, and emergency procedures**

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

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7. Handling and storage

7.1. Precautions for safe handling

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Store in a cool and well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

8. Exposure controls/personal protection

8.1. Control parameters

Regulatory references:

USA	NIOSH-REL	NIOSH publication No. 2005-149, 3th printing, 2007.
USA	OSHA-PEL	Occupational Exposure Limits - Limits for Air Contaminants TABLE Z-1-1910.1000.
USA	CAL/OSHA-PEL	California Division of Occupational Safety and Health (Cal-OSHA) Permissible Exposure Limits (PELs).

Methyl methacrylate

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
OSHA	USA	410	100			
CAL/OSHA	USA	205	50	410	100	
NIOSH	USA	410	100			

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

8.2. Individual protection measures, such as personal protective equipment

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. Personal protective equipment must comply with current regulations.

HAND PROTECTION

Protect hands with category III work gloves.

The following should be considered when choosing work glove material (OSHA 29 CFR 1910.138): compatibility, degradation, permeability time.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category I professional long-sleeved overalls and safety footwear. Wash body with soap and water after removing protective clothing.

EYE PROTECTION

Wear airtight protective goggles (OSHA 29 CFR 1910.133).

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, wear a mask with a NIOSH certified filter, whose class must be chosen according to the limit of use concentration (NIOSH 42 CFR 84, OSHA 29 CFR 1910.134). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus or external air-intake breathing apparatus. For a correct choice of respiratory protection device, see standard NIOSH 42 CFR 84, OSHA 29 CFR 1910.134.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

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9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	
Colour	Amber	
Odour	characteristic	
Melting point / freezing point	not available	
Initial boiling point	100 °C	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	11 °C	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	not available	Reason for missing data:substance/mixture is non-soluble (in water)
Kinematic viscosity	not available	
Dynamic viscosity	~ 160000 mPa.s	Temperature: 23 °C
Solubility	not available	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	1	
Vapour density	not available	
Particle characteristics	not applicable	

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

Information not available

10. Stability and reactivity

10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

The vapours may also form explosive mixtures with the air.

10.4. Conditions to avoid

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

10.5. Incompatible materials

Information not available

10.6. Hazardous decomposition products

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

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11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on toxicological effects

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

Methyl methacrylate	
LD50 (Oral):	> 5000 mg/kg
LD50 (Dermal):	> 5000 mg/kg
LC50 (Inhalation vapours):	29.8 mg/l/4h

3,5-diethyl-1,2-dihydro-1-phenyl-2-propylpyridine	
LD50 (Oral):	> 500 mg/kg
LD50 (Dermal):	> 1000 mg/kg

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

Carcinogenicity Assessment:
80-62-6 Methyl methacrylate
IARC:3

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

May cause respiratory irritation

STOT - REPEATED EXPOSURE

11. Toxicological information ... / >>

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

12. Ecological information

This product is dangerous for the environment and is toxic for aquatic organisms. In the long term, it has negative effects on the aquatic environment.

12.1. Ecotoxicity

Methyl methacrylate	
LC50 - for Fish	> 100 mg/l/96h
EC50 - for Crustacea	69 mg/l/48h
EC50 - for Algae / Aquatic Plants	> 100 mg/l/72h
Chronic NOEC for Fish	9.4 mg/l
Chronic NOEC for Crustacea	37 mg/l
Chronic NOEC for Algae / Aquatic Plants	> 110 mg/l

3,5-diethyl-1,2-dihydro-1-phenyl-2-propylpyridine	
EC50 - for Crustacea	22 mg/l/48h
EC50 - for Algae / Aquatic Plants	40 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants	16 mg/l

12.2. Persistence and degradability

Methyl methacrylate
Rapidly degradable

3,5-diethyl-1,2-dihydro-1-phenyl-2-propylpyridine
NOT rapidly degradable

12.3. Bioaccumulative potential

Information not available

12.4. Mobility in soil

Information not available

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage \geq than 0,1%.

12.6. Other adverse effects

Information not available

13. Disposal considerations

13.1. Waste treatment methods

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

The management of waste arising from the use or dispersal of this product must be organised in accordance with occupational safety regulations. See section 8 for possible need for PPE.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

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14. Transport information

Classification according to the UN model on transport of dangerous goods.

14.1. UN number

ADR / RID, IMDG, IATA: UN 1993

14.2. UN proper shipping name

ADR / RID: FLAMMABLE LIQUID, N.O.S. (Methyl methacrylate)
IMDG: FLAMMABLE LIQUID, N.O.S. (Methyl methacrylate)
IATA: FLAMMABLE LIQUID, N.O.S. (Methyl methacrylate)

14.3. Transport hazard class(es)

ADR / RID: Class: 3 Label: 3

IMDG: Class: 3 Label: 3

IATA: Class: 3 Label: 3



14.4. Packing group

ADR / RID, IMDG, IATA: II

14.5. Environmental hazards

ADR / RID: NO
IMDG: not marine pollutant
IATA: NO

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 33	Limited Quantities: 1 lt	Tunnel restriction code: (D/E)
	Special provision: 274, 601, 640(C-D)		
IMDG:	EMS: F-E, S-E	Limited Quantities: 1 lt	
IATA:	Cargo:	Maximum quantity: 60 L	Packaging instructions: 364
	Passengers:	Maximum quantity: 5 L	Packaging instructions: 353
	Special provision:	A3	

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Information not relevant

15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Federal Regulations

TSCA:
All components of this product are listed on US Toxic Substances Control Act (TSCA) Inventory or are exempt from the listing / notification requirements.

Clean Air Act Section 112(b):
80-62-6 Methyl methacrylate

15. Regulatory information ... / >>

Clean Air Act Section 602 Class I Substances:
No component(s) listed.

Clean Air Act Section 602 Class II Substances:
No component(s) listed.

Clean Water Act – Priority Pollutants:
No component(s) listed.

Clean Water Act – Toxic Pollutants:
No component(s) listed.

DEA List I Chemicals (Precursor Chemicals):
No component(s) listed.

DEA List II Chemicals (Essential Chemicals):
No component(s) listed.

EPA List of Lists:
313 Category Code:
80-62-6 Methyl methacrylate

EPCRA 302 EHS TPQ:
No component(s) listed.

EPCRA 304 EHS RQ:
No component(s) listed.

CERCLA RQ:
80-62-6 Methyl methacrylate

EPCRA 313 TRI:
80-62-6 Methyl methacrylate

RCRA Code:
80-62-6 Methyl methacrylate

CAA 112 (r) RMP TQ:
No component(s) listed.

State Regulations

Massachusetts:
80-62-6 Methyl methacrylate

Minnesota:
80-62-6 Methyl methacrylate

New Jersey:
80-62-6 Methyl methacrylate

New York:
80-62-6 Methyl methacrylate

Pennsylvania:
80-62-6 Methyl methacrylate

California:
80-62-6 Methyl methacrylate

Proposition 65:
This product does not contain any substances known to the State of California to cause cancer, reproductive harm or birth defects.

International Regulations
Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:
None

Substances subject to the Rotterdam Convention:
None

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15. Regulatory information ... / >>

Substances subject to the Stockholm Convention:
None

16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

LEGEND:

- 313 CATEGORY CODE: Emergency Planning and Community Right-to Know Act Section 313 Category Code
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAA 112 @ RMP TQ: Risk Management Plan Threshold Quantity (Clean Air Act Section 112@)
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CERCLA RQ: Reportable Quantity (Comprehensive Environment Response, Compensation, and Liability Act)
- CLP: Regulation (EC) 1272/2008
- DEA: Drug Enforcement Administration
- EmS: Emergency Schedule
- EPA: US Environmental Protection Agency
- EPCRA: Emergency Planning and Community Right-to Know Act
- EPCRA 302 EHS TPQ: Extremely Hazardous Substance Threshold Planning Quantity (Section 302 Category Code)
- EPCRA 304 EHS RQ: Extremely Hazardous Substance Reportable Quantity (Section 304 Category Code)
- EPCRA 313 TRI: Toxics Release Inventory (Section 313 Category Code)
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PEL: Predicted exposure level
- RCRA Code: Resource Conservation and Recovery Act Code
- REACH: Regulation (EC) 1907/2006
- REL: Recommended exposure limit
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TSCA: Toxic Substances Control Act
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- WHMIS: Workplace Hazardous Materials Information System.

GENERAL BIBLIOGRAPHY:

- GHS rev. 7
- The Merck Index. 10th Edition
- Handling Chemical Safety
- Niosh - Registry of Toxic Effects of Chemical Substances
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy
- 6 NYCRR part 597
- Cal/OSHA website
- California Safe Drinking Water and Toxic Enforcement Act

Permabond TA4810B**16. Other information ... / >>**

- EPA website
- Hazard Communication Standard (HCS 2012)
- IARC website
- List Of Lists EPA: Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112® of the Clean Air Act
- Massachusetts 105 CMR Department of public health 670.000: "Right to Know"
- Minnesota Chapter 5206 Department Of Labor and Industry Hazardous Substances, Employee "Right to Know".
- New Jersey Worker and Community Right to know Act N.J.S.A.
- NTP. 2011. Report on Carcinogens, 12th Edition.
- OSHA website
- Pennsylvania, Hazardous Substance List, Chapter 323

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

CALCULATION METHODS FOR CLASSIFICATION

Product classification derives from criteria established by the OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200), unless determined otherwise in Section 11 and 12. The data for evaluation of chemical-physical properties are reported in section 9.

Changes to previous review:

The following sections were modified:

02 / 03 / 04 / 06 / 07 / 09 / 14 / 16.