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

Product name **ZINC SPRAY**

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

Intended use **Zinc corrector.**

1.3. Details of the supplier of the safety data sheet

Name	**Bossong SpA**
Full address	**via E. Fermi, 51**
District and Country	**24050 Grassobbio (BG)** **Italia**
	Tel. 035-3846011
	Fax 035-3846012
e-mail address of the competent person responsible for the Safety Data Sheet	**tek@bossong.com**

1.4. Emergency telephone number

For urgent inquiries refer to **Ospedale NIGUARDA Milano tel. +39 0266101029**
http://www.centroantiveleni.org/

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2015/830.
Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

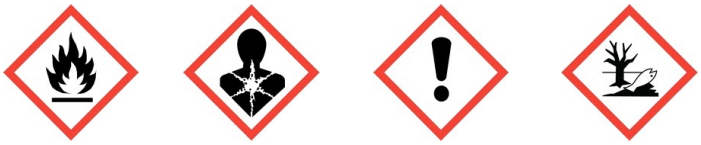
Hazard classification and indication:

Aerosol, category 1	H222	Extremely flammable aerosol.
	H229	Pressurised container: may burst if heated.
Specific target organ toxicity - repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.
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	H335	May cause respiratory 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:

H222	Extremely flammable aerosol.
H229	Pressurised container: may burst if heated.
H373	May cause damage to organs through prolonged or repeated exposure.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P251	Do not pierce or burn, even after use.
P410+P412	Protect from sunlight. Do no expose to temperatures exceeding 50°C / 122°F.
P211	Do not spray on an open flame or other ignition source.
P260	Do not breathe dust / fume / gas / mist / vapours / spray.
P273	Avoid release to the environment.

Contains: reaction mass of ethylbenzene and xylene
BUTANONE
CYCLOHEXANE
ETHYL ACETATE

2.3. Other hazards

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

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

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

reaction mass of ethylbenzene and xylene

CAS - | 25 ≤ x < 29 | Flam. Liq. 3 H226, Acute Tox. 4 H312, Acute Tox. 4 H332, Asp. Tox. 1 H304, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335

EC 905-588-0

INDEX -

Reg. no. 01-2119488216-32-XXXX

PROPANE

CAS 74-98-6 | 15 ≤ x < 17,5 | Flam. Gas 1A H220, Press. Gas (Liq.) H280, Classification note/notes according to Annex VI to the CLP Regulation: U

EC 200-827-9

INDEX 601-003-00-5

Reg. no. 01-2119486944-21

BUTANE

CAS 106-97-8 | 12,5 ≤ x < 14 | Flam. Gas 1A H220, Press. Gas (Liq.) H280, Classification note/notes according to Annex VI to the CLP Regulation: C U

EC 203-448-7

INDEX 601-004-00-0

Reg. no. 01-2119474691-32-XXXX

BUTANONE

CAS 78-93-3 | 8,5 ≤ x < 10 | Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, EUH066

EC 201-159-0

INDEX 606-002-00-3

Reg. no. 01-2119457290-43-XXXX

ISOBUTANE

CAS 75-28-5 | 5 ≤ x < 6,5 | Flam. Gas 1A H220, Press. Gas H280, Classification note/notes according to Annex VI to the CLP Regulation: C U

EC 200-857-2

INDEX 601-004-00-0

Reg. no. 01-2119485395-27-XXXX

CYCLOHEXANE

CAS 110-82-7 | 5 ≤ x < 6,5 | Flam. Liq. 2 H225, Asp. Tox. 1 H304, Skin Irrit. 2 H315, STOT SE 3 H336, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1

EC 203-806-2

INDEX 601-017-00-1

Reg. no. 012119463273-41-XXXX

ZINC POWDER - ZINC DUST

CAS 7440-66-6 | 4 ≤ x < 5 | Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1

EC 231-175-3

INDEX 030-001-01-9

Reg. no. 01-2119467174-37-XXXX

ETHYL ACETATE

CAS 141-78-6 | 3 ≤ x < 4 | Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, EUH066

EC 205-500-4

INDEX 607-022-00-5

Reg. no. 01-2119475103-46-XXXX

ALUMINIUM POWDER (STABILIZED)

CAS 7429-90-5 EC 231-072-3 INDEX 013-002-00-1 Reg. no. 01-2119529243-45-XXXX	2,5 ≤ x < 3	Flam. Sol. 1 H228, Water-react. 2 H261, Classification note/notes according to Annex VI to the CLP Regulation: T

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

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

Percentage of propellants: 36,00 %

SECTION 4. First aid measures

4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.
SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.
INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.
INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

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

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

Information not available

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
If overheated, aerosol cans can deform, explode and be propelled considerable distances. Put a protective helmet on before approaching the fire. Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site. Send away individuals who are not suitably equipped. Wear protective gloves / protective clothing / eye protection / face protection.

6.2. Environmental precautions

Do not disperse in the environment.

6.3. Methods and material for containment and cleaning up

Use inert absorbent material to soak up leaked product. Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

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

SECTION 7. Handling and storage

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:

CZE	Česká Republika	Nařízení vlády č. 246/2018 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	TRGS 900 - Seite 1 von 69 (Fassung 29.03.2019)- Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte
DNK	Danmark	Bekendtgørelse om grænseværdier for stoffer og materialer - BEK nr 1458 af 13/12/2019
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

GRC	Ελλάδα	ΕΦΗΜΕΡΙΔΑ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ - ΤΕΥΧΟΣ ΠΡΩΤΟ Αρ. Φύλλου 152 - 21 Αυγούστου 2018
HRV	Hrvatska	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 91/18)
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
NOR	Norge	Fastsatt av Arbeids- og sosialdepartementet 21. august 2018 med hjemmel i lov 17. juni 2005 nr. 62 om arbeidsmiljø, arbeidstid, stillingsvern mv. (arbeidsmiljøloven) § 1-3, § 1-4 og § 4-5
PRT	Portugal	Ministério da Economia e do Emprego Consolida as prescrições mínimas em matéria de protecção dos trabalhadores contra os riscos para a segurança e a saúde devido à exposição a agentes químicos no trabalho - Diário da República, 1.ª série - N.º 111 - 11 de junho de 2018
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.
	TLV-ACGIH	ACGIH 2020

reaction mass of ethylbenzene and xylene

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV-ACGIH		434	100	651	150	

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,327	mg/l
Normal value in marine water	0,327	mg/l
Normal value for fresh water sediment	12,46	mg/kg
Normal value for water, intermittent release	0,327	mg/l
Normal value of STP microorganisms	6,58	mg/l
Normal value for the terrestrial compartment	2,31	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				12,5 mg/kg/d				
Inhalation	260 mg/m3	65,3 mg/m3	260 mg/m3	65,3 mg/m3	442 mg/m3	221 mg/m3	442 mg/m3	221 mg/m3
Skin				125 mg/kg bw/d				212 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	
MAK	DEU	1800	1000	7200	4000	
TLV	DNK	1800	1000			
VLA	ESP		1000			
TLV	GRC	1800	1000			
TLV	NOR	900	500			
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		
TLV	DNK	1200	500				
VLA	ESP		1000				Gases
VLEP	FRA	1900	800				
TLV	GRC	2350	1000				
GVI/KGVI	HRV	1450	600	1810	750		
TLV	NOR	600	250				
NDS/NDSCh	POL	1900		3000			
WEL	GBR	1450	600	1810	750		
WEL	GBR		4			RESP	
TLV-ACGIH					1000		

BUTANONE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm		
TLV	CZE	600	200,4	900	300,6		
AGW	DEU	600	200	600	200	SKIN	
MAK	DEU	600	200	600	200	SKIN	
TLV	DNK	145	50			SKIN	E
VLA	ESP	600	200	900	300		
VLEP	FRA	600	200	900	300	SKIN	
TLV	GRC	600	200	900	300		
GVI/KGVI	HRV	600	200	900	300		
VLEP	ITA	600	200	900	300		
TLV	NOR	220	75				
VLE	PRT	600	200	900	300		
NDS/NDSCh	POL	450		900		SKIN	
WEL	GBR	600	200	899	300	SKIN	
OEL	EU	600	200	900	300		
TLV-ACGIH		590	200	885	300		

Predicted no-effect concentration - PNEC		
Normal value in fresh water	55,8	mg/l
Normal value in marine water	55,8	mg/l
Normal value for fresh water sediment	284,7	mg/kg
Normal value for marine water sediment	284,7	mg/kg
Normal value for water, intermittent release	55,8	mg/l
Normal value of STP microorganisms	709	mg/l
Normal value for the food chain (secondary poisoning)	1000	mg/kg
Normal value for the terrestrial compartment	22,5	mg/kg

Health - Derived no-effect level - DNEL / DMEL

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

ISOBUTANE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	2400	1000	9600	4000	

CYCLOHEXANE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	700	200,2	2000	572	
AGW	DEU	700	200	2800	800	
MAK	DEU	700	200	2800	800	
TLV	DNK	172	50			E
VLA	ESP	700	200			
VLEP	FRA	700	200	1300	375	11
TLV	GRC	700	200			
GVI/KGVI	HRV	700	200			SKIN
VLEP	ITA	350	100			
TLV	NOR	525	150			
VLE	PRT	700	200			
NDS/NDSCh	POL	300		1000		SKIN
WEL	GBR	350	100	1050	300	
OEL	EU	700	200			
TLV-ACGIH		344	100			

ZINC POWDER - ZINC DUST

Threshold Limit Value

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

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,0206	mg/l
Normal value in marine water	0,0061	mg/l
Normal value for fresh water sediment	118	mg/kg
Normal value for marine water sediment	56,5	mg/kg

Normal value of STP microorganisms	0,052	mg/l
Normal value for the terrestrial compartment	35,6	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral								50 mg/kg/d
Inhalation				2,5 mg/m3				5 mg/m3
Skin				5000 mg/kg/d				5000 mg/kg/d

ETHYL ACETATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	700	191,1	900	245,7	
AGW	DEU	730	200	1460	400	
MAK	DEU	750	200	1500	400	
TLV	DNK	540	150			E
VLA	ESP	734	200	1468	400	
VLEP	FRA	734	200	1468	400	
TLV	GRC	734	200	1468	400	
GVI/KGVI	HRV	734	200	1468	400	
TLV	NOR	734	200			
VLE	PRT	734	200	1468	400	
NDS/NDSCh	POL	734		1468		
WEL	GBR	734	200	1468	400	
OEL	EU	734	200	1468	400	
TLV-ACGIH		1441	400			

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,24	mg/l
Normal value in marine water	0,02	mg/l
Normal value for fresh water sediment	1,15	mg/kg/d
Normal value for marine water sediment	0,115	mg/kg/d
Normal value of STP microorganisms	650	mg/l
Normal value for the food chain (secondary poisoning)	200	mg/kg
Normal value for the terrestrial compartment	0,148	mg/kg/d

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				4,5 mg/kg bw/d				
Inhalation	734 mg/m3	734 mg/m3	367 mg/m3	367 mg/m3	1468 mg/m3	1468 mg/m3	734 mg/m3	734 mg/m3
Skin				37 mg/kg bw/d				63 mg/kg bw/d

ALUMINIUM POWDER (STABILIZED)

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
VLA	ESP	10				
VLEP	FRA	5				
TLV	GRC	10				
TLV	NOR	2				
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			

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				3,95 mg/kg bw/d				
Inhalation							3,72 mg/m3	3,72 mg/m3

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.

Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).

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	liquid
Colour	silver
Odour	characteristic
Odour threshold	Not available
pH	Not available
Melting point / freezing point	Not available
Initial boiling point	Not applicable
Boiling range	Not available
Flash point	Not applicable
Evaporation Rate	Not available
Flammability of solids and gases	Not available
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	0,78
Solubility	insoluble in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidising properties	Not available

9.2. Other information

VOC (Directive 2010/75/EC) : 77,86 % - 607,28 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.

BUTANONE

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

ZINC POWDER - ZINC DUST

Avoid contact with: water.

ETHYL ACETATE

Decomposes slowly into acetic acid and ethanol under the effect of light, air and water.

10.2. Chemical stability

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

ZINC POWDER - ZINC DUST

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.

BUTANONE

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

CYCLOHEXANE

May react violently with: strong oxidants,liquid nitric oxide.Forms explosive mixtures with: air.

ZINC POWDER - ZINC DUST

Develops flammable gas on contact with: water.

ZINC POWDER - ZINC DUST: risk of explosion on contact with: ammonium nitrate, ammonium sulphide, barium peroxide, lead nitride, chlorates, chromium trioxide, sodium hydroxide solutions, oxidising agents, performic acid, acids, tetrachloromethane, water. May react dangerously with alkali hydroxides, bromine pentafluoride, calcium chloride solution, fluorine, hexachloroethane, nitrobenzene, potassium dioxide, carbon disulphide, silver. Reacts with acids and strong alkalis developing hydrogen.

ETHYL ACETATE

Risk of explosion on contact with: alkaline metals,hydrides,oleum.May react violently with: fluorine,strong oxidising agents,chlorosulphuric acid,potassium tert-butoxide.Forms explosive mixtures with: air.

10.4. Conditions to avoid

Avoid overheating.

BUTANONE

Avoid exposure to: sources of heat.

ZINC POWDER - ZINC DUST

Avoid exposure to: heat,naked flames,electrostatic discharges,moisture.

ETHYL ACETATE

Avoid exposure to: light,sources of heat,naked flames.

10.5. Incompatible materials

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

BUTANONE

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

CYCLOHEXANE

Incompatible materials: natural rubbers,neoprene,polyvinyl chloride,polyethylene.

ZINC POWDER - ZINC DUST

Incompatible with: acids,oxidising agents.

ZINC POWDER - ZINC DUST: water, strong alkalis and acids.

ETHYL ACETATE

Incompatible with: acids,bases,strong oxidants,aluminium,nitrates,chlorosulphuric acid.Incompatible materials: plastic materials.

10.6. Hazardous decomposition products

ZINC POWDER - ZINC DUST

May develop: flammable gases.

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

CYCLOHEXANE

WORKERS: inhalation; contact with the skin.
POPULATION: ingestion of contaminated food or water; inhalation of ambient air; contact with the skin of products containing the substance.

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

CYCLOHEXANE

Irritating for the skin and mucous membranes, and may be absorbed by the skin; nerve damage can occur at high doses and is largely due to the cyclohexanone, its metabolite.

Interactive effects

CYCLOHEXANE

The substance may enhance the effects of agents such as tri-ortho-cresyl phosphate (TOCP).

ACUTE TOXICITY

ATE (Inhalation) of the mixture:
> 20 mg/l
ATE (Oral) of the mixture:
Not classified (no significant component)
ATE (Dermal) of the mixture:
>2000 mg/kg

ISOBUTANE

LC50 (Inhalation) 52000 ppm/2h (Rat)

ALUMINIUM POWDER (STABILIZED)

LD50 (Oral) 15900 mg/kg (Rat)

ZINC POWDER - ZINC DUST

LD50 (Oral) > 2000 mg/kg (Rat)

LC50 (Inhalation) > 5,4 mg/l/4h (Rat)

CYCLOHEXANE

LD50 (Oral) > 5000 mg/kg Rat

LD50 (Dermal) > 2000 mg/kg Rabbit

LC50 (Inhalation) > 2000 mg/l/4h Rat

BUTANONE

LD50 (Oral) > 2193 mg/kg Rat

LD50 (Dermal) > 5000 mg/kg Rabbit

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

ETHYL ACETATE

LD50 (Oral) 4934 mg/kg (Rat)

LD50 (Dermal) > 20000 mg/kg (Rabbit)

LC50 (Inhalation) > 22,5 mg/l/6h (Rat)

reaction mass of ethylbenzene and xylene

LD50 (Oral) > 3523 mg/kg (Rat)

LD50 (Dermal) > 2000 mg/kg (Rabbit)

LC50 (Inhalation) > 27,571 mg/l/4h (Rat)

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

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

May cause respiratory irritation
May cause drowsiness or dizziness

STOT - REPEATED EXPOSURE

May cause damage to organs

ASPIRATION HAZARD

Excluded because the aerosol does not allow the accumulation of a significant amount of product in the mouth

SECTION 12. Ecological information

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

ZINC POWDER - ZINC DUST	
LC50 - for Fish	0,238 mg/l/96h (Pimephales promelas)
EC50 - for Crustacea	0,356 mg/l/48h (Daphnia magna)
EC50 - for Algae / Aquatic Plants	0,106 mg/l/72h (Pseudokirchneriella subcapitata)
Chronic NOEC for Crustacea	0,0727 mg/l (Daphnia magna)
CYCLOHEXANE	
LC50 - for Fish	4,53 mg/l/96h Pimephales promelas
EC50 - for Crustacea	90 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	4,425 mg/l/72h Selenastrium capricornutum
EC10 for Algae / Aquatic Plants	925 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants	925 mg/l
BUTANONE	
LC50 - for Fish	2993 mg/l/96h (Pimephales Promelas)
EC50 - for Crustacea	308 mg/l/48h (Daphnia magna)
EC50 - for Algae / Aquatic Plants	2029 mg/l/72h (Pseudokirchneriella subcapitata)
ETHYL ACETATE	

LC50 - for Fish	230 mg/l/96h (Pimephales promelas)
EC50 - for Crustacea	165 mg/l/48h (Daphnia magna)
Chronic NOEC for Crustacea	2,4 mg/l (Daphnia pulex)
Chronic NOEC for Algae / Aquatic Plants	> 100 mg/l (Scenedesmus subspicatus)

reaction mass of ethylbenzene and xylene

LC50 - for Fish	2,6 mg/l/96h (Oncorhynchus mykiss)
EC50 - for Algae / Aquatic Plants	2,2 mg/l/72h (Chlorella vulgaris)
Chronic NOEC for Fish	> 1,39 mg/l (Oncorhynchus kisutch)
Chronic NOEC for Crustacea	0,74 mg/l (Ceriodaphnia dubia)

12.2. Persistence and degradability

ALUMINIUM POWDER (STABILIZED)

Solubility in water	0 mg/l

Degradability: information not available

ZINC POWDER - ZINC DUST

NOT rapidly degradable

BUTANE

Solubility in water	0,1 - 100 mg/l

Rapidly degradable

PROPANE

Solubility in water	0,1 - 100 mg/l

Rapidly degradable

CYCLOHEXANE

Solubility in water	0,1 - 100 mg/l

Rapidly degradable

BUTANONE

Solubility in water	> 10000 mg/l

Rapidly degradable

ETHYL ACETATE

Solubility in water	> 10000 mg/l

Rapidly degradable

reaction mass of ethylbenzene and xylene

Solubility in water	60 mg/l

Degradability: information not available

12.3. Bioaccumulative potential

BUTANE	
Partition coefficient: n-octanol/water	< 2,8
PROPANE	
Partition coefficient: n-octanol/water	1,09
CYCLOHEXANE	
Partition coefficient: n-octanol/water	3,44
BUTANONE	
Partition coefficient: n-octanol/water	0,3
ETHYL ACETATE	
Partition coefficient: n-octanol/water	0,68
BCF	30
reaction mass of ethylbenzene and xylene	
Partition coefficient: n-octanol/water	3,16 Log Kow
BCF	29 -

12.4. Mobility in soil

CYCLOHEXANE	
Partition coefficient: soil/water	2,89
reaction mass of ethylbenzene and xylene	
Partition coefficient: soil/water	2,73 mg/l

12.5. Results of PBT and vPvB assessment

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

12.6. 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.

SECTION 14. Transport information

14.1. UN number

ADR / RID, IMDG, IATA:	1950

14.2. UN proper shipping name

ADR / RID:	AEROSOLS
IMDG:	AEROSOLS (CYCLOHEXANE)
IATA:	AEROSOLS, FLAMMABLE

14.3. Transport hazard class(es)

ADR / RID:	Class: 2	Label: 2.1
IMDG:	Class: 2	Label: 2.1
IATA:	Class: 2	Label: 2.1

14.4. Packing group

ADR / RID, IMDG, IATA:	-

14.5. Environmental hazards

ADR / RID:	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	

IATA:	Cargo:	L 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	

Contained substance

Point	57	CYCLOHEXANE Reg. no.: 012119463273-41-XXXX

Substances in Candidate List (Art. 59 REACH)

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

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

15.2. Chemical safety assessment

A chemical safety assessment has been performed for the following contained substances

reaction mass of ethylbenzene and xylene

PROPANE

BUTANE

BUTANONE

ISOBUTANE

SECTION 16. Other information

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

Flam. Gas 1A	Flammable gas, category 1A
Aerosol 1	Aerosol, category 1
Aerosol 3	Aerosol, category 3
Flam. Liq. 2	Flammable liquid, category 2
Flam. Liq. 3	Flammable liquid, category 3
Flam. Sol. 1	Flammable solid, category 1
Water-react. 2	Substance or mixture which in contact with water emits flammable gas, category 2
Press. Gas (Liq.)	Liquefied gas
Press. Gas	Pressurised gas
Acute Tox. 4	Acute toxicity, category 4
Asp. Tox. 1	Aspiration hazard, category 1
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H229	Pressurised container: may burst if heated.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H228	Flammable solid.

H261	In contact with water releases flammable gases.
H280	Contains gas under pressure; may burst if heated.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H304	May be fatal if swallowed and enters airways.
H373	May cause damage to organs through prolonged or repeated exposure.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

LEGEND:
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY
1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
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
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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.