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Safety data sheet

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Code: **46S**
 Product name: **OXIFER**

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

Intended use: **SMALTO FERRO ANTICO SABBBIATO**

1.3. Details of the supplier of the safety data sheet

Name: **MACOTA s.r.l.**
 Full address: **Via Piave, 82**
 District and Country: **50053 Empoli (FI)**
ITALIA
 Tel. **0571 450184**
 Fax **0571 450185**

e-mail address of the competent person

responsible for the Safety Data Sheet: **info@macota.it**

Product distribution by: **Macota S.r.l.**

1.4. Emergency telephone number

For urgent inquiries refer to: **Uffici e Stabilimento: Via della Fornace, 9/11/13 - Via Corta 1/b56020 San Romano (PI) Tel. ++39 (0)571 450184 - ++39 (0)571 450185**

SECTION 2. Hazards identification.

2.1. Classification of the substance or mixture.

The product is classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

2.1.1. Regulation 1272/2008 (CLP) and following amendments and adjustments.

Hazard classification and indication:

Aerosol 1	H222
	H229
Eye Irrit. 2	H319

2.1.2. 67/548/EEC and 1999/45/EC Directives and following amendments and adjustments.

Danger Symbols:

F+

R phrases:

12-52/53-67

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


2.2. Label elements.

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.



Signal words: Danger

H222	Extremely flammable aerosol.
H229	Pressurized container: may burst if heated.
H319	Causes serious eye irritation.
P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P210	Keep away from heat / sparks / open flames / hot surfaces. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Pressurized container: do not pierce or burn, even after use.
P264	Wash . . . thoroughly after handling.

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- P280** Wear protective gloves / protective clothing / eye protection / face protection.
- P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313** If eye irritation persists: Get medical advice / attention.
- P410+P412** Protect from sunlight. Do not expose to temperatures exceeding 50°C / 122°F.

2.3. Other hazards.

Information not available.

SECTION 3. Composition/information on ingredients.

3.1. Substances.

Information not relevant.

3.2. Mixtures.

Contains:

Identification.	Conc. %.	Classification 67/548/EEC.	Classification 1272/2008 (CLP).
Dimetiletere			
CAS. 115-10-6	50 - 90	F+ R12, Note U	Flam. Gas 1 H220, Note U
EC. 204-065-8			
INDEX. 603-019-00-8			
ACETONE			
CAS. 67-64-1	10 - 18	R66, R67, F R11, Xi R36	Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, EUH066
EC. 200-662-2			
INDEX. 606-001-00-8			
NAPHTA (PETROL.) HYDROTREATED HEAVY			
CAS. 64742-48-9	7 - 10	Xn R65, Note P	Asp. Tox. 1 H304, Note P
EC. 265-150-3			

INDEX. 649-327-00-6

N-BUTYL ACETATE

CAS. 123-86-4 4 - 7 R10, R66, R67 Flam. Liq. 3 H226, STOT SE 3 H336, EUH066

EC. 204-658-1

INDEX. 607-025-00-1

1-METHOXY-2-PROPANOL ACETATE

CAS. 108-65-6 2 - 3 R10 Flam. Liq. 3 H226

EC. 203-603-9

INDEX. 607-195-00-7

ALUMINIUM POWDER (STABILIZED)

CAS. 7429-90-5 0,8 - 1,7 F R11, F R15, Note T Flam. Sol. 1 H228, Water-react. 2 H261, Note T

EC. 231-072-3

INDEX. 013-002-00-1

XYLENE (MIXTURE OF ISOMERS)

CAS. 1330-20-7 0,8 - 1,7 R10, Xn R20/21, Xi R38, Note C Flam. Liq. 3 H226, Acute Tox. 4 H312, Acute Tox. 4 H332, Skin Irrit. 2 H315, Note C

EC. 215-535-7

INDEX. 601-022-00-9

BARIUM SULFATE

CAS. 7727-43-7 0,8 - 1,7 Substance with a community workplace exposure limit.

EC. 231-784-4

INDEX. -

ETHYLBENZENE

CAS. 100-41-4 0,8 - 1,7 F R11, Xn R20 Flam. Liq. 2 H225, Acute Tox. 4 H332

EC. 202-849-4

INDEX. 601-023-00-4

1,2,4-TRIMETHYLBENZENE

CAS. 95-63-6 0,5 - 0,9 R10, Xn R20, Xi R36/37/38, N R51/53 Flam. Liq. 3 H226, Acute Tox. 4 H332, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Aquatic Chronic 2 H411

For symptoms and effects caused by the contained substances, see chap. 11.

4.3. Indication of any immediate medical attention and special treatment needed.

Information not available.

SECTION 5. Firefighting measures.

5.1. Extinguishing media.

SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

5.2. Special hazards arising from the substance or mixture.

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

If overheated, aerosol cans can deform, explode and be propelled considerable distances. Put a protective helmet on before approaching the fire. Do not breathe combustion products.

5.3. Advice for firefighters.

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.

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).

SECTION 6. Accidental release measures.

6.1. Personal precautions, protective equipment and emergency procedures.


Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site. Send away individuals who are not suitably equipped. Wear protective gloves / protective clothing / eye protection / face protection.

6.2. Environmental precautions.

Do not disperse in the environment.

6.3. Methods and material for containment and cleaning up.

Use inert absorbent material to soak up leaked product. 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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6.4. Reference to other sections.

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

SECTION 7. Handling and storage.

7.1. Precautions for safe handling.

Avoid bunching of electrostatic charges. Do not spray on flames or incandescent bodies. Vapours may catch fire and an explosion may occur; vapour accumulation is therefore to be avoided by leaving windows and doors open and ensuring good cross ventilation. Do not eat, drink or smoke during use. Do not breathe spray.

7.2. Conditions for safe storage, including any incompatibilities.

Store in a place where adequate ventilation is ensured, away from direct sunlight at a temperature below 50°C, away from any combustion sources.

7.3. Specific end use(s).

Information not available.

SECTION 8. Exposure controls/personal protection.

8.1. Control parameters.

Regulatory References:

United Kingdom	EH40/2005 Workplace exposure limits. Containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations (as amended).
Éire	Code of Practice Chemical Agent Regulations 2011.
OEL EU	Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC.
TLV-ACGIH	ACGIH 2012

ACETONE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
WEL	UK	1210	500	3620	1500
OEL	IRL	1210	500		
OEL	EU	1210	500		
TLV-ACGIH		1187	500	1781	750

N-BUTYL ACETATE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
WEL	UK	724	150	966	200
OEL	IRL	710	150	950	200
TLV-ACGIH		713	150	950	200

1-METHOXY-2-PROPANOL ACETATE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
WEL	UK	274	50	548	100	
OEL	IRL	275	50	550	100	SKIN
OEL	EU	275	50	550	100	SKIN

ETHYLBENZENE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
WEL	UK	441	100	552	125	SKIN
OEL	IRL	442	100	884	200	SKIN



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OEL	EU	442	100	884	200	SKIN
TLV-ACGIH		20	100		87	

BARIUM SULFATE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
WEL	UK	4			
OEL	IRL	2			
OEL	EU	0,5			
TLV-ACGIH		10			

XYLENE (MIXTURE OF ISOMERS)

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
WEL	UK	220	50	441	100	
OEL	IRL	221	50	442	100	SKIN
OEL	EU	221	50	442	100	SKIN
TLV-ACGIH		434	100	651	150	

ALUMINIUM POWDER (STABILIZED)

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
WEL	UK	4			
OEL	IRL	1			

TLV-ACGIH 1 0,9

Idrocarburi n-alcani, isoalcani, ciclici, aromatici

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min	
		mg/m ³	ppm	mg/m ³	ppm
TLV-ACGIH			400		400

1,2,4-TRIMETHYLBENZENE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min	
		mg/m ³	ppm	mg/m ³	ppm
WEL	UK		25		
OEL	IRL	100	20		
OEL	EU	100	20		
TLV-ACGIH		123	25		

Legend:

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

TLV of solvent mixture: 262 mg/m³.


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 be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION
None required.

SKIN PROTECTION
Wear category I professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

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EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, a mask with a type AX filter combined with a type P filter should be worn. (see standard EN 14387).

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.

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

SECTION 9. Physical and chemical properties.

9.1. Information on basic physical and chemical properties.

Appearance	aerosol
Colour	Characteristic
Odour	characteristic
Odour threshold.	Not applicable.
pH.	Not available.
Melting point / freezing point.	Not available.
Initial boiling point.	Not applicable.
Boiling range.	Not available.
Flash point.	Not applicable.
Evaporation Rate	Not applicable.
Flammability of solids and gases	flammable gas
Lower inflammability limit.	Not available.
Upper inflammability limit.	Not available.
Lower explosive limit.	Not available.
Upper explosive limit.	Not available.
Vapour pressure.	Not available.
Vapour density	Not available.
Relative density.	0,817 Kg/l
Solubility	insoluble
Partition coefficient: n-octanol/water	Not applicable.
Auto-ignition temperature.	Not available.

Decomposition temperature.	Not applicable.
Viscosity	Not applicable.
Explosive properties	not applicable
Oxidising properties	not applicable

9.2. Other information.

VOC (Directive 1999/13/EC) :	48,99 % - 400,44 g/litre.
VOC (volatile carbon) :	29,44 % - 240,64 g/litre.

SECTION 10. Stability and reactivity.

10.1. Reactivity.

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

1-METHOXY-2-PROPANOL ACETATE: stable but with the air it may slowly develop peroxides that explode with an increase in temperature.
 ACETONE: decomposes under the effect of heat.
 N-BUTYL ACETATE: decomposes readily with water, especially when warm.

10.2. Chemical stability.

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

10.3. Possibility of hazardous reactions.

No hazardous reactions are foreseeable in normal conditions of use and storage.

XYLENE (MIXTURE OF ISOMERS): stable, but may develop violent reactions in the presence of strong oxidising agents such as sulphuric and nitric acids and perchlorates. May form explosive mixtures with the air.

1-METHOXY-2-PROPANOL ACETATE: may react violently with oxidising agents and strong acids and alkaline metals.

ETHYLBENZENE: reacts violently with strong oxidising agents and attacks various types of plastics. Can form explosive mixtures with the air.


ACETONE: risk of explosion on contact with: bromine trifluoride, difluoro dioxide, hydrogen peroxide, nitrosyl chloride, 2-methyl-1,3 butadiene, nitromethane, nitrosyl perchlorate. Can react dangerously with: potassium tert-butoxide, alkaline hydroxides, bromine, bromoform, isoprene, sodium, sulphur dioxide, chromium trioxide, chromyl chloride, nitric acid, chloroform, peroxymonosulphuric acid, phosphoryl chloride, chromosulphuric acid, fluorine, strong oxidising agents. Develops flammable gases with nitrosyl perchlorate.

N-BUTYL ACETATE: risk of explosion on contact with: strong oxidising agents. Can react dangerously with alkaline hydroxides, potassium tert-butoxide. Forms explosive mixtures with the air.

10.4. Conditions to avoid.

Avoid overheating.

1-METHOXY-2-PROPANOL ACETATE: store in an inert atmosphere, sheltered from moisture because it hydrolyses easily.

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ACETONE: avoid exposure to sources of heat and naked flames.
N-BUTYL ACETATE: avoid exposure to moisture, sources of heat and naked flames.

10.5. Incompatible materials.

Strong reducing or oxidising agents, strong acids or alkalis, hot material.

1-METHOXY-2-PROPANOL ACETATE: oxidising agents, strong acids and alkaline metals.
ACETONE: acid and oxidising substances.
N-BUTYL ACETATE: water, nitrates, strong oxidising agents, acids and alkalis and potassium tert-butoxide.

10.6. Hazardous decomposition products.

ETHYLBENZENE: methane, styrene, hydrogen, ethane.
ACETONE: ketenes and other irritating compounds.

SECTION 11. Toxicological information.

11.1. Information on toxicological effects.

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.

Acute effects: stinging eyes. Symptoms may include: rubescence, edema, pain and lachrymation.
Vapour inhalation may moderately irritate the upper respiratory tract. Contact with skin may cause slight irritation.
Ingestion may cause health problems, including stomach pain and sting, nausea and sickness.

XYLENE (MIXTURE OF ISOMERS): has a toxic effect on the CNS (encephalopathies). Irritating to the skin, conjunctivae, cornea and respiratory apparatus.

1-METHOXY-2-PROPANOL ACETATE: the main way of entry is the skin, whereas the respiratory way is less important owing to the low vapour tension of the product. Concentrations above 100 ppm cause eye irritation, nose and oropharynx. At 1000 ppm disturbance in the equilibrium and severe eye irritation is observed. Clinical and biological examinations carried out on exposed volunteers revealed no anomalies. Acetate produces greater skin and ocular irritation on direct contact. No chronic effects have been reported in man.

ETHYLBENZENE: like the benzene homologues, may exert an effect on the CNS with depression, narcosis, often preceded by dizziness and accompanied by headache. It is irritating to the skin, conjunctivae and respiratory apparatus.

N-BUTYL ACETATE: in humans the substance's vapours cause irritation to the eyes and nose. In the event of repeated exposure, there is skin irritation, dermatosis (with dryness and flaking of the skin) and keratitis.

XYLENE (MIXTURE OF ISOMERS)
LD50 (Oral). 3523 mg/kg Rat
LD50 (Dermal). 4350 mg/kg Rabbit
LC50 (Inhalation). 26 mg/l/4h Rat

BARIUM SULFATE
LD50 (Oral). > 3000 mg/kg Mouse

1-METHOXY-2-PROPANOL ACETATE

LD50 (Oral). 8530 mg/kg Rat

LD50 (Dermal). > 5000 mg/kg Rat

ETHYLBENZENE

LD50 (Oral). 3500 mg/kg Rat

LD50 (Dermal). 15354 mg/kg Rabbit

LC50 (Inhalation). 17,2 mg/l/4h Rat

N-BUTYL ACETATE

LD50 (Oral). > 6400 mg/kg Rat

LD50 (Dermal). > 5000 mg/kg Rabbit

LC50 (Inhalation). 21,1 mg/l/4h Rat

Idrocarburi n-alcani, isoalcani, ciclici, aromatici

LD50 (Oral). > 15000 mg/kg ratto

LD50 (Dermal). > 3400 mg/l coniglio

LC50 (Inhalation). > 13,1 mg/l ratto

SECTION 12. Ecological information.

No specific data are available for this product. Handle it according to good working practices. Avoid littering. Do not contaminate soil, sewers and waterways. Inform the competent authorities, should the product reach waterways or sewers or contaminate soil or vegetation. Please take all the proper measures to reduce harmful effects on aquifers.

12.1. Toxicity.

Idrocarburi n-alcani, isoalcani, ciclici, aromatici

LC50 - for Fish.

< 30 mg/l/96h *Oncorhynchus mykiss*

EC50 - for Crustacea.

< 22 mg/l/48h *Daphnia magna*

EC50 - for Algae / Aquatic Plants.

< 10 mg/l/72h *Pseudokirchneriella subcapitata*

Chronic NOEC for Algae / Aquatic Plants.

< 0,09 mg/l *Daphnia magna*

12.2. Persistence and degradability.

Information not available.

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 greater than 0,1%.

12.6. Other adverse effects.

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Information not available.

SECTION 13. Disposal considerations.

13.1. Waste treatment methods.

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

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

Avoid littering. Do not contaminate soil, sewers and waterways.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

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

SECTION 14. Transport information.

These goods must be transported by vehicles authorized to the carriage of dangerous goods according to the provisions set out in the current edition of the Code of International Carriage of Dangerous Goods by Road (ADR) and in all the applicable national regulations. These goods must be packed in their original packagings or in packagings made of materials resistant to their content and not reacting dangerously with it. People loading and unloading dangerous goods must be trained on all the risks deriving from these substances and on all actions that must be taken in case of emergency situations.

Road and rail transport:



ADR/RID Class:	2	UN:	1950
Packing Group:	-		
Label:	2.1		
Nr. Kemler:	--		
Limited Quantity:	1 L		
Tunnel restriction code:	(D)		
Proper Shipping Name:	AEROSOLS, FLAMMABLE		

Carriage by sea (shipping):



IMO Class:	2.1	UN:	1950
Packing Group:	-		

Label: 2.1
EMS: F-D, S-U
Marine Pollutant. NO
Proper Shipping Name: AEROSOLS

Transport by air:



IATA: 2 UN: 1950
Packing Group: -
Label: 2.1
Cargo:
Packaging instructions: 203 Maximum quantity: 150 Kg
Pass.:
Packaging instructions: 203 Maximum quantity: 75 Kg
Special Instructions: A145, A167, A802
Proper Shipping Name: AEROSOLS, FLAMMABLE

SECTION 15. Regulatory information.

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

Seveso category. 8

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006.


Contained substance.

Point. 28-29 NAPHTA (PETROL.)
HYDROTREATED
HEAVY

Substances in Candidate List (Art. 59 REACH).

None.

Substances subject to authorisation (Annex XIV REACH).

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None.

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None.

Substances subject to the Rotterdam Convention:

None.

Substances subject to the Stockholm Convention:

None.

Healthcare controls.

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

15.2. Chemical safety assessment.

No chemical safety assessment has been processed for the mixture and the substances it contains.

SECTION 16. Other information.

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

Flam. Gas 1	Flammable gas, category 1
Aerosol 1	Aerosol, category 1
Aerosol 3	Aerosol, category 3
Flam. Liq. 2	Flammable liquid, category 2
Flam. Liq. 3	Flammable liquid, category 3
Flam. Sol. 1	Flammable solid, category 1
Acute Tox. 4	Acute toxicity, category 4
STOT RE 1	Specific target organ toxicity - repeated exposure, category 1
Asp. Tox. 1	Aspiration hazard, category 1

Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H229	Pressurized container: may burst if heated.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H228	Flammable solid.
H261	In contact with water releases flammable gases.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H372	Causes damage to organs through prolonged or repeated exposure.
H304	May be fatal if swallowed and enters airways.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

Text of risk (R) phrases mentioned in section 2-3 of the sheet:

R10	FLAMMABLE.
R11	HIGHLY FLAMMABLE.



R12	EXTREMELY FLAMMABLE.
R15	CONTACT WITH WATER LIBERATES EXTREMELY FLAMMABLE GASES.
R20	HARMFUL BY INHALATION.
R20/21	HARMFUL BY INHALATION AND IN CONTACT WITH SKIN.
R36	IRRITATING TO EYES.
R36/37/38	IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
R37	IRRITATING TO RESPIRATORY SYSTEM.
R38	IRRITATING TO SKIN.
R48/20	HARMFUL: DANGER OF SERIOUS DAMAGE TO HEALTH BY PROLONGED EXPOSURE THROUGH INHALATION.
R51/53	TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.
R52/53	HARMFUL TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.
R65	HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED.
R66	REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING.
R67	VAPOURS MAY CAUSE DROWSINESS AND DIZZINESS.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- 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
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- 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.
- TWA STEL: Short-term exposure limit

- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation.

GENERAL BIBLIOGRAPHY

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2. Directive 67/548/EEC and following amendments and adjustments
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5. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
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7. Regulation (EC) 286/2011 (II Atp. CLP) of the European Parliament
8. The Merck Index. - 10th Edition
9. Handling Chemical Safety
10. Niosh - Registry of Toxic Effects of Chemical Substances
11. INRS - Fiche Toxicologique (toxicological sheet)
12. Patty - Industrial Hygiene and Toxicology
13. N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
14. ECHA website

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.

Changes to previous review:

The following sections were modified:

02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16.