Safety Data Sheet

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)

1. Identification

1.1. Product identifier

Product name **Permabond TA4246**

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use **Adhesive**

Identified Uses	Industrial	Professional	Consumer
Use	✓	✓	-

1.3. Details of the supplier of the safety data sheet

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 telephone 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 substance or mixture

Classification and Hazard Statement

Flammable liquid, category 3	Flammable liquid and vapour.
Skin corrosion, category 1	Causes severe skin burns and eye damage.
Serious eye damage, category 1	Causes serious eye damage.
Specific target organ toxicity - single exposure, category 3	May cause respiratory irritation.
Skin sensitization, category 1	May cause an allergic skin reaction.

Hazard pictograms:

Signal words: Danger

Hazard statements:

H226	Flammable liquid and vapour.
H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.

Precautionary statements:
Prevention:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

2. Hazards identification ... / >>

P260	Do not breathe the powder or aerosols or aerosols.
P242	Use only non-sparking tools.
P280	Wear protective gloves/ protective clothing / 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:

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / shower.
P310	Immediately call a POISON CENTER / doctor / . . .
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.
P370+P378	In case of fire: Use dry powder, dry sand or dry earth to extinguish.
P363	Wash contaminated clothing before reuse.

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.

2.2. Other hazards

No other hazards known.

3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification		**x = Conc. %**	**Classification:**
METHYLMETHACRYLATE			
INDEX	*607-035-00-6*	30 ≤ x < 60	**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*		
METHACRYLIC ACID			
INDEX	*607-088-00-5*	5 ≤ x < 10	**Flammable liquid, category 4 H227, Acute toxicity, category 3 H311, Acute toxicity, category 4 H302, Acute toxicity, category 4 H332, Skin corrosion, category 1A H314, Specific target organ toxicity - single exposure, category 3 H335**
EC	*201-204-4*		
CAS	*79-41-4*		
REACH Reg.	*01-2120741502-64-XXXX*		
EPOXY RESIN (Number average MW <= 700)			
INDEX	*603-073-00-2*	5 ≤ x < 10	**Eye irritation, category 2 H319, Skin irritation, category 2 H315, Skin sensitization, category 1 H317**
EC	*216-823-5*		
CAS	*1675-54-3*		
REACH Reg.	*01-2119456619-26-XXXX*		

* There is a batch 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 first aid 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.
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. Rinse your mouth with running water. 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.

Rescuer protection

It is good practice for rescuers lending support to a person who has been exposed to a chemical substance or to a mixture to wear personal protective equipment. The nature of such protection depends on the hazard level of the substance or mixture, on the type of exposure and on the extent of the contamination. In the absence of other more specific indications, use of disposable gloves in the event of possible contact with body fluids is recommended. For the type of PPE suitable for the characteristics of the substance or mixture, see section 8.

4.2. Most important symptoms and effects, both 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 any immediate medical attention and special treatment needed

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

Means to have available in the workplace for specific and immediate treatment

Running water for skin and eye wash.

5. Fire-fighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT
Extinguishing substances are: carbon dioxide and 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. Special hazards arising from the substance or mixture

DANGERS DUE TO EXPOSURE IN THE EVENT OF FIRE
The product, if involved in large quantities in a fire, can significantly aggravate it. Avoid breathing combustion products, carbon monoxide (CO), carbon dioxide (CO_2), and nitric oxides (NO_x).

5.3. Advice for firefighters

GENERAL INFORMATION
In the case of fire, use jets of water to cool the containers to prevent the risk of explosions (product decomposition and excess pressure) and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Remove all containers containing the product from the fire, if it is safe to do so.
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.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

7. Handling and storage

7.1. Precautions for safe handling

Ensure that there is an adequate earthing system for the equipment and personnel. Avoid contact with eyes and skin. Do not breathe powders, vapours or mists. Do not eat, drink or smoke during use. Wash hands after use. Avoid leakage of the product into the environment.

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. 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.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store in a ventilated and dry place, far away from sources of ignition. Keep containers well sealed. Keep the product in clearly labelled containers. Avoid overheating. Avoid violent blows. Keep containers away from any incompatible materials, see section 10 for details.

Store in a cool and well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition.

7.3. Specific end use(s)

Information not available

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).

8. Exposure controls/personal protection ... / >>

METHYLMETHACRYLATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
OSHA	USA	410	100			
CAL/OSHA	USA	205	50	410	100	
NIOSH	USA	410	100			

METHACRYLIC ACID

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
CAL/OSHA	USA	70	20			SKIN
NIOSH	USA	70	20			SKIN

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

8.2. Exposure controls

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.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value			Information
Appearance	viscous liquid			
Colour	Amber			
Odour	pungent			
Odour threshold	not available			
pH	not available			Reason for missing data:substance/mixture is non-soluble (in water)
Melting point / freezing point	not available			
Initial boiling point	not available			
Boiling range	not available			
Flash point	30	°C	(86 °F)	
Evaporation rate	not available			
Flammability	not available			
Lower explosive limit	not available			
Upper explosive limit	not available			
Vapour pressure	not available			

9. Physical and chemical properties ... / >>

Vapour density	not available
Relative density	1
Solubility	not available
Partition coefficient: n-octanol/water	not available
Auto-ignition temperature	not available
Decomposition temperature	not available
Viscosity	not available
Explosive properties	not available
Oxidising properties	not available

9.2. Other information

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.

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

11. Toxicological information ... / >>

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

METHACRYLIC ACID
LD50 (Oral): 1320 mg/kg
LD50 (Dermal): 750 mg/kg
LC50 (Inhalation vapours): 7.1 mg/l/4h

EPOXY RESIN (Number average MW <= 700)
LD50 (Oral): > 2000 mg/kg
LD50 (Dermal): > 2000 mg/kg

SKIN CORROSION / IRRITATION

Corrosive for the skin

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

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 METHYLMETHACRYLATE
IARC:3
1675-54-3 EPOXY RESIN (Number average MW <= 700)
IARC:3

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

May cause respiratory irritation

STOT - REPEATED EXPOSURE

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 the aquatic organisms. In the long term, it has negative effects on the aquatic environment.

12.1. Toxicity

METHYLMETHACRYLATE

LC50 - for Fish > 100 mg/l/96h

EC50 - for Crustacea 69 mg/l/48h

12. Ecological information ... / >>

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
METHACRYLIC ACID	
LC50 - for Fish	85 mg/l/96h
EC50 - for Crustacea	> 130 mg/l/48h
EC50 - for Algae / Aquatic Plants	45 mg/l/72h
EPOXY RESIN (Number average MW <= 700)	
LC50 - for Fish	2 mg/l/96h
EC50 - for Crustacea	1.8 mg/l/48h
EC50 - for Algae / Aquatic Plants	11 mg/l/72h
Chronic NOEC for Crustacea	0.3 mg/l
Chronic NOEC for Algae / Aquatic Plants	4.2 mg/l

12.2. Persistence and degradability

METHYLMETHACRYLATE
Rapidly degradable

METHACRYLIC ACID
Rapidly degradable

EPOXY RESIN (Number average MW <= 700)
NOT rapidly degradable

12.3. Bioaccumulative potential

EPOXY RESIN (Number average MW <= 700)

BCF	31

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 ≥ 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.

14. Transport information

14.1. UN number

ADR / RID, IMDG, IATA: UN 2924

14.2. UN proper shipping name

ADR / RID: FLAMMABLE LIQUID, CORROSIVE, N.O.S.
IMDG: FLAMMABLE LIQUID, CORROSIVE, N.O.S.
IATA: FLAMMABLE LIQUID, CORROSIVE, N.O.S.

14.3. Transport hazard class(es)

ADR / RID: Class: 3 Label: 3 (8)

IMDG: Class: 3 Label: 3 (8)

IATA: Class: 3 Label: 3 (8)

14.4. Packing group

ADR / RID, IMDG, IATA: III

14.5. Environmental hazards

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

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 38 Special provision: 274	Limited Quantities: 5 L	Tunnel restriction code: (D/E)
IMDG:	EMS: F-E, S-C	Limited Quantities: 5 L	
IATA:	Cargo: Passengers: Special provision:	Maximum quantity: 60 L Maximum quantity: 5 L A3	Packaging instructions: 365 Packaging instructions: 354

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 METHYLMETHACRYLATE

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

15. Regulatory information ... / >>

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	METHYLMETHACRYLATE
80-15-9	CUMYL HYDROPEROXIDE

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

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

CERCLA RQ:

80-62-6	METHYLMETHACRYLATE
80-15-9	CUMYL HYDROPEROXIDE

EPCRA 313 TRI:

80-62-6	METHYLMETHACRYLATE
80-15-9	CUMYL HYDROPEROXIDE

RCRA Code:

80-62-6	METHYLMETHACRYLATE
80-15-9	CUMYL HYDROPEROXIDE

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

State Regulations

Massachussetts:

80-62-6	METHYLMETHACRYLATE
79-41-4	METHACRYLIC ACID
80-15-9	CUMYL HYDROPEROXIDE

Minnesota:

80-62-6	METHYLMETHACRYLATE
79-41-4	METHACRYLIC ACID

New Jersey:

80-62-6	METHYLMETHACRYLATE
79-41-4	METHACRYLIC ACID
80-15-9	CUMYL HYDROPEROXIDE

New York:

80-62-6	METHYLMETHACRYLATE
80-15-9	CUMYL HYDROPEROXIDE

Pennsylvania:

80-62-6	METHYLMETHACRYLATE
79-41-4	METHACRYLIC ACID
80-15-9	CUMYL HYDROPEROXIDE

California:

80-62-6	METHYLMETHACRYLATE
79-41-4	METHACRYLIC ACID

15. Regulatory information ... / >>

Proposition 65:
This product does not contain any substances know 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

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.
H226	Flammable liquid and vapour.
H227	Combustible liquid.
H311	Toxic in contact with skin.
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

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:

16. Other information ... / >>

- GHS rev. 3
- 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
- EPA website
- Hazard Comunication 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
- Massachussetts 105 CMR Department of public health 670.000: "Right to Know"
- Minensota Chapter 5206 Departemnt 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 / 09 / 11 / 12 / 13 / 14 / 15.