



STEELCO S.P.A.

Revision nr. 5

Dated 03/01/2023

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Replaced revision: 4

SteelcoXide A

Safety Data Sheet

According to Annex II to REACH - Regulation 2020/878

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

1.1. Product identifier

Product name **SteelcoXide A**
Code: **STXA\BSXA**

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

Intended Use: **"Solution A" of the tricomponent system "SteelcoXide". Acetate-ion based activator of the concentrated sterilizing solution "Solution B". PROFESSIONAL USE ONLY.**

Uses advised against: **Uses other than those indicated.**

1.3 Details of the supplier of the safety data sheet

Name **STEELCO S.p.A.**
Full address **Via Balegante, 27**
District and Country **31039 Riese Pio X (TV)**
ITALY
tel. +39 0423 7561
fax +39 0423 755528

e-mail address of the competent person
responsible for the Safety Data Sheet **info@steelcogroup.com**

1.4. Emergency telephone number

For urgent inquiries refer to

Centros de Orientação de Doentes Urgentes (CODU): 800250250



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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 2020/878. 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:

Flammable liquid, category 2	H225	Highly flammable liquid and vapour.
Severe eye corrosion, category 1	H318	Causes serious eye damage
Specific target organ toxicity - single exposure, category 3	H336	May cause drowsiness or dizziness.

2.2. Label elements

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

Hazard pictograms:



Signal words: Danger

Hazard statements:

H225	Highly flammable liquid and vapour.
H318	Causes serious eye damage
H336	May cause drowsiness or dizziness.

Precautionary statements:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P312	Call a POISON CENTRE if you feel unwell.
P261	Avoid breathing vapours / spray.
P280	Wear 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.

Contains: PROPAN-2-OL

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage \geq than 0,1%.
The product does not contain substances having endocrine-disrupting properties in a concentration \geq 0.1%.



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SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
PROPAN-2-OL		
CAS 67-63-0	$15 \leq x < 35$	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		
ACETIC ACID		
CAS 64-19-7	$3 \leq x < 10$	Flam. Liq. 3 H226, Skin Corr. 1A H314, Eye Dam. 1 H318, Classification note/notes according to Annex VI to the CLP Regulation: B
		Specific concentration limits (Annex VI of Reg. 1272/2008) <i>Skin Corr. 1A H314: $\geq 90\%$, Skin Corr. 1B H314: $\geq 25\%$, Skin Irrit. 2 H315: $\geq 10\%$, Eye Dam. 1 H318: $\geq 25\%$, Eye Irrit. 2 H319: $\geq 10\%$</i>
EC 200-580-7		
INDEX 607-002-00-6		
Reg. no. 01-2119475328-30-xxxx		
ETHANOL		
CAS 64-17-5	$3 \leq x < 8$	Flam. Liq. 2 H225, Eye Irrit. 2 H319
		Specific concentration limits (Annex VI of Reg. 1272/2008) <i>Eye Irrit. 2 H319: $\geq 50\%$</i>
EC 200-578-6		
INDEX 603-002-00-5		
Reg. no. 01-2119457610-43-XXXX		

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

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.

PROTECTION MEASURES FOR FIRST AID: for the PPE necessary for first aid interventions refer to section 8.2 of this safety data sheet.

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

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



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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

Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

UNSUITABLE EXTINGUISHING EQUIPMENT

Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

PROPAN-2-OL

Carbon oxides.

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).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1 For those who do not intervene directly

Do not take any action involving any personal risk or without proper training. Evacuate the surrounding areas. Do not touch or walk on the spilled material.

Wear suitable protective equipment (including personal protective equipment referred to in section 8 of this Safety Data Sheet) to prevent contamination of skin, eyes and personal clothing. Wear appropriate respirator when ventilation is inadequate.

Do not inhale the mists / vapors / fumes. Avoid the dispersion of the product into the environment. Follow the appropriate internal procedures for personnel not authorized to intervene directly in the event of accidental release.

6.1.2 For those who intervene directly

Stop the leak if there is no danger.

Evacuate unauthorized personnel. Wear suitable protective equipment. (see section 8 of this Safety Data Sheet). Follow the appropriate internal procedures for authorized personnel. Isolate the danger area and deny entry. Ventilate enclosed spaces before entering.

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



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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

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

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

DEU	Deutschland	Technischen Regeln für Gefahrstoffe (TRGS 900) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte. MAK- und BAT-Werte-Liste 2020, Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Mitteilung 56
ESP	España	Límites de exposición profesional para agentes químicos en España 2019
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)
EU	OEL EU	Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; 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 98/24/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2020

PROPAN-2-OL
Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	500	200	1000	400	
MAK	DEU	500	200	1000	400	
VLA	ESP	500	200	1000	400	
VLEP	FRA			980	400	



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WEL	GBR	999	400	1250	500
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TLV-ACGIH		492	200	983	400
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Predicted no-effect concentration - PNEC					
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Normal value in fresh water				140,9	mg/l
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Normal value in marine water				140,9	mg/l
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Normal value for fresh water sediment				552	mg/kg
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Normal value for marine water sediment				552	mg/kg
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Normal value for water, intermittent release				140,9	mg/l
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Normal value of STP microorganisms				2,251	g/l
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Normal value for the food chain (secondary poisoning)				160	mg/kg
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Normal value for the terrestrial compartment				28	mg/kg
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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					VND	VND	VND	26 mg/kg bw/d
Inhalation	VND	VND	VND	89 mg/m3	VND	VND	VND	500 mg/m3
Skin	VND	VND	VND	319 mg/kg bw/d	VND	VND	VND	888 mg/kg bw/d

ACETIC ACID

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	25	10	50 (C)	20 (C)	
MAK	DEU	25	10	50	20	
VLA	ESP	25	10	50	20	
VLEP	FRA	25	10	50	20	
WEL	GBR	25	10	50	20	
OEL	EU	25	10	50	20	
TLV-ACGIH		25	10	37	15	

Predicted no-effect concentration - PNEC					
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Normal value in fresh water				3,058	mg/l
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Normal value in marine water				305,8	µg/L
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Normal value for fresh water sediment				11,36	mg/kg
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Normal value for marine water sediment				1,136	mg/kg
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Normal value for water, intermittent release				30,58	mg/l
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Normal value of STP microorganisms				85	mg/l
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Normal value for the terrestrial compartment				470	µg/kg soil dw
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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	NPI		NPI					
Inhalation	25 mg/m3	NPI	25 mg/m3	NPI	25 mg/m3	NPI	25 mg/m3	NPI
Skin	VND	NPI	VND	NPI	VND	NPI	VND	NPI



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ETHANOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	380	200	1520	800	
MAK	DEU	380	200	1520	800	
VLA	ESP			1910	1000	
VLEP	FRA	1900	1000	9500	5000	
WEL	GBR	1920	1000			
TLV-ACGIH				1884	1000	
Predicted no-effect concentration - PNEC						
Normal value in fresh water				960	µg/L	
Normal value in marine water				790	mg/l	
Normal value for fresh water sediment				3,6	mg/kg	
Normal value for marine water sediment				2,9	mg/kg	
Normal value for water, intermittent release				2,75	mg/l	
Normal value of STP microorganisms				580	mg/l	
Normal value for the food chain (secondary poisoning)				380	mg/kg food	
Normal value for the terrestrial compartment				630	µg/kg soil dw	

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						NPI		87 mg/kg bw/d
Inhalation	950 mg/m3	NPI	NPI	114 mg/m3	1900 mg/m3	NPI	NPI	950 mg/m3
Skin	NPI	NPI	NPI	206 mg/kg bw/d	NPI	NPI	NPI	343 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

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



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and type of use.

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.

Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.

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, wear a mask with a type AX filter, whose limit of use will be defined by the manufacturer (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.

PROPAN-2-OL

IBE (Biological Indicators of Exposure - ACGIH 2020): acetone in urine = 40 mg / L (end of shift)

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	liquid
Colour	colourless
Odour	pungent
Odour threshold	Not determined
pH	< 2,5
Melting point / freezing point	Not available
Initial boiling point	105 °C
Boiling range	Not available
Flash point	15 °C
Evaporation rate	Not determined
Vapour pressure	Not available
Vapour density	Not determined
Relative density	0,975 g/mL
Solubility	soluble in water
Partition coefficient: n-octanol/water	0,05 (Propan-2-olo)
Auto-ignition temperature	Not available
Decomposition temperature	Not determined
Viscosity	Not determined
Explosive properties	Not Explosive



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Oxidising properties

Non-oxidant

9.2. Other information

VOC (Directive 2010/75/EC) : 25,21 % - 240,23 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.

ACETIC ACID

It is highly corrosive: it attacks the most common metals with the development of hydrogen.

10.2. Chemical stability

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

ACETIC ACID

Hygroscopic. Polymerises in contact with acetic aldehyde.

10.3. Possibility of hazardous reactions

The vapours may also form explosive mixtures with the air.

ACETIC ACID

Risk of explosion on contact with: chromium (VI) oxide, potassium permanganate, sodium peroxide, perchloric acid, phosphorus chloride, hydrogen peroxide. May react dangerously with: alcohols, bromine pentafluoride, chlorosulphuric acid, dichromate-sulphuric acid, ethane diamine, ethylene glycol, potassium hydroxide, strong bases, sodium hydroxide, strong oxidising agents, nitric acid, ammonium nitrate, potassium tert-butoxide, oleum. Forms explosive mixtures with: air.

Violent reactions in case of contact with strong bases, oxidants and other reactive compounds.

Formation of hydrogen in case of contact with carbon steel and non-noble metals.

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.

10.4. Conditions to avoid

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

PROPAN-2-OL

Heat, flames and sparks. Extreme temperatures and direct sunlight.

ACETIC ACID

Avoid exposure to: sources of heat, naked flames.

No ventilation. Open flames, heating and sparks. Humidity.



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ETHANOL

Avoid exposure to: sources of heat, naked flames.
Avoid high temperatures and proximity to ignition sources

10.5. Incompatible materials

PROPAN-2-OL

Oxidizing agents, acid anhydrides, aluminum, halogenated compounds, acids.

ACETIC ACID

Incompatible with: carbonates, hydroxides, phosphates, oxidising substances, bases.
Bases, acetic anhydride, nitric acid, alcohol, halogens, halogen compounds and oxidizing materials.

ETHANOL

Strong mineral acids, oxidizing agents. High temperature aluminum.

10.6. Hazardous decomposition products

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

ACETIC ACID

When heated to decomposition, it develops irritating fumes. Carbon monoxide, carbon dioxide (CO₂)

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 toxicological effects

Metabolism, toxicokinetics, mechanism of action and other information

PROPAN-2-OL

It is readily absorbed following inhalation exposure and rapidly spreads to tissues. However, it is also readily excreted in the urine, essentially in the form of the 2-methoxyacetic acid metabolite. (Arch Toxicol, 68, -588-94 - Johanson G, 1994)

ACETIC ACID

The substance is absorbed from the gastrointestinal tract and the lungs. It is rapidly distributed throughout the body. It is almost completely metabolized at the cellular level. After reaction with acetyl coenzyme A, the acetic acid is transformed by the Krebs cycle and is incorporated into the lipids and proteins, part of it is transformed into formic acid. Only a small part is found in the urine in unchanged form

Information on likely routes of exposure

ACETIC ACID

The main routes of potential exposure are expected to be inhalation and skin contact in workers exposed to the manufacture and use of the substance.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects



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Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture: Not classified (no significant component)

ATE (Oral) of the mixture: Not classified (no significant component)

ATE (Dermal) of the mixture: Not classified (no significant component)

ETHANOL

LD50 (Oral) 1187 mg/kg Ratto

LC50 (Inhalation) 115,9 mg/l/4h

ACETIC ACID

LD50 (Oral) 3310 mg/kg Ratto

LD50 (Dermal) 1060 mg/kg Coniglio

LC50 (Inhalation) 11,4 mg/l/4h Ratto

PROPAN-2-OL

LD50 (Oral) 4710 mg/kg Rat

LD50 (Dermal) 12800 mg/kg Rat

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

PROPAN-2-OL

Method: equivalent or similar to OECD 401

Reliability (Klimisch score): 2

Species: Rat (Sherman)

Routes of exposure: oral

Results: LD50 = 5840 mg / kg

Method: equivalent or similar to OECD 402

Reliability (Klimisch score): 2

Species: Rabbit

Routes of exposure: cutaneous

Results: LC50 = 16.4 ml / kg

Method: equivalent or similar to OECD 403

Reliability (Klimisch score): 1

Species: Rat (Fischer 344; Male / Female)

Routes of exposure: inhalation (vapors)

Results: LD50 > 10000 ppm / 6h

ACETIC ACID

Bibliographic reference: "The acute oral toxicity of acetic, chloroacetic, dichloroacetic and trichloroacetic acids (J Ind Hyg Toxicol, Vol 23, PP 78-82 (1941))"

Reliability (Klimisch score): 2

Species: rat (Male / Female)

Routes of exposure: oral

Results: LD50: 3310 mg / kg

Method: equivalent or similar to OECD 403

Reliability (Klimisch score): 2

Species: rat (Sprague-Dawley Male / Female)

Routes of exposure: inhalation (vapors)

Results: LC50: 11.4 mg / l 4h

Reference: [Lewis, R.J. Sr. (ed) Sax's Dangerous Properties of Industrial Materials. 11th Edition. Wiley-Interscience, Wiley & Sons, Inc. Hoboken, NJ. 2004., p. 16]

Species: Rabbit

Routes of exposure: cutaneous



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Results: LD50: 1060 mg / kg

ETHANOL

Method: OECD 401

Reliability (Klimish score): 1

Species: rat (Cox CD; Male / Female)

Route of exposure: oral

Results: LD50: 10470 mg / kg

Method: OECD 403

Reliability (Klimish score): 2

Species: rat (Sprague-Dawley; Male / Female)

Route of Exposure: inhalation (vapors)

LC50 results (male): 116.9 mg / l 4h

Reference: Schechter, M. et al, Pharmacol Biochem Behav 52 (1): 245-248, 1995

Reliability (Klimisch score): 2

Species: Mouse (HS; male / female)

Routes of exposure: intraperitoneal

Results: LD50 = 9450 mg / kg body weight

SKIN CORROSION / IRRITATION

Does not cause skin irritation (based on the results of the in vitro test conducted on the mixture)

STEELCOXIDE – SOLUTION A

Metodo: OECD 435 – test in vitro

Reliability (Klimisch score): 1

Results: the mixture "SXA - Solution A" causes corrosion of the bio-barge in the Corrositex In Vitro Membrane Barrier Test. The average calculated MCT was 71.27±0.65.

According to OECD Guideline No 435 (July 2015), a substance/mixture with an MCT > 60 is classified as non-corrosive and should be classified as UN GHS Category 2. The mixture has therefore been classified as non-corrosive – Category 2. (Study No.: STULV21AA3737-1 GLP)

PROPAN-2-OL

Reliability (Klimisch score): 2

Species: Rabbit

Routes of exposure: cutaneous

Results: Not irritating

Reference: Nixon G et al, Toxicology and Applied Pharmacology 31, 481-490 (1975)

ACETIC ACID

Method: equivalent or similar to OECD 404

Reliability (Klimisch score): 2

Species: rabbit

Routes of exposure: cutaneous

Results: Based on the strength of evidence of the available data as determined by expert judgment, the substance is classified as corrosive to the skin.

ETHANOL

Method: OECD 404

Reliability (Klimisch score): 1

Species: Rabbit (New Zealand White)

Routes of exposure: cutaneous

Results: non-irritating.

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage (based on the results of the in vitro test conducted on the mixture)



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STEELCOXIDE – SOLUTION A

Metodo: OECD 437 – test in vitro

Reliability (Klimisch score): 1

Results: The mixture "BSXA - Solution A" induced serious eye lesions on the cornea of the bovine eye. The calculated average IVS was 125.48. According to OECD Guideline No. 437 (June 2020), a substance/mixture with an IVIS > 55 causes serious eye injuries, and should be classified as UN GHS Category I. The mixture has therefore been classified in category I. (Study No.: 21091701G850)

PROPAN-2-OL

Method: equivalent or similar to OECD 405

Reliability (Klimisch score): 1

Species: Rabbit (New Zealand White)

Routes of exposure: ocular

Results: irritating

ACETIC ACID

Method: equivalent or similar to OECD 405

Reliability (Klimisch score): 2

Species: rabbit (Rsk: NZW)

Routes of exposure: ocular

Results: Based on the strength of evidence of the available data as determined by expert judgment, the substance is classified as corrosive to eyes.

ETHANOL

Method: OECD 405

Reliability (Klimisch score): 2

Species: Rabbit

Routes of exposure: ocular

Results: irritating.

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

PROPAN-2-OL

Method: OECD 406

Reliability (Klimisch score): 1

Species: Guinea pig (Dunkin-Hurtley; Male / Female)

Routes of exposure: cutaneous

Results: not sensitizing

ACETIC ACID

Based on the strength of evidence of the available data as determined by expert judgment, the substance is not classified for the respiratory or skin sensitization hazard class.

ETHANOL

Method: equivalent or similar OECD 406

Reliability (Klimisch score): 2

Species: Guinea pig (Pirbright White; Female)

Routes of exposure: cutaneous

Results: not sensitizing.

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

PROPAN-2-OL

Based on available data, the substance has no mutagenic effects and is not classified under the relevant hazard class CLP.



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ACETIC ACID

Method: equivalent or similar to OECD 471 - In vitro test
Reliability (Klimisch score): 2
Species: Salmonella Typhimurium
Results: negative with and without metabolic activation.

Method: equivalent or similar to EU B.12 - live test
Reliability (Klimisch score): 1
Species: rat (CD (Sprague-Dawley) Male / Female)
Routes of exposure: inhalation (vapors)
Results: negative.

ETHANOL

Method: equivalent or similar to OECD 471 - In vitro test
Reliability (Klimisch score): 1
Species: S. typhimurium
Results: negative with and without metabolic activation
Method: equivalent or similar to OECD 474 - In vivo test
Species: mouse (NMRI; Male / Female)
Routes of exposure: intraperitoneal
Results: negative.

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

PROPAN-2-OL

Based on available data, the substance has no carcinogenic effects and is not classified under the relevant hazard class CLP.

ACETIC ACID

Bibliographic reference: "The stimulating effect of acetic acid, alcohol and thermal burn injury on oesophagus and forestomach carcinogenesis induced by n-nitrososarcosin ethyl ester in rats" (Cancer Letters Vol 47, pp179-185 (1989))
Reliability (Klimisch score): 2
Species: rat (outbred white; male)
Routes of exposure: oral
Results: negative. LOAEL: 64 mg / kg body weight / day

ETHANOL

Method: equivalent or similar to OECD 453
Reliability (Klimisch score): 1
Species: rat (Fischer 344 / DuCrj; Male / Female)
Routes of exposure: inhalation (vapors)
Results: negative.

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

PROPAN-2-OL

Method: equivalent or similar to OECD 416
Reliability (Klimisch score): 1
Species: Rat (Sprague-Dawley; Male / Female)
Routes of exposure: Oral
Results: negative. NOAEL = 1000 mg / kg bw / day.



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Adverse effects on sexual function and fertility

PROPAN-2-OL

Method: equivalent or similar to OECD 416
Reliability (Klimsch score): 1
Species: rat (Sprague-Dawley Male / Female)
Routes of exposure: oral
Results: negative.

ETHANOL

Method: equivalent or similar to OECD 416
Reliability (Klimisch score): 1
Species: mouse (CD-1; Male / Female)
Routes of exposure: oral
Results: No effect on fertility at doses equivalent to 20.7 g / kg / day

Adverse effects on development of the offspring

PROPAN-2-OL

Method: equivalent or similar to OECD 414
Reliability (Klimsch score): 1
Species: rat (Sprague-Dawley)
Routes of exposure: oral
Results: negative.

ACETIC ACID

Method: equivalent or similar to EU B.31
Reliability (Klimisch score): 2
Species: rat (Wistar)
Routes of exposure: oral
Results: negative.
NOAEL (developmental toxicity): 1 600 mg / kg body weight / day.

ETHANOL

Method: equivalent or similar to OECD 414
Reliability (Klimisch score): 2
Species: rat (Sprague-Dawley)
Routes of exposure: inhalation
Results: negative. NOAEL (maternal) = 16000 ppm.
NOAEL (fetus) > = 20,000 ppm

STOT - SINGLE EXPOSURE

May cause drowsiness or dizziness

PROPAN-2-OL

Metodo: OECD 426
Affidabilità (Klimisch score): 1
Specie: Ratto (Sprague-Dawley; Femmina)
Vie d'esposizione: orale.
Risultati: Può provocare sonnolenza o vertigini.



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In base ai dati disponibili, la sostanza presenta effetti di tossicità specifica per organi bersaglio per esposizione singola ed è classificata sotto la relativa classe di pericolo CLP.

ACETIC ACID

In humans, serious effects are reported following accidental single exposures by any route, mainly due to the local corrosive action of the substance with consequent systemic effects (INRS, 2011). Inhalation exposure to vapors or aerosols immediately causes irritation symptoms.

ETHANOL

Based on available data, the substance has no specific target organ toxicity effects for single exposure and is not classified under the relevant CLP hazard class.

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

PROPAN-2-OL

Accordi to available data, this substance does not present specific organ toxicity for repeated exposition and it is not classified under the relevant CLP hazard class.

ACETIC ACID

Based on available data, the substance has no specific target organ toxicity effects on repeated exposure and is not classified under the relevant CLP hazard class

Bibliographic reference: Antihypertensive effects of acetic acid and vinegar on spontaneously hypertensive rats (Biosci. Biotechnol. Biochem Vol 65, (12), pp 2690-2694 (2001))

Reliability (Klimisch score): 2

Species: rat (Male)

Routes of exposure: oral

Results: negative. NOAEL: 290 mg / kg body weight / day

Bibliographic reference: Acetic acid, a potent stimulator of mouse epidermal macromolecular synthesis and hyperplasia but with weak tumor-promoting ability (Nat. Cancer Inst., Vol 55, pp 983-987 (1975))

Reliability (Klimisch score): 2

Species: mouse (CD-1 Female)

Routes of exposure: cutaneous

Results: negative. NOAEL: 30 mg / animal

ETHANOL

Method: equivalent or similar OECD 408

Reliability (Klimisch score): 2

Species: Rat (Sprague-Dawley; Male / Female)

Routes of exposure: oral

Results: negative. NOAEL: 1730 mg / kg body weight / day

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

PROPAN-2-OL

No data are available on the hazard in case of aspiration.

ACETIC ACID



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No data are available on the hazard in case of aspiration.

ETHANOL

No data are available on the hazard in case of aspiration.

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 effects on human health 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 contaminate soil or vegetation.

12.1. Toxicity

ETHANOL

LC50 - for Fish	14,2 g/l/96h Pimephales promelas (US EPA E03-05)
EC50 - for Crustacea	5012 mg/l/48h Ceriodaphnia dubia (ASTM E729-80)
EC50 - for Algae / Aquatic Plants	275 mg/l/72h Chlorella vulgaris (OECD 201)
Chronic NOEC for Fish	250 mg/L/5 d

ACETIC ACID

LC50 - for Fish	> 300,82 mg/l/96h Oncorhynchus mykiss (equivalent or similar to OECD 203)
EC50 - for Crustacea	> 300,82 mg/l/48h Daphnia magna (OECD 202)
EC50 - for Algae / Aquatic Plants	> 300,82 mg/l/72h Skeletonema costatum (equivalent or similar to ISO 10253)
Chronic NOEC for Algae / Aquatic Plants	> 300,82 mg/l/72h Skeletonema costatum (equivalent or similar to ISO 10253)

PROPAN-2-OL

LC50 - for Fish	9640 mg/l/96h Pimephales promelas (equivalent or similar to OECD 203)
EC50 - for Crustacea	> 10000 mg/l/48h Daphnia magna (equivalent or similar to OECD 202)

12.2. Persistence and degradability

PROPAN-2-OL

Easily biodegradable, 53% in 5 giorni (equivalent or similar to EU C.5)

ACETIC ACID

Easily biodegradable, 96% in 20 days (Price, K.S., Waggy, G.T. And Conway, R.A. 1974, J. Water pollut. Contr. Fed. Vol 46 PP 46-77)

Solubility in water > 10000 mg/l

ETHANOL

Readily biodegradable, 60% in 10 days (BOD - Standard methods for the examination of water and waste water 1971. 13th ed, American Public Health Assoc, NY)

12.3. Bioaccumulative potential



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ETHANOL

Partition coefficient: n-octanol/water -0,35 Log Kow 24°C (OECD 107)

ACETIC ACID

Partition coefficient: n-octanol/water -0,17 Log Kow (CRC Press Inc. Boca Raton. USA.)

BCF 3,16 (Q)sar (Meylan,WM, Howard,PH, Boethling,RS et al. 1999)

PROPAN-2-OL

Partition coefficient: n-octanol/water 0,05

12.4. Mobility in soil

ACETIC ACID

Based on an estimated Koc value of approx. 1, very high mobility in soil is expected.

Acetic acid volatilizes from the dry soil surface according to the vapor pressure value. Based on the pKa value of 4.76, it mainly exists in anionic form in water. The anionic form adsorbs less than the corresponding neutral form in soils containing organic carbon and clay (HSDB, 2018).

ACETIC ACID

Partition coefficient: soil/water 1,153

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 \geq than 0,1%.

12.6. Endocrine disrupting properties

According to the available data, the product does not contain substances with endocrine-disrupting properties at a rate of 0.1% by weight or more.

12.7. Other adverse effects

Information not available

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Reuse if possible. Product residues are to be considered special hazardous waste. The dangerousness of the waste that partially contains this product must be evaluated according to the laws in force. (Ref. Annex D - Part IV of Legislative Decree no. 152/2006 and subsequent amendments and adjustments).

Disposal must be entrusted to an authorized waste management company, in compliance with national and possibly local regulations.

The legal responsibility for disposal lies with the producer / holder of the waste.

Different CER (European Waste Code) codes could be applied to this mixture according to the specific circumstances that generated the waste, any alterations and contaminations.

The product as it is, out of specification in the original packaging, or poured into a suitable container for disposal as waste, or the product in specification but no longer usable (for example following an accidental spill), is to be classified with a code CER compatible with the description of use indicated in section 1.2.

The appropriate final destination of the waste will be assessed by the manufacturer according to the chemical-physical characteristics of the waste itself compatible with the authorized plant to which it will be conferred for recovery, treatment or final disposal in the manner prescribed by current regulations. Disposal via the wastewater drain is not permitted.

For hazardous substances registered according to EC Regulation 1907/2006 (REACH) for which a chemical safety report has been prepared, refer to the specific information contained in the exposure scenarios attached to this SDS.

CONTAMINATED PACKAGING

Contaminated packaging must be sent, properly labeled, for recovery or disposal in compliance with national regulations on waste management and must



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be classified with the following EWC code:

15 01 10 *: packaging containing residues of dangerous substances or contaminated by these substances

SECTION 14. Transport information

14.1. Numero ONU

ADR / RID, IMDG, IATA: 1987

14.2. Designazione ufficiale ONU di trasporto

ADR / RID: ALCOHOLS, N.O.S. MIXTURE (Propan-2-ol, Ethanol)
IMDG: ALCOHOLS, N.O.S. MIXTURE (Propan-2-ol, Ethanol)
IATA: ALCOHOLS, N.O.S. MIXTURE (Propan-2-ol, Ethanol)

14.3. Transport hazard class(es)

ADR / RID: Class: 3 Label: 3

IMDG: Class: 3 Label: 3

IATA: Class: 3 Label: 3



14.4. Packing group

ADR / RID, IMDG, IATA: II

14.5. Environmental hazards

ADR / RID: NO
IMDG: NO
IATA: NO

For Air transport, environmentally hazardous mark is only mandatory for UN 3077 and UN 3082.

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 33 Special provision: 640D	Limited Quantities: 1 L	Tunnel restriction code: (D/E)
IMDG:	EMS: <u>F-E, S-E</u>	Limited Quantities: 1 L	
IATA:	Cargo: Pass.: Special provision:	Maximum quantity: 60 L Maximum quantity: 5 L A3	Packaging instructions: 364 Packaging instructions: 353

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



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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/EC: P5c

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

Product

Point 3

Liquid substances or mixtures that meet the criteria relating to one of the following hazard classes or categories as set out in Annex I of Regulation (EC) No. 1272/2008:

- a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F;
- b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or development, 3.8 effects other than narcotic effects, 3.9 and 3.10;
- c) hazard class 4.1;
- d) hazard class 5.1.

Point 40

Substances classified as flammable gases of category 1 or 2, flammable liquids of category 1, 2 or 3, flammable solids of category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases of categories 1, 2 or 3, category 1 pyrophoric liquids or category 1 pyrophoric solids, even if not listed in Part 3 of Annex VI to Regulation (EC) No. 1272/2008

Contained substance

Point 75 ACETIC ACID
Reg. no.: 01-2119475328-30-xxxx

Substances included in one or more of the following:

- a) substances classified in one of the following classes in Annex VI, part 3, of Regulation (EC) no. 1272/2008:
 - category 1A, 1B or 2 carcinogenicity, category 1A, 1B or 2 germ cell mutagenicity, but excluding substances classified due to effects following exposure by inhalation only;
 - Reproductive toxicity of category 1A, 1B or 2, but excluding substances classified due to effects following exposure by inhalation only;
 - skin sensitization of category 1, 1A or 1B;
 - skin corrosion of category 1, 1A, 1B or 1C or skin irritation of category 2;
 - serious category 1 eye damage or category 2 eye irritation;
- b) substances listed in Annex II of Regulation (EC) no. 1223/2009 of the European Parliament and of the Council (*);
- c) substances listed in Annex IV of Regulation (EC) no. 1223/2009 for which a condition is indicated in at least one of the columns g, h or i of the table of this annex;
- d) substances listed in Appendix 13 of this annex. The ancillary requirements referred to in points 7 and 8 of column 2 of this entry apply to all mixtures intended for tattooing practices, regardless of whether they contain one of the substances referred to in points a) to d) of this column and entry.

Regulation (EC) No. 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 \geq than 0,1%.



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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.

Medical device, class IIb according to legislation 93/42.

D.Lgs. 152/2006 and following modifications

Emissions according to Chapter V, Annex I:

TAB. D Class 3 04,97 %

TAB. D Class 4 21,22 %

TAB. D Class 5 03,73 %

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. Liq. 2	Flammable liquid, category 2
Flam. Liq. 3	Flammable liquid, category 3
Skin Corr. 1A	Skin corrosion, category 1A
Eye Irrit. 2	Eye irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.



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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) 2020/878 (I Atp. CLP) of the European Parliament
 4. Regulation (EU) 2020/878 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) 2018/1480 (XIII Atp. CLP)
 16. Regulation (EU) 2019/521 (XII Atp. CLP)
 17. Regulation (EU) 2019/1148
 18. Regulation (EU) 2020/217 (XIV 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

Training for workers:

The training of workers must include contents, updates and duration according to the risk profiles assigned to the working sectors of membership, according to the procedures provided for by Legislative Decree 81/2008.



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Procedure used to derive the classification according to Regulation (EC) 1272/2008 (CLP) in relation to mixtures:

Classification of the mixture according to Regulation (EC) n. 1272/2008

Classification procedure

Flammable liquid, category 2

H225

Based on experimental data.

Severe eye corrosion, category 1

H318

Causes serious eye damage

Specific target organ toxicity - single exposure, category 3

H336

Based on literature data.

Note for the recipient of the Safety Data Sheet (SDS):

It is the recipient of this SDS who must ensure that the information contained is read and understood by all persons who handle, store, use, or otherwise come into contact in any way with the substance or mixture to which this sheet refers. In particular, the recipient must provide adequate training to personnel assigned to the use of dangerous substances or mixtures. The recipient must ensure the suitability and completeness of the information in relation to the specific use of the substance or mixture.

However, the substance or mixture to which this SDS refers must not be used for uses other than those specified in section 1. No responsibility is assumed for improper uses. Since the use of the product does not fall under the direct control of the Supplier or the manufacturer FIS&DM srl, it is the user's obligation to observe, under his own responsibility, the laws and regulations in force regarding national and Community hygiene and safety.

The information contained in this SDS is provided in good faith and is based on the current state of scientific and technical knowledge, at the revision date indicated, available from the Supplier indicated in section 1 of this sheet. The SDS should not be interpreted as a guarantee of any specific property of the substance or mixture. The information refers only to the substance or mixture specifically designated in section 1 and may not be valid for the substance or mixture used in combination with other materials or in other processes not specifically indicated in the text.

This version of the SDS supersedes all previous versions.

Changes from the previous revision.

Changes have been made to the following sections:

01/02/03/04/05/06/07/08/09/10/11/12/13/14/15/16.