

## V400MET/ISA - SPRAYS - EFECTO METALES PRECIOSOS 400 ml ISAVAL

# 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: V400MET/ISA  
 Product name: SPRAYS - EFECTO METALES PRECIOSOS 400 ml ISAVAL  
 UFI: 3Y60-X0HY-S00E-7PVR

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

Intended use: Metallic effect aerosol paint.

Identified Uses	Industrial	Professional	Consumer
Consumer	-	-	✓
Industrial Use	✓	-	-
Professional Use	-	✓	-

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

Name: AMBRO-SOL S.R.L.  
 Full address: Via per Pavone del Mella n.21  
 District and Country: 25020 Cigole (BS)  
 Italia  
 Tel. +39 030 9959674  
 Fax +39 030 959265

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

quality@ambro-sol.com

### 1.4. Emergency telephone number

For urgent inquiries refer to

Centro Antiveleni di Pavia: Tel. (+39) 0382-24444 (IRCCS Fondazione Maugeri - Pavia)  
 Centro Antiveleni di Bergamo: Tel. 800 883300 (Ospedale Papa Giovanni XXIII - Bergamo)  
 Centro Antiveleni di Firenze: Tel. 055 7947819 (Ospedale Careggi - Firenze)  
 Centro Antiveleni di Roma: Tel. 06 3054 343 (Policlinico Gemelli - Roma)  
 Centro Antiveleni di Napoli: Tel. 081 5453333 (Ospedale Cardarelli - Napoli)  
 Servicio de Información Toxicológica (SIT) España: Tel. 91 5620420 (Instituto Nacional de Toxicología y Ciencias Forenses - España)  
 Centro de Informação Antivenenos (CIAV): Tel. 800 250 250 (Instituto Nacional de Emergência Médica - Portugal)  
 Centre Antipoison de Paris: Tel. 01 40 05 48 48 (Centre Antipoison et de Toxicovigilance de Paris - France)  
 Pomorskie Centrum Toksykologii: Tel. (58) 682 04 04 (Zakład Toksykologii Klinicznej - Polska)  
 American Association of Poison Control Centers (USA): Tel. +1 (800) 222 1222  
 Giftnotrufzentralen (Berlin, Deutschland): Tel. +49 030 19 240

## SECTION 2. Hazards identification

### 2.1. Classification of the substance or mixture

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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.
Aspiration hazard, category 1	H304	May be fatal if swallowed and enters airways.
Eye irritation, category 2	H319	Causes serious eye irritation.
Skin irritation, category 2	H315	Causes skin irritation.
Specific target organ toxicity - single exposure, category 3	H336	May cause drowsiness or dizziness.
Hazardous to the aquatic environment, chronic toxicity, category 2	H411	Toxic to aquatic life with long lasting effects.

**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:

<b>H222</b>	Extremely flammable aerosol.
<b>H229</b>	Pressurised container: may burst if heated.
<b>H319</b>	Causes serious eye irritation.
<b>H315</b>	Causes skin irritation.
<b>H336</b>	May cause drowsiness or dizziness.
<b>H411</b>	Toxic to aquatic life with long lasting effects.

Precautionary statements:

<b>P210</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
<b>P251</b>	Do not pierce or burn, even after use.
<b>P410+P412</b>	Protect from sunlight. Do not expose to temperatures exceeding 50°C / 122°F.
<b>P211</b>	Do not spray on an open flame or other ignition source.
<b>P273</b>	Avoid release to the environment.
<b>P391</b>	Collect spillage.
<b>P102</b>	Keep out of reach of children.

**Contains:**                      Hydrocarbons, C6, isoalkanes  
Isobutyl acetate

Statements on the aspiration toxicity classification were not

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included in the label elements, based on section 1.3.3. of Annex I to CLP.

VOC (Directive 2004/42/EC) :

Special finishes.

VOC given in g/litre of product in a ready-to-use condition : 561,86  
Limit value: 840,00

**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%.

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

**3.2. Mixtures**

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
<b>Xylene (mixture of isomers)</b>		
CAS 1330-20-7	$19 \leq x < 23$	Flam. Liq. 3 H226, Acute Tox. 4 H312, Acute Tox. 4 H332, Eye Irrit. 2 H319, Skin Irrit. 2 H315, Classification note according to Annex VI to the CLP Regulation: C
EC 215-535-7		
INDEX 601-022-00-9		
Reg. no. 01-2119488216-32-XXXX		
<b>Hydrocarbons, C6, isoalkanes</b>		
CAS 64742-49-0	$15 \leq x < 19$	Flam. Liq. 2 H225, Asp. Tox. 1 H304, Skin Irrit. 2 H315, STOT SE 3 H336, Aquatic Chronic 2 H411, Classification note according to Annex VI to the CLP Regulation: P
EC 265-151-9		
INDEX 649-328-00-1		
Reg. no. 012119484651-34-XXXX		
<b>Propane</b>		
CAS 74-98-6	$15 \leq x < 19$	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. 01-2119486944-21-0046		
<b>Petroleum Resins</b>		
CAS 64742-16-1	$11 \leq x < 15$	Aquatic Chronic 4 H413
EC 265-116-8		
INDEX -		
<b>Butane</b>		
CAS 106-97-8	$7 \leq x < 9$	Flam. Gas 1A H220, Press. Gas (Liq.) H280, Classification note according to Annex VI to the CLP Regulation: C U

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EC 203-448-7

INDEX 601-004-00-0

Reg. no. 01-2119474691-32-XXXX

**Copper powder**

CAS 7440-50-8

 $5 \leq x < 7$ 

Acute Tox. 4 H302, Eye Irrit. 2 H319, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1, Classification note according to Annex VI to the CLP Regulation: L

EC 231-159-6

INDEX -

Reg. no. 01-2119480154-42-XXXX

**Dimethyl carbonate**

CAS 616-38-6

 $5 \leq x < 7$ 

Flam. Liq. 2 H225

EC 210-478-4

INDEX 607-013-00-6

**Aluminium Powder (stabilised)**

CAS 7429-90-5

 $3 \leq x < 5$ 

Flam. Sol. 1 H228, Water-react. 2 H261, Classification note according to Annex VI to the CLP Regulation: T

EC 231-072-3

INDEX 013-002-00-1

Reg. no. 01-2119529243-45-XXXX

**Isobutyl acetate**

CAS 110-19-0

 $1 \leq x < 3$ 

Flam. Liq. 2 H225, STOT SE 3 H336, EUH066, Classification note according to Annex VI to the CLP Regulation: C

EC 203-745-1

INDEX 607-026-00-7

Reg. no. 01-2119488971-22-XXXX

**Copper flakes (coated with aliphatic acid)**

CAS

 $1 \leq x < 2,5$ 

Acute Tox. 3 H331, Acute Tox. 4 H302, Eye Irrit. 2 H319, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1

EC -

INDEX 029-019-01-X

**Isobutane**

CAS 75-28-5

 $1 \leq x < 3$ 

Flam. Gas 1A H220, Press. Gas H280

EC 200-857-2

INDEX 601-004-00-0

Reg. no. 01-2119485395-27-XXXX

**Zinc Powder (stabilised)**

CAS 7440-66-6

 $1 \leq x < 2,5$ 

Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1, Classification note according to Annex VI to the CLP Regulation: T

EC 231-175-3

INDEX 030-001-01-9

Reg. no. 01-2119467174-37-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.

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Percentage of propellants: 26,00 %

Hydrocarbons, C6, isoalkanes

Hydrocarbons, C6, isoalkanes, <5% n-hexane: a complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C4 through C11 and boiling in the range of approximately minus 20Å ° C to 190Å ° C (-4Å ° F to 374Å ° F).

**SECTION 4. First aid measures****4.1. Description of first aid measures**

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

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

INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.

INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

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

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

Information not available

**SECTION 5. Firefighting measures****5.1. Extinguishing media****SUITABLE EXTINGUISHING EQUIPMENT**

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

**UNSUITABLE EXTINGUISHING EQUIPMENT**

None in particular.

Aluminium Powder (stabilised)

Dry sand; Special powder against metal combustion. Unsuitable extinguishing media: water, foam ABC powder, carbon dioxide (CO2).

**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).

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### 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

#### 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:

DEU	Deutschland	TRGS 900 - Seite 1 von 69 (Fassung 29.03.2019)- Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte
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
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
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
POL	Polska	ROZPORZĄDZENIE MINISTRA RODZINY, PRACY I POLITYKI SPOŁECZNEJ z dnia 12 czerwca 2018 r
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Third edition, published 2018)
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.

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TLV-ACGIH

ACGIH 2020

**Xylene (mixture of isomers)**

**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	440	100	880	200	SKIN
MAK	DEU	440	100	880	200	SKIN
VLA	ESP	221	50	442	100	SKIN
VLEP	FRA	221	50	442	100	SKIN
VLEP	ITA	221	50	442	100	SKIN
VLE	PRT	221	50	442	100	SKIN
NDS/NDSCh	POL	100		200		SKIN
WEL	GBR	220	50	441	100	SKIN
OEL	EU	221	50	442	100	SKIN
TLV-ACGIH		434	100	651	150	

**Predicted no-effect concentration - PNEC**

Normal value in fresh water	327	µg/l
Normal value in marine water	327	µg/l
Normal value for fresh water sediment	12,46	mg/kg/d
Normal value for marine water sediment	12,46	mg/kg/d
Normal value of STP microorganisms	6,58	mg/l
Normal value for the terrestrial compartment	2,31	mg/kg/d

**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				1,6 mg/kg bw/d				
Inhalation				14,8 mg/m3			289 mg/m3	77 mg/m3
Skin				108 mg/kg bw/d				180 mg/kg bw/d

**Hydrocarbons, C6, isoalkanes**

**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				1301 mg/kg bw/d				
Inhalation				1137 mg/m3				5306 mg/m3
Skin				1377 mg/kg bw/d				13964 mg/kg bw/d

**Propane**

**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	1800	1000	7200	4000	

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MAK	DEU	1800	1000	7200	4000
VLA	ESP		1000		
NDS/NDSch	POL	1800			

**Butane**  
**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	2400	1000	9600	4000	
MAK	DEU	2400	1000	9600	4000	
VLA	ESP		1000			Gases
VLEP	FRA	1900	800			
NDS/NDSch	POL	1900		3000		
WEL	GBR	1450	600	1810	750	
WEL	GBR		4			RESP
TLV-ACGIH					1000	

**Copper powder**  
**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
MAK	DEU	0,01		0,02		
MAK	DEU	0,01		0,02		RESP
VLA	ESP	0,1				RESP Como Cu
VLEP	FRA	0,2				
NDS/NDSch	POL	0,2				Na Cu
WEL	GBR	0,2				As Cu
TLV-ACGIH		0,2				

**Predicted no-effect concentration - PNEC**

Normal value in fresh water	7,8	µg/l
Normal value in marine water	5,2	µg/l
Normal value for fresh water sediment	87	mg/kg/d
Normal value for marine water sediment	676	mg/kg/d
Normal value of STP microorganisms	230	µg/l
Normal value for the terrestrial compartment	65	mg/kg/d

**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		20 mg/m3			NPI	20 mg/m3	NPI	
Skin	NPI	273 mg/kg bw/d	NPI	137 mg/kg bw/d	NPI	273 mg/kg bw/d	NPI	137 mg/kg bw/d

**Dimethyl carbonate**

Predicted no-effect concentration - PNEC



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Normal value in fresh water	500	µg/l
Normal value in marine water	50	µg/l
Normal value for fresh water sediment	NEA	
Normal value for marine water sediment	NEA	
Normal value for water, intermittent release	1	mg/l
Normal value of STP microorganisms	99	mg/l
Normal value for the terrestrial compartment	NEA	
Normal value for the atmosphere	NPI	

**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		50 mg/kg bw/day		250 µg/kg bw/day				
Inhalation	42,5 mg/m3	42,5 mg/m3	VND	1,1 mg/m3	57 mg/m3	57 mg/m3	NPI	4,4 mg/m3
Skin	8,9 mg/cm2	33,3 mg/kg bw/day	NPI	250 µg/kg bw/day	17,7 mg/cm2	66,7 µg/kg bw/day	NPI	500 mg/kg bw/day

**Aluminium Powder (stabilised)**

**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
VLA	ESP	10				
VLEP	FRA	5				
NDS/NDSCh	POL	2,5				INHAL
NDS/NDSCh	POL	1,2				RESP
WEL	GBR	10				INHAL
WEL	GBR	4				RESP
TLV-ACGIH		1	0,9			

**Predicted no-effect concentration - PNEC**

Normal value in fresh water	VND
Normal value in marine water	VND
Normal value for fresh water sediment	VND
Normal value for marine water sediment	VND
Normal value for water, intermittent release	VND
Normal value of STP microorganisms	20 mg/l
Normal value for the food chain (secondary poisoning)	VND
Normal value for the terrestrial compartment	VND
Normal value for the atmosphere	NPI

**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		3,95 mg/kg bw/d
Inhalation						NPI	3,72 mg/m3	3,72 mg/m3

**Isobutyl acetate**

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**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	300	62	600 (C)	124 (C)	
VLA	ESP	724	150			
VLEP	FRA	710	150	940	200	
NDS/NDSch	POL	240		720		
WEL	GBR	724	150	903	187	
OEL	EU	241	50	723	150	
TLV-ACGIH			50		150	

**Predicted no-effect concentration - PNEC**

Normal value in fresh water		170		µg/l
Normal value in marine water		17		µg/l
Normal value for fresh water sediment		877		µg/kg/d
Normal value for marine water sediment		87,7		µg/kg/d
Normal value of STP microorganisms		200		mg/l
Normal value for the terrestrial compartment		75,5		µg/kg/d

**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		5 mg/kg bw/d		5 mg/kg bw/d				
Inhalation	300 mg/m3		35,7 mg/m3	35,7 mg/m3	600 mg/m3	600 mg/m3	300 mg/m3	300 mg/m3
Skin	NPI	5 mg/kg bw/d	NPI	5 mg/kg bw/d	NPI	10 mg/kg bw/d	NPI	10 mg/kg bw/d

**Copper flakes (coated with aliphatic acid)**

**Predicted no-effect concentration - PNEC**

Normal value in fresh water		78		mg/l
Normal value in marine water		52		mg/l
Normal value for fresh water sediment		87		mg/l
Normal value for marine water sediment		676		mg/kg
Normal value of STP microorganisms		23		mg/l

**Isobutane**

**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV-ACGIH			800			

**Zinc Powder (stabilised)**

**Threshold Limit Value**

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

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MAK	DEU	0,1	0,4	RESP
Predicted no-effect concentration - PNEC				
Normal value in fresh water			20,6	µg/l
Normal value in marine water			6,1	µg/l
Normal value for fresh water sediment			117,8	mg/kg/d
Normal value for marine water sediment			56,5	mg/kg/d
Normal value of STP microorganisms			100	µg/l
Normal value for the terrestrial compartment			35,6	mg/kg/d

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		830 µg/kg bw/d				
Inhalation	NPI	NPI	NPI	2,5 mg/m3	NPI	NPI	NPI	5 mg/m3
Skin	NPI	NPI	NPI	83 mg/kg/d	NPI	NPI	NPI	83 mg/kg bw/d

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics				
Predicted no-effect concentration - PNEC				
Normal value for the atmosphere				NPI

White mineral oil Threshold Limit Value					
Type	Country	TWA/8h	STEL/15min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm
VLEP	ITA	5		10	

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				25 mg/kg bw/d				
Inhalation				34,78 mg/m3				164,56 mg/m3
Skin				93,02 mg/kg bw/d				217,05 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.

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### 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.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

## SECTION 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Appearance	aerosol
Colour	Copper - Gold - Silver
Odour	characteristic of solvent
Odour threshold	Not available
pH	Not available
Melting point / freezing point	Not available
Initial boiling point	Not available
Boiling range	Not available
Flash point	< 0 °C
Evaporation Rate	Not available
Flammability of solids and gases	flammable gas
Lower inflammability limit	Not available
Upper inflammability limit	Not available
Lower explosive limit	Not available
Upper explosive limit	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	0,73 ÷ 0,77 g/ml a 20°C
Solubility	insoluble in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available

**V400MET/ISA - SPRAYS - EFECTO METALES PRECIOSOS 400 ml  
ISAVAL**

Viscosity 10`` - 13`` Coppa Ford

Explosive properties not applicable

Oxidising properties not applicable

**9.2. Other information**

VOC (Directive 2004/42/EC) : 74,92 % - 561,86 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.

Isobutyl acetate

Decomposes under the effect of heat. Attacks various types of plastic materials.

**10.2. Chemical stability**

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

**10.3. Possibility of hazardous reactions**

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

Xylene (mixture of isomers)

Stable in normal conditions of use and storage. Reacts violently with: strong oxidants, strong acids, nitric acid, perchlorates. May form explosive mixtures with: air.

Dimethyl carbonate

May form explosive mixtures with: air.

Aluminium Powder (stabilised)

Develops hydrogen on contact with: water.

Develops hydrogen on contact with: acids, alkalis, halogens, oxidising agents.

Isobutyl acetate

Risk of explosion on contact with: strong oxidising agents. May react violently with: alkaline hydroxides, potassium tert-butoxide. Forms explosive mixtures with: air.

Zinc Powder (stabilised)

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.

**V400MET/ISA - SPRAYS - EFECTO METALES PRECIOSOS 400 ml  
ISAVAL****10.4. Conditions to avoid**

Avoid overheating.

Isobutyl acetate

Avoid exposure to: sources of heat,naked flames.

Zinc Powder (stabilised)

Avoid exposure to: heat,moisture.

**10.5. Incompatible materials**

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

Dimethyl carbonate

Avoid contact with: oxidising agents,strong reducing agents.

Isobutyl acetate

Incompatible with: strong oxidants,nitrates,strong acids,strong bases.

Zinc Powder (stabilised)

Incompatible with: water,acids,strong alkalis.

**10.6. Hazardous decomposition products**

Information not available

**SECTION 11. Toxicological information**

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

**11.1. Information on toxicological effects**Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Xylene (mixture of isomers)

WORKERS: inhalation; contact with the skin.

POPULATION: ingestion of contaminated food or water; inhalation of ambient air.

**V400MET/ISA - SPRAYS - EFECTO METALES PRECIOSOS 400 ml  
ISAVAL**Delayed and immediate effects as well as chronic effects from short and long-term exposure

Xylene (mixture of isomers)

Toxic effect on the central nervous system (encephalopathy); irritating for the skin, conjunctiva, cornea and respiratory apparatus.

Interactive effects

Xylene (mixture of isomers)

Intake of alcohol interferes with the metabolism of the substance, inhibiting it. Ethanol consumption (0.8 g/kg) before a 4-hour exposure to xylene vapours (145 and 280 ppm) causes a 50% reduction in the excretion of methyl hippuric acid, whereas the concentration of xylenes in the blood increases approx. 1.5-2 times. At the same time there is an increase in the secondary side effects of the ethanol. The metabolism of the xylenes is increased by phenobarbital and 3-methyl-colantrene type enzyme inducers. Aspirin and xylenes mutually inhibit their conjugation with the glycine, which results in a decrease in urinary excretion of methyl hippuric acid. Other industrial products can interfere with the metabolism of xylenes.

ACUTE TOXICITY

ATE (Inhalation) of the mixture:

> 20 mg/l

ATE (Oral) of the mixture:

>2000 mg/kg

ATE (Dermal) of the mixture:

>2000 mg/kg

Petroleum Resins

LD50 (Oral) 2000 mg/kg

Dimethyl carbonate

LD50 (Oral) > 5000 mg/kg/bw rat

LD50 (Dermal) > 2000 mg/kg/ bw rabbit

LC50 (Inhalation) > 5,36 mg/m<sup>3</sup>/4h rat

Aluminium Powder (stabilised)

LD50 (Oral) > 15000 mg/kg bw rat

LC50 (Inhalation) 888 mg/m<sup>3</sup>/4h rat

Zinc Powder (stabilised)

LD50 (Oral) > 2000 mg/kg bw rat

**V400MET/ISA - SPRAYS - EFECTO METALES PRECIOSOS 400 ml  
ISAVAL**

Xylene (mixture of isomers)

LD50 (Oral) > 3000 mg/kg rat

LD50 (Dermal) > 1700 mg/kg rabbit

LC50 (Inhalation) 5000 ppm/4h rat

Butane

LC50 (Inhalation) > 1442,738 mg/l/15min rat

Propane

LC50 (Inhalation) 800000 ppm 15 min

Isobutyl acetate

LD50 (Oral) 13413 mg/kg bw rat

LD50 (Dermal) 17400 mg/kg bw rabbit

LC50 (Inhalation) 30 mg/l/6h rat

Hydrocarbons, C6, isoalkanes

LD50 (Oral) > 2000 mg/kg bw rat

LD50 (Dermal) > 2000 mg/kg bw rabbit

LC50 (Inhalation) > 25 mg/l/4h air (rat)

Copper powder

LD50 (Oral) > 300 mg/kg bw rat

LD50 (Dermal) 2000 mg/kg bw rat

LC50 (Inhalation) 5,11 mg/l/4h rat

Isobutane

LC50 (Inhalation) > 1442,738 mg/l/15min rat



**V400MET/ISA - SPRAYS - EFECTO METALES PRECIOSOS 400 ml  
ISAVAL**

Copper flakes (coated with aliphatic acid)

LD50 (Oral) 500 mg/kg Ratto, maschio e femmina

LD50 (Dermal) > 2000 mg/kg Ratto, maschio e femmina

LC50 (Inhalation) 0,7 mg/l/4h Ratto, maschio

**SKIN CORROSION / IRRITATION**

Causes skin irritation

**SERIOUS EYE DAMAGE / IRRITATION**

Causes serious eye irritation

**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

Xylene (mixture of isomers)

Classified in Group 3 (not classifiable as a human carcinogen) by the International Agency for Research on Cancer (IARC).  
The US Environmental Protection Agency (EPA) affirms that "the data is inadequate for an assessment of the carcinogenic potential".

**REPRODUCTIVE TOXICITY**

Does not meet the classification criteria for this hazard class

**STOT - SINGLE EXPOSURE**

May cause drowsiness or dizziness

**STOT - REPEATED EXPOSURE**

Does not meet the classification criteria for this hazard class

**ASPIRATION HAZARD**

Toxic for aspiration

**SECTION 12. Ecological information**

**V400MET/ISA - SPRAYS - EFECTO METALES PRECIOSOS 400 ml  
ISAVAL**

This product is dangerous for the environment and is toxic for aquatic organisms. In the long term, it have negative effects on acquatic environment.

**12.1. Toxicity**

Petroleum Resins

EC50 - for Crustacea 100 mg/l/48h

EC50 - for Algae / Aquatic Plants 100 mg/l/72h

Dimethyl carbonate

LC50 - for Fish 1134 mg/l/96h 4 days

EC50 - for Crustacea > 80 mg/l/48h

EC50 - for Algae / Aquatic Plants > 70 mg/l/72h

Chronic NOEC for Fish 100 mg/l 4 days

Chronic NOEC for Crustacea 25 mg/l 21 days

Chronic NOEC for Algae / Aquatic Plants > 50 mg/l 72 h

Aluminium Powder (stabilised)

LC50 - for Fish > 78 µg/l/96h

EC50 - for Crustacea 1,5 mg/l/48h

EC50 - for Algae / Aquatic Plants 16,9 µg/l

Chronic NOEC for Fish 25,1 µg/l 7 days

Chronic NOEC for Crustacea 5 µg/l 48 h

Chronic NOEC for Algae / Aquatic Plants 45,7 mg/l 4 days

Zinc Powder (stabilised)

LC50 - for Fish 112 µg/l/96h

EC50 - for Crustacea 155 µg/l/48h

Chronic NOEC for Fish 720 µg/l 84 days

Chronic NOEC for Crustacea 300 µg/l 3 months

Chronic NOEC for Algae / Aquatic Plants 20 µg/l 4 days

Xylene (mixture of isomers)

LC50 - for Fish 2,6 mg/l/96h

EC50 - for Algae / Aquatic Plants 4,6 mg/l/72h

EC10 for Crustacea 1,9 mg/l/21d

Chronic NOEC for Fish 1,3 mg/l 56 days

Chronic NOEC for Crustacea 960 µg/l 7 days

Chronic NOEC for Algae / Aquatic Plants 440 µg/l 73 h

Butane

LC50 - for Fish > 24,11 mg/l/96h

Propane

**V400MET/ISA - SPRAYS - EFECTO METALES PRECIOSOS 400 ml  
ISAVAL**

LC50 - for Fish 85,82 mg/l/96h  
EC50 - for Crustacea 41,82 mg/l/48h

Isobutyl acetate

LC50 - for Fish 16,6 mg/l/96h  
EC50 - for Crustacea 24,6 mg/l/48h  
EC50 - for Algae / Aquatic Plants 321,5 mg/l/72h  
Chronic NOEC for Crustacea 23,2 mg/l 21 days  
Chronic NOEC for Algae / Aquatic Plants 1505 mg/l 72 h

Hydrocarbons, C6, isoalkanes

LC50 - for Fish 8,41 mg/l/96h  
EC50 - for Crustacea 4,7 mg/l/48h  
EC50 - for Algae / Aquatic Plants > 12 mg/l/72h  
Chronic NOEC for Algae / Aquatic Plants 6,47 mg/l

Copper powder

LC50 - for Fish > 2,8 µg/l  
EC50 - for Crustacea > 1 µg/l  
EC50 - for Algae / Aquatic Plants > 16,5 µg/l  
Chronic NOEC for Fish 9,5 µg/l 6,3 months  
Chronic NOEC for Crustacea 9,9 µg/l 46 days  
Chronic NOEC for Algae / Aquatic Plants 30 µg/l 7 days

Isobutane

LC50 - for Fish > 24,11 mg/l/96h

**12.2. Persistence and degradability**

Propane

Global Warming Potential (GWP): 3. Ozone Depletion Potential (ODP): 0.

Dimethyl carbonate

Rapidly degradable

Aluminium Powder (stabilised)

Solubility in water 0 mg/l

Degradability: information not available

Zinc Powder (stabilised)

Solubility in water 0,1 - 100 mg/l

Degradability: information not available

Xylene (mixture of isomers)

## V400MET/ISA - SPRAYS - EFECTO METALES PRECIOSOS 400 ml ISAVAL

Solubility in water 146 - 208 mg/L @ 25 °C and pH 7 mg/l

Rapidly degradable

Butane

Solubility in water 0,1 - 100 mg/l

Rapidly degradable

Propane

Solubility in water 0,1 - 100 mg/l

Rapidly degradable

Isobutyl acetate

Solubility in water 1000 - 10000 mg/l

Rapidly degradable

Hydrocarbons, C6, isoalkanes

Rapidly degradable

Copper powder

Solubility in water < 0,1 mg/l

Degradability: information not available

Isobutane

Rapidly degradable

### 12.3. Bioaccumulative potential

Xylene (mixture of isomers)

Partition coefficient: n-octanol/water 3,12

BCF 25,9

Butane

Partition coefficient: n-octanol/water 1,09

Propane

Partition coefficient: n-octanol/water 1,09

Isobutyl acetate

Partition coefficient: n-octanol/water 2,3

BCF 15,3

### 12.4. Mobility in soil

Xylene (mixture of isomers)

Partition coefficient: soil/water 2,73

**V400MET/ISA - SPRAYS - EFECTO METALES PRECIOSOS 400 ml  
ISAVAL**

Hydrocarbons, C6, isoalkanes

Partition coefficient: soil/water 1,78

**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. 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.

Product residues are considered hazardous special waste. Do not dispose of in wastewater.

Empty cylinders, although completely emptied, should not be dispersed in the environment.

The overheated aerosol container at a temperature above 50 °C may burst even if it contains a small gas residue.

Waste transport may be subject to ADR.

Refer to applicable regulations.

European Waste Catalog (contaminated containers):

Aerosol as a household waste is excluded from the application of the above standard.

The exhausted commercial / industrial aerosol can be classified as: 15.01.10 \*: packaging containing residues of dangerous or contaminated substances.

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

ADR / RID, IMDG, 1950

IATA:

**14.2. UN proper shipping name**

ADR / RID: AEROSOLS

IMDG: AEROSOLS (Hydrocarbons, C6, isoalkanes)

IATA: AEROSOLS, FLAMMABLE

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

ADR / RID: Class: 2 Label: 2.1



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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: Environmentally Hazardous



IMDG: Marine Pollutant



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: --	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**

Seveso Category - Directive 2012/18/EC: P3a-E2

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

Product Point 40

**V400MET/ISA - SPRAYS - EFECTO METALES PRECIOSOS 400 ml  
ISAVAL**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 (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.

VOC (Directive 2004/42/EC) :

Special finishes.

**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:

<b>Flam. Gas 1A</b>	Flammable gas, category 1A
<b>Aerosol 1</b>	Aerosol, category 1
<b>Aerosol 3</b>	Aerosol, category 3
<b>Flam. Liq. 2</b>	Flammable liquid, category 2
<b>Flam. Liq. 3</b>	Flammable liquid, category 3
<b>Flam. Sol. 1</b>	Flammable solid, category 1
<b>Water-react. 2</b>	Substance or mixture which in contact with water emits flammable gas, category 2
<b>Press. Gas</b>	Pressurised gas
<b>Press. Gas (Liq.)</b>	Liquefied gas
<b>Acute Tox. 3</b>	Acute toxicity, category 3
<b>Acute Tox. 4</b>	Acute toxicity, category 4

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<b>Asp. Tox. 1</b>	Aspiration hazard, category 1
<b>Eye Irrit. 2</b>	Eye irritation, category 2
<b>Skin Irrit. 2</b>	Skin irritation, category 2
<b>STOT SE 3</b>	Specific target organ toxicity - single exposure, category 3
<b>Aquatic Acute 1</b>	Hazardous to the aquatic environment, acute toxicity, category 1
<b>Aquatic Chronic 1</b>	Hazardous to the aquatic environment, chronic toxicity, category 1
<b>Aquatic Chronic 2</b>	Hazardous to the aquatic environment, chronic toxicity, category 2
<b>Aquatic Chronic 4</b>	Hazardous to the aquatic environment, chronic toxicity, category 4
<b>H220</b>	Extremely flammable gas.
<b>H222</b>	Extremely flammable aerosol.
<b>H229</b>	Pressurised container: may burst if heated.
<b>H225</b>	Highly flammable liquid and vapour.
<b>H226</b>	Flammable liquid and vapour.
<b>H228</b>	Flammable solid.
<b>H261</b>	In contact with water releases flammable gases.
<b>H280</b>	Contains gas under pressure; may burst if heated.
<b>H331</b>	Toxic if inhaled.
<b>H302</b>	Harmful if swallowed.
<b>H312</b>	Harmful in contact with skin.
<b>H332</b>	Harmful if inhaled.
<b>H304</b>	May be fatal if swallowed and enters airways.
<b>H319</b>	Causes serious eye irritation.
<b>H315</b>	Causes skin irritation.
<b>H336</b>	May cause drowsiness or dizziness.
<b>H400</b>	Very toxic to aquatic life.
<b>H410</b>	Very toxic to aquatic life with long lasting effects.
<b>H411</b>	Toxic to aquatic life with long lasting effects.
<b>H413</b>	May cause long lasting harmful effects to aquatic life.
<b>EUH066</b>	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



**V400MET/ISA - SPRAYS - EFECTO METALES PRECIOSOS 400 ml  
ISAVAL**

- 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
  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.

**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:

01 / 02 / 03 / 08 / 09 / 10 / 11 / 12 / 15 / 16.