

TRANSMISSION OIL

Revision nr. 14

Dated 10/11/2022

Printed on 25/07/2023

Page n. 1/14

Replaced revision:13 (Printed on: 27/01/2022)

# \_ . \_ . \_ . . . .

Safety Data Sheet

According to Annex II to REACH - Regulation (EU) 2020/878 and to Annex II to UK REACH

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

1.1. Product identifier

Code: M 404

Product name TRANSMISSION OIL

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

Intended use Lubricating oil for transmissions and gears

1.3. Details of the supplier of the safety data sheet

Name MAROIL S.R.L.

Full address LOC. PONTE ALLA CILIEGIA

District and Country 55011 MARGINONE ALTOPASCIO (LU)

**ITALIA** 

Tel. 0583/28731 Fax 0583/286542

e-mail address of the competent person

responsible for the Safety Data Sheet msds@bardahl.it

1.4. Emergency telephone number

For urgent inquiries refer to Numeri telefonici dei principali Centri Antiveleni italiani (attivi 24/24 ore)

Centro Antiveleni di Pavia 0382 24444 (CAV IRCCS Fondazione Maugeri - Pavia)

Centro Antiveleni di Milano 02 66101029 (CAV Ospedale Niguarda Ca` Granda - Milano)

Centro Antiveleni di Bergamo 800 883300 (CAV Ospedali Riuniti - Bergamo) Centro Antiveleni di Firenze 055 7947819 (CAV Ospedale Careggi - Firenze) Centro Antiveleni di Roma 06 3054343 (CAV Policlinico Gemelli - Roma) Centro Antiveleni di Roma 06 49978000 (CAV Policlinico Umberto I - Roma) Centro Antiveleni di Napoli 081 7472870 (CAV Ospedale Cardarelli - Napoli)

# **SECTION 2. Hazards identification**

# 2.1. Classification of the substance or mixture

The product is not classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP).

However, since the product contains hazardous substances in concentrations such as to be declared in section no. 3, it requires a safety data sheet with appropriate information, compliant to (EU) Regulation 2020/878.

Hazard classification and indication:

2.2. Label elements



Revision nr. 14

Dated 10/11/2022
Printed on 25/07/2023

Page n. 2/14

Replaced revision:13 (Printed on: 27/01/2022)

# TRANSMISSION OIL

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

Hazard pictograms: --

Signal words: --

Hazard statements:

**EUH210** Safety data sheet available on request.

**EUH208** Contains: Magnesium metaborate, Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide,

propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14- tert-alkyl, Polysulfides, di-tert-Bu

May produce an allergic reaction.

Precautionary statements:

--

#### 2.3. Other hazards

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

The product does not contain substances with endocrine disrupting properties in concentration ≥ 0.1%.

# **SECTION 3. Composition/information on ingredients**

# 3.2. Mixtures

Contains:

Identification x = Conc. % Classification (EC) 1272/2008 (CLP)

Polysulfides, di-tert-Bu

INDEX -  $4 \le x < 4,5$  Skin Sens. 1B H317, Aquatic Chronic 3 H412

EC 273-103-3 Skin Sens. 1B H317: ≥ 46%

CAS 68937-96-2

REACH Reg. 01-2119540515-43

Mineral oil

INDEX  $1,5 \le x < 2$  Asp. Tox. 1 H304

EC CAS -

REACH Reg. Miscela

Reaction products of 4-methyl-2pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines,

C12-14- tert-alkyl

INDEX - 1,5 ≤ x < 2 Acute Tox. 4 H302, Eye Irrit. 2 H319, Skin Sens. 1B H317, Aquatic Chronic 2

H411

EC 931-384-6 Skin Sens. 1B H317: ≥ 9,39%, Eye Irrit. 2 H319: ≥ 50,01%

CAS - LD50 Oral: 2000 mg/kg



Revision nr. 14

Dated 10/11/2022

Printed on 25/07/2023

Page n. 3/14

Replaced revision:13 (Printed on: 27/01/2022)

TRANSMISSION OIL

REACH Reg. 01-2119493620-38

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

#### Mineral oil

The mineral oil contained can be described by one or more of the following: EC No. 265-157-1, Registration No. 01-2119484627-25, Distillates (petroleum), hydrotreated heavy paraffinic; EC No. 265-169-7, Registration No. 01-2119471299-27, Distillates (petroleum), solvent-dewaxed heavy paraffinic, EC No. 265-158-7, Registration No. 01-2119487077-29, Distillates (petroleum), hydrotreated light paraffinic; EC No. 265-159-2, Registration No. 01-2119480132-48, Distillates (petroleum), solvent-dewaxed light paraffinic.

#### **SECTION 4. First aid measures**

#### 4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately. INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

#### 4.2. Most important symptoms and effects, both acute and delayed

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

#### 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 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. 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).



Revision nr. 14

Dated 10/11/2022

Printed on 25/07/2023

Page n. 4/14

Replaced revision:13 (Printed on: 27/01/2022)

# TRANSMISSION OIL

# **SECTION 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.

# **SECTION 7. Handling and storage**

### 7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

#### 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. Keep containers away from any incompatible materials, see section 10 for details.

### 7.3. Specific end use(s)

Information not available

# **SECTION 8. Exposure controls/personal protection**

#### 8.1. Control parameters

Regulatory references:

ITA Italia Decreto Legislativo 9 Aprile 2008, n.81

# Polysulfides, di-tert-Bu

Predicted no-effect concentration - PNEC

Normal value in fresh water 0,24 µgr/l



Revision nr. 14

Dated 10/11/2022

Printed on 25/07/2023
Page n. 5/14

Replaced revision:13 (Printed on: 27/01/2022)

# TRANSMISSION OIL

Normal value in marine water	0,024	μgr/l	
Normal value for fresh water sediment	0,94	mg/kg	
Normal value for marine water sediment	0,094	mg/kg	
Normal value of STP microorganisms	4,51	mg/l	
Normal value for the food chain (secondary poisoning)	6,66	mg/kg	_
Normal value for the terrestrial compartment	0.0181	ma/ka	

#### Health - Derived no-effect level - DNEL / DMEL

Health - Derived no-effect	Ct level - DNEL / L	JMEL						
	Effects on				Effects on			
	consumers				workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				0,167 mg/kg				
Inhalation				0,58 mg/m3				3,29 mg/m3
Skin				1,67 mg/kg				4,67 mg/kg

# Mineral oil

Threshold Limit Value						
Туре	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	Coservations
VLEP	ITA	5				

Predicted no-effect concentration - PNEC

Normal value for the food chain (secondary poisoning) 9,33 mg/kg

	Health -	<b>Derived</b>	no-effect	level -	DNEL /	DMEL
--	----------	----------------	-----------	---------	--------	------

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				0,74 mg/kg				
Inhalation			1,19 mg/m3				5,58 mg/m3	2,73 mg/m3

Skin 0,97 mg/kg

### Legend:

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

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

### 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.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

#### HAND PROTECTION

Protect hands with category III work gloves (see standard EN 374).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

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.



Revision nr. 14

Dated 10/11/2022

Printed on 25/07/2023

Page n. 6/14

Replaced revision:13 (Printed on: 27/01/2022)

# TRANSMISSION OIL

#### SKIN PROTECTION

Wear category I professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

### 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, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). 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 (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

# ENVIRONMENTAL EXPOSURE CONTROLS

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

Properties Appearance	<b>Value</b> liquid	Information
Colour	yellow	
Odour	characteristic	
Melting point / freezing point	not available	
Initial boiling point	not available	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	141 °C	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
рН	not available	
Kinematic viscosity	133 cSt	
Solubility	insoluble	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	0,889 kg/l	
Relative vapour density	not available	
Particle characteristics	not applicable	

# 9.2. Other information

9.2.1. Information with regard to physical hazard classes



Revision nr. 14

Dated 10/11/2022

Printed on 25/07/2023

Page n. 7/14

Replaced revision:13 (Printed on: 27/01/2022)

# TRANSMISSION OIL

Information not available

9.2.2. Other safety characteristics

Viscosità a 40°C 133,7 cSt
Viscosità a 100°C 14,1 cSt
Punto di scorrimento -45°C

Consistenza Non pertinente
Punto di gocciolamento Non pertinente

# **SECTION 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

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

#### 10.4. Conditions to avoid

None in particular. However the usual precautions used for chemical products should be respected.

# 10.5. Incompatible materials

Information not available

### 10.6. Hazardous decomposition products

Information not available

# **SECTION 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 hazard classes as defined in Regulation (EC) No 1272/2008



Revision nr. 14

Dated 10/11/2022

	TRANSMISSION OIL	
		Page n. 8/14 Replaced revision:13 (Printed on: 27/01/2022)
Metabolism, toxicokinetics, mechanis	m of action and other information	
Information not available		
Information on likely routes of exposu	<u>re</u>	
Information not available		
Delayed and immediate effects as we	Il as chronic effects from short and long-term exposure	
Information not available		
Interactive effects		
Information not available		
ACUTE TOXICITY		
ATE (Inhalation) of the mixture: ATE (Oral) of the mixture: ATE (Dermal) of the mixture:	Not classified (no significant >2000 mg/kg Not classified (no significant	
Reaction products of 4-methyl-2-pent C12-14- tert-alkyl	anol and diphosphorus pentasulfide, propoxylated, este	erified with diphosphorus pentaoxide, and salted by amines,
LD50 (Oral):	2000 mg/kg Equivalente o si	milare OECD Guideline 401 - Ratto
SKIN CORROSION / IRRITATION		
Does not meet the classification criter	ria for this hazard class	
SERIOUS EYE DAMAGE / IRRITATI	<u>ON</u>	

Does not meet the classification criteria for this hazard class

# RESPIRATORY OR SKIN SENSITISATION

May produce an allergic reaction. Contains:



Revision nr. 14

Dated 10/11/2022
Printed on 25/07/2023

Page n. 9/14

Replaced revision:13 (Printed on: 27/01/2022)

# TRANSMISSION OIL

Magnesium metaborate

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14- tert-alkyl

Polysulfides, di-tert-Bu

### GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

### CARCINOGENICITY

Does not meet the classification criteria for this hazard class

### REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

# STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

# 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 Viscosity: 133 cSt

#### 11.2. Information on other hazards

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

# **SECTION 12. Ecological information**

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or



Revision nr. 14

Dated 10/11/2022 Printed on 25/07/2023

Page n. 10/14

Replaced revision:13 (Printed on: 27/01/2022)

# TRANSMISSION OIL

contaminate soil or vegetation.

### 12.1. Toxicity

Mineral oil

LC50 - for Fish

EC50 - for Crustacea

EC50 - for Algae / Aquatic Plants

Chronic NOEC for Crustacea

Polysulfides, di-tert-Bu EC50 - for Crustacea

EC50 - for Algae / Aquatic Plants

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14- tert-alkyl

LC50 - for Fish

EC50 - for Crustacea

EC50 - for Algae / Aquatic Plants

Chronic NOEC for Crustacea

Chronic NOEC for Algae / Aquatic Plants

> 100 mg/l/96h Pimephales promelas

> 10000 mg/l/48h Dafnia

> 100 mg/l/72h Alghe verdi (Scenedesmus quadricauda)

> 10 mg/l/21d Dafnia

> 100 mg/l/72h Alga

63 mg/l/48h Dafnia

24 mg/l/96h Trota arcobaleno

91,4 mg/l/48h Dafnia

6,4 mg/l/96h Selenastrum capricomutum - OECD Guideline 201

0,12 mg/l/21d Dafnia

1,7 mg/l/96h Selenastrum capricomutum - OECD Guideline 201

# 12.2. Persistence and degradability

Mineral oil

NOT rapidly degradable

OECD TG 301 B, 31 %, 28 d, Non facilmente degradabile. Polysulfides, di-tert-Bu

NOT rapidly degradable

OECD TG 301 B, 13 %, 28 d

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14- tert-alkyl

NOT rapidly degradable

OECD TG 301 B, 7,4 %, 28 d 12.3. Bioaccumulative potential

Polysulfides, di-tert-Bu

Partition coefficient: n-octanol/water

6 Log Kow Misurato

## 12.4. Mobility in soil

Information not available



Revision nr. 14

Dated 10/11/2022

Printed on 25/07/2023

Page n. 11/14

Replaced revision:13 (Printed on: 27/01/2022)

# TRANSMISSION OIL

#### 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. Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

#### 12.7. Other adverse effects

Information not available

# **SECTION 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.
CONTAMINATED PACKAGING

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

# **SECTION 14. Transport information**

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

### 14.1. UN number or ID number

not applicable

# 14.2. UN proper shipping name

not applicable

#### 14.3. Transport hazard class(es)

not applicable

# 14.4. Packing group



Revision nr. 14

Dated 10/11/2022

Printed on 25/07/2023

Page n. 12/14

Replaced revision:13 (Printed on: 27/01/2022)

TRANSMISSION OIL

not applicable

14.5. Environmental hazards

not applicable

14.6. Special precautions for user

not applicable

14.7. Maritime transport in bulk according to IMO instruments

Information not relevant

# **SECTION 15. Regulatory information**

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

Seveso Category - Directive 2012/18/EU: None

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

None

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors

not applicable

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage ≥ than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None



Revision nr. 14

Dated 10/11/2022 Printed on 25/07/2023

Page n. 13/14

Replaced revision:13 (Printed on: 27/01/2022)

# TRANSMISSION OIL

Substances subject to the Stockholm Convention:

None

Healthcare controls

Information not available

#### 15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

# **SECTION 16. Other information**

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

Acute Tox. 4 Acute toxicity, category 4 Asp. Tox. 1 Aspiration hazard, category 1 Eye Irrit. 2 Eye irritation, category 2 Skin Sens. 1B Skin sensitization, category 1B

**Aquatic Chronic 2** Hazardous to the aquatic environment, chronic toxicity, category 2 **Aquatic Chronic 3** Hazardous to the aquatic environment, chronic toxicity, category 3

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H319 Causes serious eye irritation. H317 May cause an allergic skin reaction. H411 Toxic to aquatic life with long lasting effects.

H412 Harmful to aquatic life with long lasting effects.

EUH210 Safety data sheet available on request.

# LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect) CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 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: 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



Revision nr. 14

Dated 10/11/2022

Printed on 25/07/2023

Page n. 14/14

Replaced revision:13 (Printed on: 27/01/2022)

# TRANSMISSION OIL

- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 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: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

# GENERAL BIBLIOGRAPHY

- 1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
- 2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
- 3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
- Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
- 5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
- 6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament 7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
- 8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
- 9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament 10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
- 11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
- 12. Regulation (EU) 2016/1179 (IX Atp. CLP)
- 13. Regulation (EU) 2017/776 (X Atp. CLP)
- 14. Regulation (EU) 2018/669 (XI Atp. CLP)
- 15. Regulation (EU) 2019/521 (XII Atp. CLP)
- 16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
- 17. Regulation (EU) 2019/1148
- 18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
- 19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
- 20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP) 21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)
- 22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)
- The Merck Index. 10th Edition Handling Chemical Safety
- INRS Fiche Toxicologique (toxicological sheet)
- Patty Industrial Hygiene and Toxicology
- N.I. Sax Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals Ministry of Health and ISS (Istituto Superiore di Sanità) Italy

#### 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

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

Changes to previous review:

The following sections were modified:

02 / 03 / 08 / 11 / 12 / 13 / 15 / 16.