

Safety Data Sheet

According to Annex II to REACH - Regulation 2015/830

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

1.1. Product identifier

Code: 411 00 04100-2626
Product name: REMOVER

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

Intended use: Solvent based cleaner

1.3. Details of the supplier of the safety data sheet

Name: Meccanocar Italia S.r.l.
Full address: Via San Francesco, 22
District and Country: 56033 Capannoli (PI)
Italy
Tel. +39 0587 609433
Fax +39 0587 607145

e-mail address of the competent person
responsible for the Safety Data Sheet

moreno.meini@meccanocar.it

1.4. Emergency telephone number

For urgent inquiries refer to

National Poisons Information Service: +44 121 507 4123

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 (EU) Regulation 2015/830. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Aerosol, category 1	H222 H229	Extremely flammable aerosol. Pressurised container: may burst if heated.
Eye irritation, category 2	H319	Causes serious eye irritation.
Skin irritation, category 2	H315	Causes skin irritation.

2.2. Label elements

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

Hazard pictograms:

REMOVER

Signal words: Danger

Hazard statements:

H222 Extremely flammable aerosol.
H229 Pressurised container: may burst if heated.
H319 Causes serious eye irritation.
H315 Causes skin irritation.

Precautionary statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P251 Do not pierce or burn, even after use.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C / 122°F.
P211 Do not spray on an open flame or other ignition source.
P201 Obtain special instructions before use.
P280 Wear protective gloves/ protective clothing / eye protection / face protection.

Contains: 1,3 DIOXALANE

2.3. Other hazards

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

SECTION 3. Composition/information on ingredients**3.2. Mixtures**

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
METHYLAL		
CAS 109-87-5	50 ≤ x < 54	Flam. Liq. 2 H225
EC 203-714-2		
INDEX		
Reg. no. 01-2119664781-31-XXXX		
PROPANE		
CAS 74-98-6	16,5 ≤ x < 18	Flam. Gas 1A H220, Press. Gas (Liq.) H280, Classification note according to Annex VI to the CLP Regulation: U
EC 200-827-9		
INDEX 601-003-00-5		
Reg. no. 01-2119486944-21-XXXX		
1,3 DIOXALANE		
CAS 646-06-0	16,5 ≤ x < 18	Flam. Liq. 2 H225, Repr. 1A H360, Eye Irrit. 2 H319
EC 211-463-5		

REMOVER

INDEX 605-017-00-2

Reg. no. 01-2119490744-29-XXXX

PROPAN-2-OLCAS 67-63-0 $6 \leq x < 7$ Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336

EC 200-661-7

INDEX 603-117-00-0

Reg. no. 01-2119457558-25-XXXX

ETHANOLCAS 64-17-5 $6 \leq x < 7$ Flam. Liq. 2 H225, Eye Irrit. 2 H319

EC 200-578-6

INDEX 603-002-00-5

Reg. no. 01-2119457610-43-XXXX

METHYL ETHYL KETONECAS 78-93-3 $1 \leq x < 1,5$ Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, EUH066

EC 201-159-0

INDEX 606-002-00-3

Reg. no. 01-2119457290-43-XXXX

BUTANECAS 106-97-8 $1 \leq x < 1,5$ Flam. Gas 1A H220, Press. Gas (Liq.) H280, Classification note according to Annex VI to the CLP Regulation: C U

EC 203-448-7

INDEX 601-004-00-0

Reg. no. 01-2119474691-32-XXXX

ETHANOLAMINECAS 141-43-5 $1 \leq x < 1,5$ Acute Tox. 4 H302, Acute Tox. 4 H312, Acute Tox. 4 H332, Skin Corr. 1B H314, Eye Dam. 1 H318, STOT SE 3 H335, Aquatic Chronic 3 H412

EC 205-483-3

INDEX 603-030-00-8

Reg. no. 01-2119486455-28-XXXX

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

The product is an aerosol containing propellants. For the purposes of calculation of the health hazards, propellants are not considered (unless they have health hazards). The percentages indicated are inclusive of the propellants.

Percentage of propellants: 18,50 %

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 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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

REMOVER

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

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.

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

REMOVER**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 / 122°F, 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:

ESP	España	LÍMITES DE EXPOSICIÓN PROFESIONAL PARA AGENTES QUÍMICOS EN ESPAÑA 2019 (INSST)
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Third edition,published 2018)
ITA	Italia	DIRETTIVA (UE) 2017/164 DELLA COMMISSIONE del 31 gennaio 2017
NOR	Norge	Fastsatt av Arbeids- og sosialdepartementet 21. august 2018 med hjemmel i lov 17. juni 2005 nr. 62 om arbeidsmiljø, arbeidstid, stillingsvern mv. (arbeidsmiljøloven) § 1-3, § 1-4 og § 4-5
PRT	Portugal	Ministério da Economia e do Emprego Consolida as prescrições mínimas em matéria de protecção dos trabalhadores contra os riscos para a segurança e a saúde devido à exposição a agentes químicos no trabalho - Diário da República, 1.ª série - N.º 111 - 11 de junho de 2018
EU	OEL EU	Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2019

METHYLAL**Threshold Limit Value**

Type	Country	TWA/8h	STEL/15min	Remarks / Observations
		mg/m3	ppm	
			mg/m3	ppm
VLA	ESP	3165	1000	
VLEP	FRA	3100	1000	
WEL	GBR	3160	1000	3950 1250
TLV	NOR	1550	500	
TLV-ACGIH		3112	1000	

Predicted no-effect concentration - PNEC

Normal value in fresh water	14,577	mg/l
Normal value in marine water	1,477	mg/l
Normal value for fresh water sediment	13,135	mg/kg
Normal value for marine water sediment	1,313	mg/kg
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	4,654	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Effects on consumers

Effects on workers

REMOVER

Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				18,1 mg/kg bw/d				
Inhalation				31,5 mg/m3				126,6 mg/m3
Skin				18,1 mg/kg bw/d				17,9 mg/kg bw/d

1,3 DIOXALANE**Threshold Limit Value**

Type	Country	TWA/8h	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic	Remarks / Observations
		mg/m3	ppm	mg/m3	ppm				
VLA	ESP	61	20						
TLV-ACGIH		61	20						

Predicted no-effect concentration - PNEC

Normal value in fresh water				19,7		mg/l			
Normal value in marine water				1,97		mg/l			
Normal value for fresh water sediment				77,7		mg/kg			
Normal value for marine water sediment				7,77		mg/kg			
Normal value of STP microorganisms				1		mg/l			
Normal value for the terrestrial compartment				2,62		mg/kg			

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation								3,306 mg/m3
Skin								1,18 mg/kg bw/d

PROPANE**Threshold Limit Value**

Type	Country	TWA/8h	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic	Remarks / Observations
		mg/m3	ppm	mg/m3	ppm				
VLA	ESP		1000						
TLV	NOR	900	500						
TLV-ACGIH			1000						

ETHANOL**Threshold Limit Value**

Type	Country	TWA/8h	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic	Remarks / Observations
		mg/m3	ppm	mg/m3	ppm				
VLA	ESP			1910	1000				
VLEP	FRA	1900	1000	9500	5000				
WEL	GBR	1920	1000						
TLV	NOR	950	500						
TLV-ACGIH				1884	1000				

Predicted no-effect concentration - PNEC

Normal value in fresh water				0,96		mg/l			
Normal value in marine water				0,79		mg/l			

REMOVER

Normal value for fresh water sediment	3,6	mg/kg
Normal value for marine water sediment	2,9	mg/kg
Normal value of STP microorganisms	580	mg/l
Normal value for the food chain (secondary poisoning)	0,38	mg/kg
Normal value for the terrestrial compartment	0,63	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				87 mg/kg bw/d				
Inhalation				114 mg/m3				950 mg/m3
Skin				206 mg/kg bw/d				343 mg/kg bw/d

PROPAN-2-OL**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
VLA	ESP	500	200	1000	400	
VLEP	FRA			980	400	
WEL	GBR	999	400	1250	500	
TLV	NOR	245	100			
TLV-ACGIH		492	200	983	400	

Predicted no-effect concentration - PNEC

Normal value in fresh water	140,9	mg/l
Normal value in marine water	140,9	mg/l
Normal value for fresh water sediment	552	mg/kg
Normal value for marine water sediment	552	mg/kg
Normal value of STP microorganisms	2251	mg/l
Normal value for the food chain (secondary poisoning)	160	mg/kg
Normal value for the terrestrial compartment	28	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				26 mg/kg bw/d				
Inhalation				89 mg/m3				500 mg/m3
Skin				319 mg/kg bw/d				888 mg/kg bw/d

ETHANOLAMINE**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
VLA	ESP	2,5	1	7,5	3	SKIN
VLEP	FRA	2,5	1	7,6	3	SKIN
WEL	GBR	2,5	1	7,6	3	SKIN

REMOVER

VLEP	ITA	2,5	1	7,6	3	SKIN
TLV	NOR	2,5	1			SKIN
VLE	PRT	2,5	1	7,6	3	SKIN
OEL	EU	2,5	1	7,6	3	SKIN
TLV-ACGIH		7,5	3	15	6	

Predicted no-effect concentration - PNEC						
Normal value in fresh water				0,07	mg/l	
Normal value in marine water				0,007	mg/l	
Normal value for fresh water sediment				0,357	mg/kg	
Normal value for marine water sediment				0,036	mg/kg	
Normal value of STP microorganisms				100	mg/l	
Normal value for the terrestrial compartment				1,29	mg/kg	

Health - Derived no-effect level - DNEL / DMEL								
Route of exposure	Effects on consumers			Effects on workers				
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				1,5 mg/kg bw/d				
Inhalation			0,28 mg/m3	0,18 mg/m3			0,51 mg/m3	1 mg/m3
Skin				1,5 mg/kg bw/d				3 mg/kg bw/d

BUTANE
Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations
		mg/m3	ppm	
VLA	ESP		1000	Gases
VLEP	FRA	1900	800	
WEL	GBR	1450	600	1810 750
TLV	NOR	600	250	
TLV-ACGIH				1000

METHYL ETHYL KETONE
Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations
		mg/m3	ppm	
VLA	ESP	600	200	900 300
VLEP	FRA	600	200	900 300 SKIN
WEL	GBR	600	200	899 300 SKIN
VLEP	ITA	600	200	900 300
TLV	NOR	220	75	
VLE	PRT	600	200	900 300
OEL	EU	600	200	900 300
TLV-ACGIH		590	200	885 300

Predicted no-effect concentration - PNEC					
Normal value in fresh water				55,8	mg/l

REMOVER

Normal value in marine water	55,8	mg/l
Normal value for fresh water sediment	284,74	mg/kg
Normal value for marine water sediment	284,74	mg/kg
Normal value of STP microorganisms	709	mg/l
Normal value for the food chain (secondary poisoning)	1000	mg/kg
Normal value for the terrestrial compartment	22,5	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers			Chronic systemic	Effects on workers		
	Acute local	Acute systemic	Chronic local		Acute local	Acute systemic	Chronic local
Oral				31 mg/kg bw/d			
Inhalation				106 mg/m3			600 mg/m3
Skin				412 mg/kg bw/d			1161 mg/kg bw/d

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.

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.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION

None required.

SKIN PROTECTION

Wear category II 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, 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.

ENVIRONMENTAL EXPOSURE CONTROLS

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

1,3 DIOXALANE

REMOVER

Hand protection: protective gloves
 Suitable material: butyl rubber
 Type: Butoject (KCL Company) or comparable article; or refer to the glove manufacturer's recommendations.
 Assessment: according to EN 374: level 3
 Material thickness: ca. 0.7 mm
 Breakthrough time: ca. 60 min

PROPAN-2-OL

Respiratory protection: personal respiratory protection devices are normally not required. In inadequately ventilated areas, where workplace limits are exceeded, where there are unpleasant odors or where aerosols are present or smoke and fog occur, use a self-contained breathing apparatus or self-contained breathing apparatus with a type A filter or an appropriate combined filter, in compliance with EN 141.

Hand protection: the choice of an appropriate glove depends not only on its material but also on other quality characteristics and is different from one manufacturer to another. Observe the permeability and breakthrough time instructions provided by the glove supplier. Also take into consideration the specific local conditions in which the product is used, such as the danger of cuts, abrasions and contact times., Keep in mind that in daily use the durability of a chemical resistant protective glove can be considerably less than breakthrough time measured according to EN 374.

ETHANOLAMINE

Chemical resistant protective gloves (EN 374)

Suitable materials also with prolonged direct contact (Recommended: protection index 6, corresponding to > 480 minutes of permeation time according to EN 374):

for example: nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinyl chloride (0.7 mm) and others

The manufacturer's instructions for use must be observed due to the wide variety of types.

Additional note: specifications are based on tests, literature data and information from glove manufacturers or derive from similar substances by analogy. Due to many conditions (eg temperature), it should be considered that the practical use of a chemical protective glove in practice can be much shorter than the breakthrough time determined through testing.

SECTION 9. Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Appearance	aerosol
Colour	amber
Odour	alcohol
Odour threshold	Not available
pH	11
Melting point / freezing point	Not available
Initial boiling point	-44,5 °C
Boiling range	Not available
Flash point	-97 °C
Evaporation rate	Not available
Flammability (solid, gas)	Not available
Lower inflammability limit	Not available
Upper inflammability limit	Not available
Lower explosive limit	0,7 % (V/V)
Upper explosive limit	19,9 % (V/V)
Vapour pressure	Not available
Vapour density	Not available
Relative density	0,79

REMOVER

Solubility	insoluble in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	235 °C
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidising properties	Not available

9.2. Other information

Information not available

SECTION 10. Stability and reactivity**10.1. Reactivity**

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

ETHANOLAMINE

Corrosion to metals:

Corrosive effect on: copper copper alloys

Formation of flammable gases: Remarks: Does not form flammable gases in the presence of water.

METHYL ETHYL KETONE

Reacts with: light metals, strong oxidants. Attacks various types of plastic materials. Decomposes under the effect of heat.

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.

1,3 DIOXALANE

May form explosive vapor / air mixtures. Polymerization may occur. Polymerization is a highly exothermic reaction and can generate sufficient heat to cause thermal decomposition and / or rupture containers.

ETHANOL

Risk of explosion on contact with: alkaline metals, alkaline oxides, calcium hypochlorite, sulphur monofluoride, acetic anhydride, acids, concentrated hydrogen peroxide, perchlorates, perchloric acid, perchloronitrile, mercury nitrate, nitric acid, silver, silver nitrate, ammonia, silver oxide, ammonia, strong oxidising agents, nitrogen dioxide. May react dangerously with: bromoacetylene, chlorine acetylene, bromine trifluoride, chromium trioxide, chromyl chloride, fluorine, potassium tert-butoxide, lithium hydride, phosphorus trioxide, black platinum, zirconium (IV) chloride, zirconium (IV) iodide. Forms explosive mixtures with: air.

PROPAN-2-OL

REMOVER

Vapors can form an explosive mixture with air.

ETHANOLAMINE

May react dangerously with: acrylonitrile, chloroepoxypropane, chlorosulphuric acid, hydrogen chloride, iron-sulphur compounds, acetic acid, acetic anhydride, mesityl oxide, nitric acid, sulphuric acid, strong acids, vinyl acetate, cellulose nitrate.

Reacts with oxidizing agents. The progress of the reaction is exothermic. Reacts with acids. Reacts with halogenated compounds. Reacts with acid chlorides. Incompatible with acid chlorides and acid anhydrides.

BUTANE

Vapors can form an explosive mixture with air.

METHYL ETHYL KETONE

May form peroxides with: air, light, strong oxidising agents. Risk of explosion on contact with: hydrogen peroxide, nitric acid, sulphuric acid. May react dangerously with: oxidising agents, trichloromethane, alkalis. Forms explosive mixtures with: air.

10.4. Conditions to avoid

Avoid overheating.

1,3 DIOXALANE

Avoid any source of ignition. Avoid contact with heat, sparks, open flames and static discharge.

ETHANOL

Avoid exposure to: sources of heat, naked flames.

High temperature. Proximity to sources of ignition

ETHANOLAMINE

Avoid exposure to: air, sources of heat.

Avoid extreme temperatures. See section MSDS 7 - Handling and storage.

BUTANE

Avoid heat and sources of ignition.

METHYL ETHYL KETONE

Avoid exposure to: sources of heat.

REMOVER**10.5. Incompatible materials**

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

1,3 DIOXALANE

Oxidizing agents, acids, bases, amines, oxygen, reducing agents.

ETHANOL

strong mineral acids, oxidizing agents. Aluminum at higher temperatures.

ETHANOLAMINE

Incompatible with: iron, strong acids, strong oxidants.

Substances to avoid:

oxidizing agents, isocyanates, acid anhydrides, acid chlorides, acids, acid substances, copper alloys, mild steel

BUTANE

Strong oxidizing agents, chlorine, oxygen.

METHYL ETHYL KETONE

Incompatible with: strong oxidants, inorganic acids, ammonia, copper, chloroform.

10.6. Hazardous decomposition products**1,3 DIOXALANE**

Thermal decomposition can take place above 300 ° C. Decomposition products: hydrogen, carbon monoxide.

ETHANOL

Combustion will generate carbon oxides.

ETHANOLAMINE

May develop: nitric oxide, carbon oxides.

Carbon oxides, nitrogen oxides, nitrous gases

BUTANE

In case of fire or production of thermal decomposition, for example, carbon monoxide, carbon dioxide (CO₂).

SECTION 11. Toxicological information

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

LC50 (Inhalation) of the mixture:

> 20 mg/l

LD50 (Oral) of the mixture:

>2000 mg/kg

LD50 (Dermal) of the mixture:

>2000 mg/kg

METHYL ETHYL KETONE

LD50 (Oral) 2737 mg/kg Rat

LD50 (Dermal) 6480 mg/kg Rabbit

LC50 (Inhalation) 23,5 mg/l/8h Rat

PROPAN-2-OL

LD50 (Oral) 4710 mg/kg Rat

LD50 (Dermal) 12800 mg/kg Rat

LC50 (Inhalation) 72,6 mg/l/4h Rat

REMOVER**METHYLAL**

LD50 (Oral) 6453 mg/kg Rat - Wistar

LD50 (Dermal) > 5000 mg/kg Rabbit - New Zeland white

LC50 (Inhalation) 57 mg/l Mouse - Swiss

ETHANOL

LD50 (Oral) > 5000 mg/kg Rat

LC50 (Inhalation) 120 mg/l/4h Pimephales promelas

1,3 DIOXALANE

LD50 (Oral) > 2000 mg/kg Rat

LC50 (Inhalation) 68,4 mg/l Rat - Sprague-Dawley

PROPANE

Method: To study the concentrations at which the effects of the CNS occur following exposure by inhalation to propane by measuring LC50 (15 min) and EC50 (CNS) (10 min) in rats.

Reliability: 2

Species: Rat (Alderley Park (SPF); male / female)

Route of exposure: Inhalation

Results: LC50> 800 000 ppm

PROPAN-2-OL

Method: Equivalent or similar to OECD 401

Reliability: 2

Species: Rat (Sherman)

Route of exposure: Oral

Results: LD50: 5.84 other: g / kg body weight

Bibliographic reference: Smyth HF & Carpenter CP, FURTHER EXPERIENCE WITH THE RANGE FINDING TEST IN THE INDUSTRIAL TOXICOLOGY LABORATORY (1948)

Method: Equivalent or similar to OECD 403

Reliability: 1

Species: Rat (Fischer 344; male / female)

Route of exposure: Inhalation (vapor)

Results: LC50: ca. 5,000 ppm

Method: Equivalent or similar to OECD 402

Reliability: 2

Species: Rabbit

Route of exposure: Dermal

Results: LD50: 16.4 mL / kg bw

Bibliographic reference: Smyth HF & Carpenter CP, FURTHER EXPERIENCE WITH THE RANGE FINDING TEST IN THE INDUSTRIAL TOXICOLOGY LABORATORY (1948)

ETHANOLAMINE

Method: Equivalent or similar to OECD 401

Reliability: 2

REMOVER

Species: Rat (Sprague-Dawley; male / female)

Route of exposure: Oral

Results: LD50 1 089 mg / kg bw

Method: Not indicated

Reliability: 2

Species: Rat (Sprague-Dawley; male / female)

Route of exposure: Inhalation (vapors)

Results: LC50> 1.3 mg / L air

Method: Equivalent or similar to OECD 402

Reliability: 2

Species: Rabbit (New Zealand White; male / female)

Route of exposure: Dermal

Results: LD50 2 504 mg / kg bw

BUTANE

Method: Not indicated

Reliability: 2

Species: Rat (Alderley Park (SPF); male / female)

Route of exposure: Inhalation

Results: LC50: 1 443 mg / L air

SKIN CORROSION / IRRITATION

Causes skin irritation

METHYLAL

Method: OECD Guideline 404

Reliability: 1

Species: Rabbit (New Zealand White)

Route of exposure: Dermal

Results: Not irritating

ETHANOL

Method: OECD 404

Reliability: 1

Species: Rabbit (New Zealand White)

Route of exposure: Dermal

Results: Not irritating

PROPAN-2-OL

Method: Not indicated

Reliability: 2

Species: Rabbit

Route of exposure: Dermal

Results: Not classified

Bibliographic reference: Nixon G, Tyson C & Wertz W, Interspecies Comparisons of Skin Irritancy (1975)

METHYL ETHYL KETONE

Method: OECD 404

Reliability: 2

Species: Rabbit (New Zealand White)

Route of exposure: Dermal

Results: Not irritating

SERIOUS EYE DAMAGE / IRRITATION

REMOVER

Causes serious eye irritation

1,3 DIOXALANE

Method: 16 CFR 1500.42

Reliability: 2

Species: Rabbit (New Zealand White)

Route of exposure: Ocular

Results: Irritating

PROPAN-2-OL

Method: Equivalent or similar to OECD 405

Reliability: 1

Species: Rabbit (New Zealand White)

Route of exposure: Ocular

Results: Category 2

ETHANOLAMINE

Method: Equivalent or similar to OECD 405

Reliability: 2

Species: Rabbit (Vienna White)

Route of exposure: Ocular

Results: Positive, category 1

METHYL ETHYL KETONE

Method: Equivalent or similar to OECD 405

Reliability: 2

Species: Rabbit (Albino)

Route of exposure: Ocular

Results: Category 2, irritant

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

PROPAN-2-OL

Method: OECD 406

Reliability: 1

Species: guinea pig (Hartley; male / female)

Route of exposure: Dermal

Results: Not sensitizing

Respiratory sensitization

ETHANOLAMINE

Method: Not indicated

Reliability: 2

Species: guinea pig (Dunkin-Hartley; male)

Route of exposure: Inhalation

Results: Negative

Bibliographic reference: Kamijo Y., Hayashi I., Ide A., Yoshimura K., Soma K., Majima M.,
Effects of inhaled monoethanolamine on bronchoconstriction (2009)

Skin sensitization

REMOVER**METHYLAL**

Method: OECD Guideline 406

Reliability: 1

Species: guinea pig (Dunkin-Hartley; male / female)

Route of exposure: Dermal

Results: Not sensitizing

1,3 DIOXALANE

Method: OECD Guideline 429

Reliability: 1

Species: Mouse (CBA; female)

Route of exposure: Dermal

Results: Not sensitizing

ETHANOLAMINE

Method: Not indicated

Reliability: 2

Species: guinea pig (Dunkin-Hartley)

Route of exposure: Dermal

Results: Negative

Bibliographic reference: Wahlberg JE and Boman A, Alkanolamines - sensitizing capacity, cross reactivity and review of patch test reactivity. (1996)

METHYL ETHYL KETONE

Method: OECD 406

Reliability: 1

Species: guinea pig (Dunkin-Hartley; female)

Route of exposure: Dermal

Results: Not sensitizing

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

METHYLAL

Method: OECD Guideline 473-in vitro test

Reliability: 1

Species: Chinese hamster

Results: Negative

Method: OECD Guideline 474-test in vivo

Reliability: 1

Species: Mouse (ICR; male / female)

Route of exposure: Intraperitoneal

Results: Negative

1,3 DIOXALANE

Method: OECD Guideline 471-in vitro test

Reliability: 1

Species: *S. typhimurium*

Results: Negative

Method: Equivalent or similar to OECD Guideline 474-test in vivo

Reliability: 1

Species: Mouse (ICR; male / female)

Route of exposure: Intraperitoneal

Results: Negative

REMOVER**PROPANE**

Method: OECD 471 in vitro test

Reliability: 1

Species: Histidine Salmonella

Results: Negative with or without metabolic activation

Method: OECD 474-test in vivo

Reliability: 1

Species: Rat (Sprague-Dawley CD; male / female)

Route of exposure: Inhalation (gas)

Results: Negative

ETHANOL

Method: Equivalent or similar to OECD 478 in vivo test

Reliability: 2

Species: Mouse (CFLP and Alderley Park; male)

Route of exposure: Oral

Results: Negative

PROPAN-2-OL

Method: Equivalent or similar to OECD 476 in vitro test

Reliability: 1

Species: Chinese hamster

Results: Negative with or without metabolic activation

Bibliographic reference:

Method: Equivalent or similar to OECD 474 in vivo test

Reliability: 2

Species: Mouse (ICR; male / female)

Route of exposure: Oral

Results: Negative

ETHANOLAMINE

Method: Not indicated - in vitro test

Reliability: 2

Species: Chinese hamster lung fibroblasts (V79)

Results: Negative

Bibliographic reference: Chen TH, et al., Inhibition of Metabolic Cooperation in Chinese Hamster V79 Cells by Various Organic Solvents and Simple Compounds (1984)

Method: OECD 474-test in vivo

Reliability: 1

Species: Mouse (NMRI; male / female)

Route of exposure: Oral

Results: Negative

BUTANE

Method: OECD 471 in vitro test

Reliability: 1

Species: Salmonella strains, *S. typhimurium*

Results: Negative without metabolic activation

Method: OECD 474-test in vivo

Reliability: 1

Species: Rat (Sprague-Dawley CD; male / female)

Route of exposure: Inhalation (gas)

Results: Negative

METHYL ETHYL KETONE

REMOVER

Method: Equivalent or similar to OECD 471 in vitro test

Reliability: 2

Species: *S. typhimurium*

Results: Negative

Method: Equivalent or similar to OECD 474 in vivo test

Reliability: 2

Species: Mouse (CD-1; male / female)

Route of exposure: Intraperitoneal

Results: Negative

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

PROPAN-2-OL

Method: Equivalent or similar to OECD 416

Reliability: 1

Species: Rat (Sprague-Dawley; male / female)

Route of exposure: Oral

Results: NOAEL 500

BUTANE

Method: OECD 413

Reliability: 1

Species: Rat (Sprague-Dawley CD; male / female)

Route of exposure: Inhalation

Results: NOAEC 10000 ppm

Adverse effects on sexual function and fertility

1,3 DIOXALANE

Method: equivalent or similar to the OECD 415 guideline

Reliability: 2

Species: Rat (Charles River COBS albino rats; male / female)

Route of exposure: inhalation (vapor)

Results: NOAEL 125 ppm

PROPANE

Method: OECD 413

Reliability: 1

Species: Rat (Sprague-Dawley CD; male / female)

Route of exposure: Inhalation

Results: NOAEC (fertility) 10 000 ppm

ETHANOLAMINE

Method: OECD Guideline 416

Reliability: 1

Species: Rat (Wistar; male / female)

Route of exposure: Oral

Results: NOAEL 300 mg / kg bw / day (nominal)

REMOVER**METHYL ETHYL KETONE**

Method: Equivalent or similar to OECD 416

Reliability: 2

Species: Rat (Wistar; male / female)

Route of exposure: Oral

Results: NOAEL (fertility) 10 000 mg / L

Adverse effects on development of the offspring

METHYLAL

Method: OECD Guideline 414

Reliability: 1

Species: Rat (CrI: CDRBRVAF / plus)

Route of exposure: Inhalation (vapors)

Results: NOEL 10 068 ppm

1,3 DIOXALANE

Method: Equivalent or similar to OECD Guideline 414

Reliability: 2

Species: Rat (CrI: CD®BR VAF / Plus®)

Route of exposure: Oral

Results: NOAEL 250 mg / kg

PROPANE

Method: EPA OPPTS 870.3700

Reliability: 1

Species: Rat (VAF / Plus®, Sprague-Dawley Derived (CD®) CrI: CD® IGS BR)

Route of exposure: Inhalation (gas)

Results: NOAEC (development) 10 426 ppm

ETHANOL

Method: Not indicated

Reliability: 2

Species: Rat (Sprague-Dawley)

Route of exposure: Oral

Results: NOAEL (development) 5.2 g ethanol / kg bw / day

Bibliographic reference: Prenatal ethanol exposure has differential effects on fetal growth and skeletal ossification, Simpson ME, Duggal S, & Keiver K (2005)

ETHANOLAMINE

Method: OECD Guideline 414

Reliability: 1

Species: Rat (Wistar)

Route of exposure: Oral

Results: NOAEL > = 450 mg / kg bw / day

METHYL ETHYL KETONE

Method: Equivalent or similar to OECD 414

Reliability: 1

Species: Rat (Sprague-Dawley)

Route of exposure: Inhalation

Results: NOAEC (development) ca. 1 002 ppm

REMOVERSTOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

METHYLAL

Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

PROPANE

Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

ETHANOL

Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

PROPAN-2-OL

Based on the available data, the substance may cause damage to organs through single exposure and is therefore classified in this hazard class.

ETHANOLAMINE

Based on available data and through expert judgment, the substance is classified in the target organ toxicity class for single exposure.

BUTANE

Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

METHYL ETHYL KETONE

Based on available data and through expert judgment, the substance is classified in the target organ toxicity class for single exposure.

Target organ
ETHANOLAMINE

Respiratory tract

METHYL ETHYL KETONE

Central nervous system.

Route of exposure
PROPAN-2-OL

inhalation

ETHANOLAMINE

inhalation

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

REMOVER**METHYLAL**

Method: OECD Guideline 413

Reliability: 1

Species: Rat (Wistar Hoe: WISKf (SPF71); male / female)

Route of exposure: Inhalation (vapors)

Results: NOEL ca. 2,000 ppm

1,3 DIOXALANE

Method: Equivalent or similar to OECD Guideline 407

Reliability: 2

Species: Rat (Sprague Dawley CrI: CD® (SD) BR; male / female)

Route of exposure: Oral

Results: NOAEL 75 mg / kg bw / day

Method: Equivalent or similar to OECD Guideline 413

Reliability: 2

Species: Rat (Fischer 344; male / female)

Route of exposure: Inhalation (vapors)

Results: NOAEC 298 ppm

PROPANE

Method: OECD 422

Reliability: 1

Species: Rat (Sprague-Dawley; male / female)

Route of exposure: Inhalation (gas)

Results: NOAEC 16 000 ppm

ETHANOL

Method: Equivalent or similar to OECD 408

Reliability: 2

Species: Rat (Sprague-Dawley; male / female)

Route of exposure: Oral

Results: NOAEL 1 730 mg / kg bw / day

PROPAN-2-OL

Method: OECD 451

Reliability: 1

Species: Rat (Fischer 344; male / female)

Route of exposure: Inhalation (vapors)

Results: NOAEC = 5000 ppm

ETHANOLAMINE

Method: OECD Guideline 416

Reliability: 1

Species: Rat (Wistar; male / female)

Route of exposure: Oral

Results: Negative

Method: OECD Guideline 412

Reliability: 1

Species: Rat (Wistar; male / female)

Route of exposure: Inhalation (aerosol)

Results: NOAEC 10 mg / m³ air

BUTANE

Method: OECD 413

REMOVER

Reliability: 1
 Species: Rat (Sprague-Dawley; male / female)
 Route of exposure: Inhalation (gas)
 Results: NOAEC = 10000 ppm

METHYL ETHYL KETONE

Method: Equivalent or similar to OECD 413
 Reliability: 1
 Species: Rat (Fischer 344; male / female)
 Route of exposure: Inhalation (vapors)
 Results: NOAEC 5 041 ppm

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

SECTION 12. Ecological information**12.1. Toxicity****METHYLAL**

LC50 - for Fish > 1000 mg/l/96h Danio rerio
 EC50 - for Crustacea > 1000 mg/l/48h Daphnia magna

1,3 DIOXALANE

LC50 - for Fish > 95,4 mg/l/96h Lepomis macrochirus
 EC50 - for Crustacea > 772 mg/l/48h Daphnia magna
 EC50 - for Algae / Aquatic Plants > 877 mg/l/72h Pseudokirchnerella subcapitata

12.2. Persistence and degradability**ETHANOL**

Quickly biodegradable, 60% in 5 days.

PROPAN-2-OL

Quickly degradable in water.

BUTANE

Quickly degradable in water.

METHYL ETHYL KETONE

Rapidly degradable in water, 60% in 14 days.

METHYL ETHYL KETONE

Solubility in water > 10000 mg/l
 Rapidly degradable

BUTANE

Solubility in water 0,1 - 100 mg/l
 Rapidly degradable

PROPAN-2-OL

Rapidly degradable

REMOVER

METHYLAL

Solubility in water > 10000 mg/l

NOT rapidly degradable

PROPANE

Solubility in water 0,1 - 100 mg/l

Rapidly degradable

ETHANOL

Solubility in water 1000 - 10000 mg/l

Rapidly degradable

ETHANOLAMINE

Solubility in water 1000 - 10000 mg/l

Rapidly degradable

1,3 DIOXALANE

NOT rapidly degradable

12.3. Bioaccumulative potential

METHYL ETHYL KETONE

Partition coefficient: n-octanol/water 0,3

BUTANE

Partition coefficient: n-octanol/water 1,09

PROPAN-2-OL

Partition coefficient: n-octanol/water 0,05

METHYLAL

Partition coefficient: n-octanol/water 0,18

BCF 0,6

PROPANE

Partition coefficient: n-octanol/water 1,09

ETHANOL

Partition coefficient: n-octanol/water -0,35

ETHANOLAMINE

Partition coefficient: n-octanol/water -2,3

1,3 DIOXALANE

REMOVER

Partition coefficient: n-octanol/water

-0,31

12.4. Mobility in soil

ETHANOLAMINE

Partition coefficient: soil/water

-0,5646

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

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.

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.

PROPAN-2-OL

After pre-treatment and compliance with the regulations for hazardous waste, they must be taken to a permitted hazardous waste landfill or a hazardous waste incinerator.

ETHANOLAMINE**Waste treatment methods**

Incinerate in an appropriate incineration plant, observing the regulations of the local authorities.

It is not possible to specify a waste code compliant with the European waste catalog (EWC), due to dependence on use.

The waste code in accordance with the European waste catalog (EWC) must be specified in collaboration with the agency / producer / disposal authorities.

Contaminated packaging:

Contaminated packaging should be emptied as much as possible; therefore it can be switched to recycling after being thoroughly cleaned.

BUTANE

No waste key number according to the European list of waste types can be assigned to this product, since this classification is based on the use (not yet determined) for which the product is intended for the consumer.

The key number for the waste must be determined according to the European waste type list (decision on the EU waste type list 2000/532 / EC) in collaboration with the disposal company / producer / authority Official.

SECTION 14. Transport information**14.1. UN number**

ADR / RID, IMDG, 1950
IATA:

14.2. UN proper shipping name

REMOVER

ADR / RID: AEROSOLS
 IMDG: AEROSOLS
 IATA: AEROSOLS, FLAMMABLE

14.3. Transport hazard class(es)

ADR / RID: Class: 2 Label: 2.1



IMDG: Class: 2 Label: 2.1



IATA: Class: 2 Label: 2.1

**14.4. Packing group**

ADR / RID, IMDG, IATA: -

14.5. Environmental hazards

ADR / RID: NO
 IMDG: NO
 IATA: NO

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: --	Limited Quantities: 1 L	Tunnel restriction code: (D)
	Special Provision: -		
IMDG:	EMS: F-D, S-U	Limited Quantities: 1 L	
IATA:	Cargo:	Maximum quantity: 150 Kg	Packaging instructions: 203
	Pass.:	Maximum quantity: 75 Kg	Packaging instructions: 203
	Special Instructions:	A145, A167, A802	

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

Information not relevant

SECTION 15. Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

REMOVER

Seveso Category - Directive 2012/18/EC: P3a

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

Product

Point 40

Substances in Candidate List (Art. 59 REACH)

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

Substances subject to authorisation (Annex XIV REACH)

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

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:

Flam. Gas 1A	Flammable gas, category 1A
Aerosol 1	Aerosol, category 1
Aerosol 3	Aerosol, category 3
Flam. Liq. 2	Flammable liquid, category 2
Press. Gas (Liq.)	Liquefied gas
Repr. 1A	Reproductive toxicity, category 1A
Acute Tox. 4	Acute toxicity, category 4
Skin Corr. 1B	Skin corrosion, category 1B
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2

REMOVER

STOT SE 3	Specific target organ toxicity - single exposure, category 3
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H229	Pressurised container: may burst if heated.
H225	Highly flammable liquid and vapour.
H280	Contains gas under pressure; may burst if heated.
H360	May damage fertility or the unborn child.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

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
- 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) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament

REMOVER

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) 2018/1480 (XIII Atp. CLP)
16. Regulation (EU) 2019/521 (XII 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.

Product's classification is based on the calculation methods set out in Annex I of the CLP Regulation, unless otherwise indicated in sections 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 / 08 / 09 / 10 / 11 / 12 / 13 / 15 / 16.