

## 1. Product and company identification

### Product identifier

Trade name: 83L1 - Silicon Primer

This safety data sheet pertains to the following products:  
83L1 = Silicon-Grundierung

### Relevant identified uses of the substance or mixture and uses advised against

General use: Primer for orthopedic procedures. Reserved for industrial and professional use.

### Details of the supplier of the safety data sheet

Company name: Otto Bock Health Care  
Street/POB-No.: 3820 W. Great Lakes Drive  
Postal Code, city: Salt Lake City, UT 84120  
USA

WWW: [www.ottobockus.com](http://www.ottobockus.com)

Telephone: +1 (801) 956-2400

Telefax: +1 (801) 956-2401

Department responsible for information:

Quality Department,  
Telephone: +1 (801) 954-2304 (7 AM – 3 PM, Mountain Time),  
Email: [USRegulatory@ottobock.com](mailto:USRegulatory@ottobock.com)

Additional information:

Corporate headquarters:  
Ottobock SE & Co. KGaA  
Max-Näder-Straße 15  
Duderstadt  
Germany

### Emergency phone number

**CHEMTREC, Telephone: +1 (800) 424-9300**

**Transport:**

**CONSULTANK Lutz Harder GmbH (Contract QUALI003)**

**Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)**

## 2. Hazards identification

### Emergency overview

Appearance: Form: liquid  
Color: colorless up to yellowish

Odor: Weak

Classification: Flammable Liquid - Category 2. Skin Irritation - Category 2. Eye Damage - Category 1.  
Specific Target Organ Toxicity (Single Exposure) - Category 3. Aspiration Toxicity -  
Category 1. Aquatic toxicity - chronic - Category 2.

Hazard symbols:



Signal word:

**Danger**

Hazard statements:

- Highly flammable liquid and vapor.
- May be fatal if swallowed and enters airways.
- Causes skin irritation.
- Causes serious eye damage.
- May cause drowsiness or dizziness.
- Toxic to aquatic life with long lasting effects.

Precautionary statements:

- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Avoid release to the environment.
- Wear protective gloves/protective clothing/eye protection.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- Do NOT induce vomiting.
- Collect spillage.
- Store in a well-ventilated place. Keep cool.

### Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Hazards not otherwise classified

- Potentially explosive mixtures may form if adequate ventilation is not provided.
- Inhaling can lead to irritations of the respiratory tract and mucous membrane.
- Higher doses may lead to a narcotic effect.
- Special danger of slipping by leaking/spilling product.

see section 11: Toxicological information

## 3. Composition / Information on ingredients

Chemical characterization: Silicone

Relevant ingredients:

CAS No.	Designation	Concentration	Classification
CAS 64742-49-0	Naphtha (petroleum), hydrotreated light	70 - 90 %	Flammable Liquid - Category 2. Skin Irritation - Category 2. Specific Target Organ Toxicity (Single Exposure) - Category 3. Aspiration Toxicity - Category 1. Aquatic toxicity - chronic - Category 2.
CAS 2551-83-9	Allyltrimethoxysilane	< 10 %	Flammable Liquid - Category 3. Acute Toxicity - inhalative - Category 4.
CAS 5593-70-4	Titanium tetrabutanolatate	< 10 %	Flammable Liquid - Category 3. Skin Irritation - Category 2. Eye Damage - Category 1. Specific Target Organ Toxicity (Single Exposure) - Category 3.

Additional information: With exposure to moisture, product will release methanol and butanol.  
The maximum workplace exposure limits are, where necessary, listed in section 8.

### 4. First aid measures

General information:	First aider: Pay attention to self-protection! If medical advice is needed, have product container or label at hand. Take off immediately all contaminated clothing and wash it before reuse.
In case of inhalation:	Provide fresh air. Respiratory complaints: Move victim to fresh air; if necessary, provide artificial respiration or oxygen. Seek medical attention.
Following skin contact:	After contact with skin, wash immediately with soap and plenty of water. If skin irritation occurs: Consult physician immediately.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Seek the attention of an ophthalmologist immediately.
After swallowing:	Rinse mouth with water. Do NOT induce vomiting. In case of vomiting, lay at least head on side. Immediately get medical attention.

#### Most important symptoms/effects, acute and delayed

May be fatal if swallowed and enters airways. Causes serious eye damage. Causes skin irritation. May cause drowsiness or dizziness.  
Inhaling can lead to irritations of the respiratory tract and mucous membrane.  
Higher doses may lead to a narcotic effect.

#### Information to physician

Treat symptomatically. Subsequent observance for pneumonia and lung oedema.

### 5. Fire fighting measures

Flash point/flash point range:	44.6 °F (c.c.)
Auto-ignition temperature:	No data available
Suitable extinguishing media:	Water spray jet, alcohol resistant foam, dry chemical powder, carbon dioxide, sand
Extinguishing media which must not be used for safety reasons:	Full water jet

#### Specific hazards arising from the chemical

Highly flammable liquid and vapor.  
With exposure to moisture, product will release methanol and butanol.  
Vapors form potentially explosive mixtures with air, which are heavier than air. Air-Vapor mixture may travel great distances at floor level and lead to backflash when exposed to an ignition source.  
May produce carbon oxides and formaldehyde if heated to decomposition. Furthermore, there may develop: metallic compounds, silicon compounds.

Protective equipment and precautions for firefighters:	Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.
Additional information:	Do not inhale explosion and combustion gases. Cool endangered containers with water spray and, if possible, remove from danger zone. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. Do not allow fire water to penetrate into surface or ground water. Contaminated fire-fighting water must be collected separately.

## 6. Accidental release measures

Personal precautions:	<p>Keep away from sources of ignition - No smoking.</p> <p>Avoid contact with skin and eyes. Do not breathe vapor/aerosol.</p> <p>Wear appropriate protective equipment. Take off immediately all contaminated clothing and wash it before reuse. Provide adequate ventilation.</p> <p>If possible, eliminate leakage. Keep unprotected people away.</p> <p>Cordon off downwind area at risk and warn inhabitants.</p>
Environmental precautions:	<p>Do not allow to enter into ground-water, surface water or drains. Danger of explosion!</p> <p>In case of release, notify competent authorities.</p>
Methods for clean-up:	<p>Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).</p> <p>Beware of reignition. Thoroughly clean surrounding area.</p> <p>In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).</p>
Additional information:	<p>Use only non-sparking tools.</p> <p>Vapors form potentially explosive mixtures with air, which are heavier than air. Air-Vapor mixture may travel great distances at floor level and lead to backflash when exposed to an ignition source.</p> <p>With exposure to moisture, product will release methanol and butanol.</p>

## 7. Handling and storage

### Handling

Advices on safe handling:	<p>Provide adequate ventilation, and local exhaust as needed. Do not breathe vapor/aerosol.</p> <p>Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment.</p> <p>Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Take off immediately all contaminated clothing and wash it before reuse.</p> <p>Guarantee sufficient ventilation during and after use, in order to prevent vapor accumulation. The use of local exhaust ventilation is recommended. Have eye wash bottle or eye rinse ready at work place.</p>
Precautions against fire and explosion:	<p>Keep away from sources of ignition - No smoking.</p> <p>Take precautionary measures against static discharges.</p> <p>Electrical equipment must be explosion protected according to standards.</p> <p>Vapors form explosive mixtures with air.</p>

### Storage

Requirements for storerooms and containers:	<p>Keep container tightly closed. Store at room temperature in a dry and well ventilated area.</p> <p>Protect from moisture contamination.</p>
Hints on joint storage:	<p>Keep away from oxidizing agents.</p> <p>Do not store together with Organic peroxides.</p> <p>Keep away from food, drink and animal feedingstuffs.</p> <p>Do not store together with combustible or self-igniting materials or any highly flammable solids.</p>
Further details:	<p>With exposure to moisture, product will release methanol and butanol.</p>

## 8. Exposure controls / personal protection

### Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
67-56-1	Methanol	USA: ACGIH: STEL	328 mg/m <sup>3</sup> ; 250 ppm (may be absorbed through the skin)
		USA: ACGIH: TWA	262 mg/m <sup>3</sup> ; 200 ppm (may be absorbed through the skin)
		USA: IDLH: TWA	6,000 ppm
		USA: NIOSH: STEL	325 mg/m <sup>3</sup> ; 250 ppm (may be absorbed through the skin)
		USA: NIOSH: TWA	260 mg/m <sup>3</sup> ; 200 ppm (may be absorbed through the skin)
		USA: OSHA: TWA	260 mg/m <sup>3</sup> ; 200 ppm
71-36-3	Butan-1-ol	USA: ACGIH: TWA	61 mg/m <sup>3</sup> ; 20 ppm
		USA: IDLH: TWA	1,400 ppm
		USA: NIOSH: Ceiling	150 mg/m <sup>3</sup> ; 50 ppm (may be absorbed through the skin)
		USA: OSHA: TWA	300 mg/m <sup>3</sup> ; 100 ppm

Biological limit values:

CAS No.	Designation	Type	Limit value	Parameter	Sampling
67-56-1	Methanol	USA: ACGIH-BEI, urine	15 mg/L	Methanol	end of exposure or end of shift

### Engineering controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment. Explosion protection required.

See also information in chapter 7, section storage.

### Personal protection equipment (PPE)

Eye/face protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Skin protection: Wear suitable protective clothing.  
In case of handling larger quantities: Flame-resistant antistatic protective clothing  
Protective gloves according to OSHA Standard - 29 CFR: 1910.138.  
Glove material: Nitrile rubber, polyvinyl alcohol, chloroprene rubber, fluoro rubber, EVAL  
Layer thickness: ≥ 0.35 mm  
Breakthrough time: > 120 min  
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded.  
Recommendation: Use filter type A (= against vapors of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.  
The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

### General hygiene considerations:

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

Do not get in eyes, on skin, or on clothing.

Contaminated work clothing should not be allowed out of the workplace. Do not breathe vapor/aerosol. Take off immediately all contaminated clothing and wash it before reuse.

When using do not eat, drink or smoke.

Wash hands before breaks and after work.

Have eye wash bottle or eye rinse ready at work place.

### Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

Appearance:	Form: liquid Color: colorless up to yellowish
Odor:	Weak
Odor threshold:	No data available
pH:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	> 194 °F
Flash point/flash point range:	44.6 °F (c.c.)
Evaporation rate:	No data available
Flammability:	Highly flammable liquid and vapor.
Explosion limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Density:	at 68 °F: 0.71 g/mL
Water solubility:	Insoluble
Partition coefficient: n-octanol/water:	0.88 log P(o/w) (Titanium tetrabutanolate) Based on the n-octanol/water partition coefficient accumulation in organisms is not expected. >= 4 log P(o/w) (Naphtha (petroleum), hydrotreated light) Based on the n-octanol/water partition coefficient accumulation in organisms is possible.
Auto-ignition temperature:	No data available
Thermal decomposition:	No data available
Viscosity, kinematic:	at 77 °F: 0.63 mm²/s
Explosive properties:	Vapors may form explosive mixtures with air.
Oxidizing characteristics:	Not oxidising
Additional information:	Incapable of spontaneous heating

## 10. Stability and reactivity

Reactivity:	Highly flammable liquid and vapor. Vapors may form explosive mixtures with air.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Vapors form potentially explosive mixtures with air, which are heavier than air. Air-Vapor mixture may travel great distances at floor level and lead to backflash when exposed to an ignition source. During hydrolysis, a small amount of methanol is produced.
Conditions to avoid:	Keep away from heat. Keep away from sources of ignition - No smoking. Protect from direct sunlight. Take precautionary measures against static discharges.
Incompatible materials:	Keep away from oxidizing agents. Protect from moisture contamination.
Hazardous decomposition products:	With exposure to moisture, product will release methanol and butanol. Measurements taken at temperatures exceeding 302 °F have revealed that a small quantity of formaldehyde splits off through oxidative decomposition.
Thermal decomposition:	No data available

## 11. Toxicological information

### Toxicological tests

Toxicological effects:	The statements are derived from the properties of the single components. No toxicological data is available for the product as such. Acute toxicity (oral): Based on available data, the classification criteria are not met. ATEmix (estimated) > 5,000 mg/kg Acute toxicity (dermal): Based on available data, the classification criteria are not met. ATEmix (estimated) > 2,000 mg/kg Acute toxicity (inhalative): Lack of data. Skin corrosion/irritation: Skin Irritation - Category 2 = Causes skin irritation. Serious eye damage/irritation: Eye Damage - Category 1 = Causes serious eye damage. Sensitisation to the respiratory tract: Lack of data. Skin sensitisation: Lack of data. Germ cell mutagenicity/Genotoxicity: Lack of data. Carcinogenicity: Lack of data. Reproductive toxicity: Lack of data. Effects on or via lactation: Lack of data. Specific target organ toxicity (single exposure): Specific Target Organ Toxicity (Single Exposure) - Category 3 = May cause drowsiness or dizziness. Specific target organ toxicity (repeated exposure): Lack of data. Aspiration hazard: Aspiration Toxicity - Category 1 = May be fatal if swallowed and enters airways.
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### Other information:

Information about Naphtha (petroleum), hydrotreated light (CAS 64742-49-0):

LD50 Rat, oral: > 5,000 mg/kg

LD50 Rabbit, dermal: > 2,000 mg/kg

LC50 Rat, inhalative (vapor): > 12 mg/L/6h, no mortality occurred

Information about Allyltrimethoxysilane (CAS 2551-83-9):

LD50 Rat, oral: 7,120 mg/kg (By analogy)

LD50 Rabbit, dermal: 3,259 mg/kg (By analogy)

LC50 Rat, inhalative (vapor): 16.8 mg/L/4h (By analogy)

Information about Titanium tetrabutanolate (CAS 5593-70-4):

LD50 Rat, oral: 4,220 mg/kg

LD50 Rabbit, dermal: 5,300 mg/kg

LC50 Rat, inhalative (dust/mist): 11 mg/L/4h

### Symptoms

release of Methanol: Danger of serious damage to health by prolonged exposure.: > 200 mg/kg.

In case of inhalation: drowsiness, fatigue, Disorientation, headache, nausea.

Leads to unconsciousness in high concentrations.

Harmful: may cause lung damage if swallowed. Danger of aspiration.

In case of ingestion: Intake of larger quantities can cause stomach troubles.

After contact with skin: Irritant.

Prolonged skin contact may degrease the skin and may produce dermatitis.

After eye contact:

Upon direct contact with eyes may cause burning, tearing, redness. Prolonged eye contact may damage the cornea.

## 12. Ecological information

### Ecotoxicity

#### Aquatic toxicity:

Toxic to aquatic life with long lasting effects.

Information about Naphtha (petroleum), hydrotreated light (CAS 64742-49-0):

Fish toxicity:

LL50 Oncorhynchus mykiss: 12 mg/L/96h (OECD 203)

Daphnia toxicity:

EL50 Daphnia magna (Big water flea): 4.5 mg/L/48h (OECD 202)

NOELR Daphnia magna (Big water flea): 2.6 mg/L/21d (OECD 211)

Algae toxicity:

ErL50 Pseudokirchneriella subcapitata (green algae): 3.1 mg/L/72h (OECD 201)

NOELR Pseudokirchneriella subcapitata (green algae): 0.5 mg/L/72h (OECD 201)

### Mobility in soil

No data available

### Persistence and degradability

#### Further details:

Biodegradability:

Information about Naphtha (petroleum), hydrotreated light (CAS 64742-49-0):

Oxygen consumption: 77%/28d (OECD 301 F), easily bio-degradable



## Additional ecological information

Volatile organic compounds (VOC):

95 % by weight

General information:

Do not allow to penetrate into soil, waterbodies or drains.

## 13. Disposal considerations

### Product

Recommendation: Incinerate as hazardous waste according to applicable local, state, and federal regulations.

### Package

Recommendation:

Waste key number:

150102 Plastic packaging

150104 metallic packaging

Dispose of waste according to applicable legislation.

Non-contaminated packages may be recycled.

## 14. Transport information

### UN number

ADR/RID, IMDG, IATA-DGR:

UN 1993

### UN proper shipping name

ADR/RID, IMDG, IATA-DGR:

UN 1993, FLAMMABLE LIQUID, N.O.S. (Naphtha (petroleum), hydrotreated light)

### Transport hazard class(es)

ADR/RID:

Class 3, Code: F1

IMDG:

Class 3, Subrisk -

IATA-DGR:

Class 3

### Packing group

ADR/RID, IMDG, IATA-DGR:

II

### Environmental hazards

Marine pollutant:

yes

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available



### USA: Department of Transportation (DOT)

Identification number: UN1993  
 Proper shipping name: UN 1993, FLAMMABLE LIQUIDS, N.O.S.  
 (Naphtha (petroleum), hydrotreated light)  
 Hazard class or Division: 3  
 Packing Group: II  
 Labels: 3  
 Symbols: G  
 Special Provisions: IB2, T7, TP1, TP8, TP28  
 Packaging – Exceptions: 150  
 Packaging – Non-bulk: 202  
 Packaging – Bulk: 242  
 Quantity limitations – Passenger aircraft / rail: 5 L  
 Quantity limitations – Cargo only: 60 L  
 Vessel stowage – Location: B



### Sea transport (IMDG)

UN number: UN 1993  
 Proper shipping name: UN 1993, FLAMMABLE LIQUID, N.O.S.  
 (Naphtha (petroleum), hydrotreated light)  
 Class or division, Subsidiary risk: Class 3, Subrisk -  
 Packing Group: II  
 EmS: F-E, S-E  
 Special Provisions: 274  
 Limited quantities: 1 L  
 Excepted quantities: E2  
 Package - Instructions: P001  
 Package - Provisions: -  
 IBC - Instructions: IBC02  
 IBC - Provisions: -  
 Tank instructions - IMO: -  
 Tank instructions - UN: T7  
 Tank instructions - Provisions: TP1, TP8, TP28  
 Stowage and handling: Category B.  
 Properties and observations: -  
 Marine pollutant: yes  
 Segregation group: none

### Air transport (IATA)

UN/ID number: UN 1993  
 Proper shipping name: UN 1993, FLAMMABLE LIQUID, N.O.S.  
 (Naphtha (petroleum), hydrotreated light)  
 Class or division, Subsidiary risk: Class 3  
 Packing Group: II  
 Hazard label: Flamm. liquid  
 Excepted Quantity Code: E2  
 Passenger and Cargo Aircraft: Ltd.Qty.: Pack.Instr. Y341 - Max. Net Qty/Pkg. 1 L  
 Passenger and Cargo Aircraft: Pack.Instr. 353 - Max. Net Qty/Pkg. 5 L  
 Cargo Aircraft only: Pack.Instr. 364 - Max. Net Qty/Pkg. 60 L  
 Special Provisions: A3  
 Emergency Response Guide-Code (ERG): 3H

### 15. Regulatory information

#### National regulations - U.S. Federal Regulations

Naphtha (petroleum), hydrotreated light: TSCA Inventory: listed; UVCB

Allyltrimethoxysilane: TSCA Inventory: listed

Titanium tetrabutanolat: TSCA Inventory: listed

Methanol: TSCA Inventory: listed

Clean Air Act:

CAA Hazardous Air Pollutants: yes

CAA SOCM Chemical: yes

Other Environmental Laws:

CERCLA: RQ 5000 lbs.

RCRA Hazardous Wastes: Code U154

SARA Title III - Section 313, Toxic Release: Conc. 1.0% /

Threshold Standard

NIOSH Recommendations:

Occupational Health Guideline: 0397

Butan-1-ol:

TSCA Inventory: listed

Other Environmental Laws:

CERCLA: RQ 5000 lbs.

RCRA Hazardous Wastes: Code U031

SARA Title III - Section 313, Toxic Release: Conc. 1.0% /

Threshold Standard

NIOSH Recommendations:

Occupational Health Guideline: 0076

### National regulations - U.S. State Regulations

Methanol:	<p>California Proposition 65: developmental</p> <p>Delaware Air Quality Management List: DRQ: 5000 - RQ State: Federal Regulations Apply</p> <p>Idaho Air Pollutant List: Title 585: AAC: 13 - EL: 17,3 - OEL: 260 - Title 586: -</p> <p>Main Hazardous Air Pollutants: Me 2005: HAP - Hap Rpt: 2000</p> <p>Massachusetts Haz. Substance codes: 2,4,5,6 F8 F9</p> <p>Minnesota Haz. Substance: Codes: ANO - Ratings: 7,5 - Status: Air Pollutant Title III. TRI.</p> <p>New Jersey RTK Hazardous Substance: DOT: 1230 - Sub No.: 1222 - TPQ: -</p> <p>New York List of Hazardous Substances: RQ-Air: 5000 - RQ-Land: 1 - Note: No Note Associated with this chemical.</p> <p>Pennsylvania Haz. Substance code: E</p> <p>Washington Air Contaminant: TWA: 200 ppm - 260 mg - STEL: 250 ppm - 325 mg Skin: Protective measures should be taken to prevent or reduce skin absorption.</p>
Butan-1-ol:	<p>California Proposition 65 code: -</p> <p>Delaware Air Quality Management List: DRQ: 5000 - RQ State: Federal Regulations Apply</p> <p>Idaho Air Pollutant List: Title 585: AAC: 7.5 - EL: 10 - OEL: 150 - Title 586: -</p> <p>Main Hazardous Air Pollutants: Me 2005: HAP - Hap Rpt: 2000</p> <p>Massachusetts Haz. Substance codes: 2,4,5,6 F8 F9</p> <p>Minnesota Haz. Substance: Codes: AO - Ratings: 7.5 - Status: III. TRI.</p> <p>New Jersey RTK Hazardous Substance: DOT: 1120 - Sub No.: 1330 - TPQ: -</p> <p>New York List of Hazardous Substances: RQ-Air: 5000 - RQ-Land: 1 - Note: No Note Associated with this chemical.</p> <p>Pennsylvania Haz. Substance code: E</p> <p>Washington Air Contaminant: Ceiling: 50 ppm - 150 mg Skin: Protective measures should be taken to prevent or reduce skin absorption.</p>

### 16. Other information

Text for labeling:	<p>Contains 70 - 90 % Naphtha (petroleum), hydrotreated light, &lt; 10 % Allyltrimethoxysilane, &lt; 10 % Titanium tetrabutanolate.</p>
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Hazard rating systems:



NFPA Hazard Rating:

Health: 2 (Moderate)  
Fire: 3 (Serious)  
Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 2 (Moderate)  
Flammability: 3 (Serious)  
Physical Hazard: 0 (Minimal)  
Personal Protection: X = Consult your supervisor

HEALTH	2
FLAMMABILITY	3
PHYSICAL HAZARD	0
	X

Classification procedure:

Physical hazards: on basis of test data  
Health hazards, environmental hazards: calculation method

Abbreviations and acronyms:

Acute Toxicity: Acute toxicity  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road  
Aquatic toxicity - chronic: Hazardous to the aquatic environment - chronic  
AS/NZS: Australian Standards/New Zealand Standards  
Aspiration Toxicity: Aspiration toxicity  
ATEmix: Acute Toxicity Estimate of mixture  
CAS: Chemical Abstracts Service  
CFR: Code of Federal Regulations  
CLP: Classification, Labelling and Packaging  
DMEL: Derived minimal effect level  
DNEL: Derived no-effect level  
EC: European Community  
EL50: Effective loading rate 50%  
EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods  
EN: European Standard  
EQ: Excepted quantities  
Eye Damage: Eye damage  
Flammable Liquid: Flammable liquid  
IATA: International Air Transport Association  
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations  
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
IMDG Code: International Maritime Dangerous Goods Code  
IMO: International Maritime Organization  
LC50: Median lethal concentration  
LD50: Lethal dose 50%  
log P(o/w): Partition coefficient: octanol/water  
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships  
OECD: Organisation for Economic Co-operation and Development  
OEL: Occupational Exposure Limit Value  
OSHA: Occupational Safety and Health Administration  
PBT: Persistent, bioaccumulative and toxic  
PNEC: Predicted no-effect concentration  
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail  
Skin Irritation: Skin irritation  
STOT SE: Specific target organ toxicity - single exposure  
TLV: Threshold Limit Value  
TRGS: Technical Rules for Hazardous Substances  
UN: United Nations  
vPvB: Very persistent and very bioaccumulative  
WEL: Workplace Exposure Limit

Reason of change:

Changes in section 2: Classification, labeling  
Changes in section 3: Composition/information on ingredients  
Changes in section 8: Occupational exposure limit values  
Changes in section 9: Physical and chemical properties  
Changes in section 11: Toxicological information  
Changes in section 12: Ecological information  
General revision

Date of first version:

3/17/1999

**Department issuing data sheet**

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.