

## Safety Data Sheet

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

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

#### 1.1. Product identifier

Code: 37450.00.00  
Product name: TERNALLOY 45  
Chemical name and synonym: ISO 17672:2016-Ag 145

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

Intended use: Silver brazing alloys

Identified Uses	Industrial	Professional	Consumer
Brazing technology	SU: 14, 15, 17. ERC: 4. PROC: 25. AC: 7. PC: 38, 7.	-	-

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

Name: SALDFLUX SRL SOCIETA A SOCIO UNICO  
Full address: VIA PRIVATA FRIULI 5  
District and Country: 20072 FIZZONASCO (MI) ITALIA  
Tel.: +39 (02) 90781812  
Fax: +39 (02) 90420217  
e-mail address of the competent person responsible for the Safety Data Sheet: ufficio\_tecnico@saldflux.com

#### 1.4. Emergency telephone number

For urgent inquiries refer to:

Austria	Poison Information Center (AT): +43-(0)1-406 43 43
Belgio	Poison Information Center (BE): +32 70 245 245
Croazia	Poison Control (CR): +385 1 2348 342
Repubblica Ceca	Poison Control (CS): +420 224 919 293, +420 224 915 402
Danimarca	Poison Information Center (DK): +45 82 12 12 12
Estonia	Poison Control (ET): 16662, (+372) 626 93 90
Finlandia	Poison Information Center (FI): +358 9 471 977
Francia	ORFILA (FR): + 01 45 42 59 59
Germania	Poison Information Center Berlino (DE): +49 030 30686 790 (assistenza 24 ore su 24, English/Deutsch)
Grecia	Poison Information Center (EL): (0030) 2107793777
Ungheria	Poison Information Service (HU): (+ 36-80) 201-199
Islanda	Poison Information Center: 543 2222
Lettonia	Poison Information Center (LV): +371 67042473
Lituania	Poison Information Office (LT): +370 5236 20 52 or +370 687 53 378
Lussemburgo	Belgian Poison Center: (+352) 8002-5500
Paesi Bassi	National Poisons Information Center (NVIC): 030-274 8888
Norvegia	Poison Center: 22 59 13 00
Portogallo	Centro Informação AntiVenenos (CIAV): 800 250 250
Spagna	Poison Information Center(ES): +34 91 562 04 20
Svezia	112 – ask for Poisons Information

### SECTION 2. Hazards identification

#### 2.1. Classification of the substance or mixture

The product is not classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP). However, since the product contains hazardous substances in concentrations such as to be declared in section no. 3, it requires a safety data sheet with appropriate information, compliant to (EU) Regulation 2020/878.

Hazard classification and indication: --

**SECTION 2. Hazards identification ... / >>****2.2. Label elements**

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

Hazard pictograms: --

Signal words: --

Hazard statements:  
**EUH210** Safety data sheet available on request.

Precautionary statements: --

**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 with endocrine disrupting properties in concentration  $\geq$  0.1%.

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

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
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**Silver in grain**

INDEX		$45 \leq x < 46$	
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EC	231-131-3		
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CAS	7440-22-4		
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**COPPER**

INDEX		$26 \leq x < 29$	
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EC	231-159-6		
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CAS	7440-50-8		
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**ZINC**

INDEX	030-001-01-9	$24 \leq x < 26$	<b>EUH401</b>
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EC	231-175-3		
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CAS	7440-66-6		
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**TIN**

INDEX		$1,5 \leq x < 3$	
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EC	231-141-8		
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CAS	7440-31-5		
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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**

Not specifically necessary. Observance of good industrial hygiene is recommended.

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

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

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

Information not available

**SECTION 5. Firefighting measures****5.1. Extinguishing media**

SUITABLE EXTINGUISHING EQUIPMENT

Choose the most appropriate extinguishing equipment for the specific case.

## SECTION 5. Firefighting measures ... / >>

### 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

The product is neither flammable nor combustible.

### 5.3. Advice for firefighters

#### 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

Use breathing equipment if fumes or powders are released into the air. These indications apply for both processing staff and those involved in emergency procedures.

### 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

### 6.3. Methods and material for containment and cleaning up

Confine using earth or inert material. Collect as much material as possible and eliminate the rest using jets of water. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4. Reference to other sections

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

## SECTION 7. Handling and storage

### 7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use.

### 7.2. Conditions for safe storage, including any incompatibilities

Keep the product in clearly labelled containers. 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:

CZE	Česká Republika	Nařízení vlády č. 41/2020 Sb. Nařízení vlády, kterým se mění nařízení vlády č. 361/2007 Sb., kterým se stanoví podmínky ochrany zdraví při práci, ve znění pozdějších předpisů
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
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
NOR	Norge	Forskrift om endring i forskrift om tiltaksverdier og grenseverdier for fysiske og kjemiske faktorer i arbeidsmiljøet samt smitterisikogrupper for biologiske faktorer (forskrift om tiltaks- og grenseverdier), 21. august 2018 nr. 1255
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	TLV-ACGIH	ACGIH 2022

**SECTION 8. Exposure controls/personal protection ... / >>**
**TIN**
**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations		
		mg/m3	ppm	mg/m3	ppm			

TLV-ACGIH

2

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

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute local	Acute	Chronic	Chronic
	local	systemic	local	systemic		systemic	local	systemic
Oral							80 mg/kg/d	80 mg/kg/d
Inhalation							3.476 mg/m3	3.476 mg/m3
Skin			80 mg/kg/d	80 mg/kg/d				

**Silver in grain**
**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations		
		mg/m3	ppm	mg/m3	ppm			

TLV-ACGIH

0,1

**Predicted no-effect concentration - PNEC**

Normal value in fresh water	0,04	mg/l
Normal value in marine water	0,86	mg/l
Normal value for the terrestrial compartment	0,794	mg/kg/d

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

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute local	Acute	Chronic	Chronic
	local	systemic	local	systemic		systemic	local	systemic
Inhalation							0,04 mg/m3	

**ZINC**
**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations		
		mg/m3	ppm	mg/m3	ppm			
MAK	DEU	2		4		INHAL RESP		
MAK	DEU	0,1		0,4				

**Predicted no-effect concentration - PNEC**

Normal value in fresh water	20,6	mg/l
Normal value in marine water	6,1	mg/l
Normal value for fresh water sediment	117,8	mg/kg
Normal value for marine water sediment	56,5	mg/kg

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

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute local	Acute	Chronic	Chronic
	local	systemic	local	systemic		systemic	local	systemic
Oral			0,83 mg/kg/d	VND				
Inhalation			2,5 mg/m3	VND			2,5 mg/m3	VND
Skin			83 mg/kg/d	VND			83 mg/kg/d	VND

**SECTION 8. Exposure controls/personal protection ... / >>**
**COPPER**
**Threshold Limit Value**

Type	Country	TWA/8h mg/m3	ppm	STEL/15min mg/m3	ppm	Remarks / Observations
TLV	CZE	1		2		INHAL
MAK	DEU	0,01		0,02		
MAK	DEU	0,01		0,02		RESP
VLEP	FRA	0,2				
TLV	NOR	1				
WEL	GBR	0,2				As Cu
TLV-ACGIH		0,2				

**Predicted no-effect concentration - PNEC**

Normal value in fresh water	7,8	mg/l
Normal value in marine water	52	mg/l
Normal value for fresh water sediment	87	mg/kg
Normal value for marine water sediment	676	mg/kg

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

Route of exposure	Effects on consumers		Effects on workers		Chronic local	Chronic systemic	Chronic local	Chronic systemic
	Acute local	Acute systemic	Chronic local	Chronic systemic				
Inhalation			20 mg/m3	1 mg/m3			1 mg/m3	1 mg/m3
Skin			137 mg/kg/d	VND			137 mg/kg/d	273 mg/kg/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 ; LOW = low hazard

; MED = medium hazard ; HIGH = high hazard.

**8.2. Exposure controls**

Comply with the safety measures usually applied when handling chemical substances.

**HAND PROTECTION**

None required.

**SKIN PROTECTION**

None required.

**EYE PROTECTION**

None required.

**RESPIRATORY PROTECTION**

None required, unless indicated otherwise in the chemical risk assessment.

**ENVIRONMENTAL EXPOSURE CONTROLS**

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

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

Properties	Value	Information
Appearance	Bare rods - Wire - Strip & Foil	
Colour	silver	
Odour	odourless	
Odour threshold	not applicable	
Melting point / freezing point	> 650 °C	
Initial boiling point	> not applicable	
Boiling range	not applicable	
Flammability	incombustible	
Lower explosive limit	not applicable	
Upper explosive limit	not applicable	
Flash point	not available	
Auto-ignition temperature	not applicable	
Decomposition temperature	not applicable	
pH	not applicable	
Kinematic viscosity	not applicable	
Solubility	not applicable	
Partition coefficient: n-octanol/water	not applicable	
Vapour pressure		

**SECTION 9. Physical and chemical properties ... / >>**

Density and/or relative density	not available
Relative vapour density	9,1
Particle characteristics	not applicable
	not available

**9.2. Other information**

9.2.1. Information with regard to physical hazard classes

**Flammable liquids**

Sustained combustibility does not sustain combustion

9.2.2. Other safety characteristics

Evaporation rate	not applicable
Explosive properties	not applicable
Oxidising properties	not applicable

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

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

**10.2. Chemical stability**

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

**10.3. Possibility of hazardous reactions**

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

**ZINC**

Risk of explosion on contact with: ammonium nitrate, ammonium sulphide, barium peroxide, lead nitride, chlorates, chromium trioxide, sodium hydroxide, oxidising agents, performic acid, acids, tetrachloromethane, water. May react dangerously with: alkaline hydroxides, bromine pentafluoride, calcium chloride, fluorine, hexachloroethane, nitrobenzene, potassium dioxide, carbon disulphide, silver. Reacts with: strong acids, strong alkalis. May develop: hydrogen.

**10.4. Conditions to avoid**

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

**10.5. Incompatible materials****ZINC**

Incompatible with: water, acids, strong alkalis.

**10.6. Hazardous decomposition products**

Information not available

**SECTION 11. Toxicological information**

According to currently available data, this product has not yet produced health damages. Anyway, it must be handled according to good industrial practices.

**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

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

**SECTION 11. Toxicological information ... / >>**

Information not available

Interactive effects

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)

Silver in grain LD50 (Oral):	> 2000 mg/kg
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SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

**11.2. Information on other hazards**

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

**SECTION 12. Ecological information**

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

**12.1. Toxicity**

Silver in grain	
LC50 - for Fish	0,0062 mg/l/96h
EC50 - for Crustacea	6E-05 mg/l/48h
EC50 - for Algae / Aquatic Plants	0,002 mg/l/72h

**SECTION 12. Ecological information** ... / >>**12.2. Persistence and degradability**

ZINC

Degradability: information not available

COPPER

Solubility in water

&lt; 0,1 mg/l

Degradability: information not available

**12.3. Bioaccumulative potential**

Information not available

**12.4. Mobility in soil**

Information not available

**12.5. Results of PBT and vPvB assessment**On the basis of available data, the product does not contain any PBT or vPvB in percentage  $\geq$  than 0,1%.**12.6. Endocrine disrupting properties**

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

**12.7. Other adverse effects**

Information not available

**SECTION 13. Disposal considerations****13.1. Waste treatment methods**

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.

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

CONTAMINATED PACKAGING

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

**SECTION 14. Transport information**

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

**14.1. UN number or ID number**

not applicable

**14.2. UN proper shipping name**

not applicable

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

not applicable

**14.4. Packing group**

not applicable

**14.5. Environmental hazards**

not applicable



**SECTION 14. Transport information** ... / >>**14.6. Special precautions for user**

not applicable

**14.7. Maritime transport in bulk according to IMO instruments**

Information not relevant

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**Seveso Category - Directive 2012/18/EU:

None

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

Point 75

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

not applicable

Substances in Candidate List (Art. 59 REACH)On the basis of available data, the product does not contain any SVHC in percentage  $\geq$  than 0,1%.Substances subject to authorisation (Annex XIV REACH)

None

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

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Information not available

**15.2. Chemical safety assessment**

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

**SECTION 16. Other information**

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

**EUH210**

Safety data sheet available on request.

**EUH401**

To avoid risks to human health and the environment, comply with the instructions for use.

Use descriptor system:

<b>AC</b>	7	Metal articles
<b>ERC</b>	4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
<b>PC</b>	38	Welding and soldering products, flux products
<b>PC</b>	7	Base metals and alloys
<b>PROC</b>	25	Other hot work operations with metals
<b>SU</b>	14	Manufacture of basic metals, including alloys
<b>SU</b>	15	Manufacture of fabricated metal products, except machinery and equipment
<b>SU</b>	17	General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)

**SECTION 16. Other information ... / >>**

- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

**GENERAL BIBLIOGRAPHY**

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

**Note for users:**

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

**SECTION 16. Other information ... / >>****CALCULATION METHODS FOR CLASSIFICATION**

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

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

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

Changes to previous review:

The following sections were modified:

02 / 08 / 09 / 11 / 13 / 15 / 16.