

## Safety Data Sheet

According to Annex II to REACH - Regulation 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 HI93731A-0  
Product name Zinc Reagent A

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

Intended use Determination of Zinc in Water Samples.

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

Name Hanna Instruments S.R.L.  
Full address str. Hanna Nr 1  
District and Country 457260 loc. Nusfalau (Salaj)  
Romania  
Tel. +40 260607700  
Fax +40 260607700

e-mail address of the competent person responsible for the Safety Data Sheet msds@hanna.ro

#### 1.4. Emergency telephone number

For urgent inquiries refer to Emergency Number - International: +1 7035273887 - UK, London: +44 8708200418 - CHEMTREC 24 hours/365 days

### SECTION 2. Hazards identification

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

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2020/878.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

##### Hazard classification and indication:

Reproductive toxicity, category 1B	H360FD	May damage fertility. May damage the unborn child.
Acute toxicity, category 2	H330	Fatal if inhaled.
Acute toxicity, category 3	H301	Toxic if swallowed.
Acute toxicity, category 3	H311	Toxic in contact with skin.
Specific target organ toxicity - repeated exposure, category 1	H372	Causes damage to organs through prolonged or repeated exposure.
Hazardous to the aquatic environment, acute toxicity, category 1	H400	Very toxic to aquatic life.
Hazardous to the aquatic environment, chronic toxicity, category 1	H410	Very 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:  
H360FD May damage fertility. May damage the unborn child.

SECTION 2. Hazards identification ... / >>

H330	Fatal if inhaled.
H301+H311	Toxic if swallowed or in contact with skin.
H372	Causes damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.
EUH032	Contact with acids liberates very toxic gas. Restricted to professional users.

Precautionary statements:

P201	Obtain special instructions before use.
P260	Do not breathe dust, fume, gas, mist, vapours, spray.
P280	Wear protective gloves / protective clothing / eye protection / face protection.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310	Immediately call a POISON CENTER or doctor.
P404	Store in a closed container.

Contains:	DIBORON TRIOXIDE POTASSIUM TETRABORATE POTASSIUM CYANIDE
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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)
POTASSIUM TETRABORATE		
INDEX	$50 \leq x < 100$	Repr. 2 H361d
EC	215-575-5	Repr. 2 H361d: $\geq 6,8\%$
CAS	12045-78-2	
DIBORON TRIOXIDE		
INDEX	$9 \leq x < 30$	Repr. 1B H360FD
EC	215-125-8	Repr. 1B H360FD: $\geq 3,1\%$
CAS	1303-86-2	
REACH Reg.	01-2119486655-24	
POTASSIUM CYANIDE		
INDEX	$2,5 \leq x < 5$	Met. Corr. 1 H290, Acute Tox. 1 H300, Acute Tox. 1 H310, Acute Tox. 1 H330, STOT RE 1 H372, Aquatic Acute 1 H400 M=10, Aquatic Chronic 1 H410 M=10, EUH032, Classification note according to Annex VI to the CLP
EC	205-792-3	Regulation: A LD50 Oral: 5 ppm/1h, LD50 Dermal: 14,3 ppm/1h, STA Inhalation mists/powders: 0,005 mg/l
CAS	151-50-8	
REACH Reg.	01-2119486407-29	

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

SECTION 4. First aid measures

4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 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.

## SECTION 4. First aid measures ... / >>

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

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

#### POTASSIUM CYANIDE

Irritant effects, respiratory paralysis, Shortness of breath, Dizziness, Unconsciousness, Nausea, Vomiting, cardiovascular disorders, death. The following applies to cyanogen compounds/ nitriles in general: utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration. Cardiovascular disorders, dyspnoea, unconsciousness.

#### DIBORON TRIOXIDE

Exanthem, Diarrhoea, Nausea, Vomiting, cardiovascular disorders, Headache, Convulsions, CNS disorders, paralysis symptoms.

### 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

Do not breathe combustion products. The product is combustible and, when the powder is released into the air in sufficient concentrations and in the presence of a source of ignition, it can create explosive mixtures with air. Fires may start or get worse by leakage of the solid product from the container, when it reaches high temperatures or through contact with sources of ignition.

#### POTASSIUM CYANIDE

Not combustible. Ambient fire may liberate hazardous vapours. Fire may cause evolution of: Hydrogen cyanide (hydrocyanic acid).

### 5.3. Advice for firefighters

#### GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

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

## SECTION 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

If there are no contraindications, spray powder with water to prevent the formation of dust.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. 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

Collect the leaked product and place it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.

Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. 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

Ensure that there is an adequate earthing system for the equipment and personnel. Avoid contact with eyes and skin. Do not breathe powders, vapours or mists. Do not eat, drink or smoke during use. Wash hands after use. Avoid leakage of the product into the environment.

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

Store only in the original container. Store in a ventilated and dry place, far away from sources of ignition. Keep containers well sealed. Keep the product in clearly labelled containers. Avoid overheating. Avoid violent blows. Keep containers away from any incompatible materials, see section 10 for details.

Storage class TRGS 510 (Germany): 6.1A

### 7.3. Specific end use(s)

Information not available

## SECTION 8. Exposure controls/personal protection

### 8.1. Control parameters

#### Regulatory References:

BEL	Belgique	Liste de valeurs limites d'exposition aux agents chimiques, livre VI du code du bien-être au travail
CHE	Suisse / Schweiz	Valeurs limites d'exposition aux postes de travail: VME/VLE (SUVA). Grenzwerte am Arbeitsplatz: MAK (SUVA)
DEU	Deutschland	Technischen Regeln für Gefahrstoffe (TRGS 900) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte. MAK- und BAT-Werte-Liste 2020, Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Mitteilung 56
ESP	España	Límites de exposición profesional para agentes químicos en España 2021
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
IRL	Éire	2020 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations (2001-2015) and the Safety, Health and Welfare at Work (Carcinogens) Regulations (2001-2019)
NLD	Nederland	Arbeidsomstandighedenregeling. Lijst van wettelijke grenswaarden op grond van de artikelen 4.3, eerste lid, en 4.16, eerste lid, van het Arbeidsomstandighedenbesluit
POL	Polska	Rozporządzenie ministra rozwoju, pracy i technologii z dnia 18 lutego 2021 r. Zmieniające rozporządzenie w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy
ROU	România	Hotărârea nr. 53/2021 pentru modificarea hotărârii guvernului nr. 1.218/2006, precum și pentru modificarea și completarea hotărârii guvernului nr. 1.093/2006
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)
EU	OEL EU	Directive (EU) 2022/431; 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 2021

SECTION 8. Exposure controls/personal protection ... / >>

POTASSIUM CYANIDE

Threshold Limit Value		TWA/8h		STEL/15min		Remarks / Observations
Type	Country	mg/m3	ppm	mg/m3	ppm	
MAK	CHE	5		5		INHAL
MAK	DEU	5		5		INHAL
MAK	DEU	5		5		SKIN
VLA	ESP			5		SKIN
TGG	NLD	2,4		24 (C)		SKIN
NDS/NDSch	POL			5 (C)		
WEL	GBR	5				
OEL	EU	1		5		SKIN as Cyanide
TLV-ACGIH				5 (C)	4,7 (C)	SKIN

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,001	mg/l
Normal value in marine water	0,0002	mg/l
Normal value for fresh water sediment	0,004	mg/kg/d
Normal value for marine water sediment	0,0008	mg/kg/d
Normal value for water, intermittent release	0,0032	mg/l
Normal value of STP microorganisms	0,05	mg/l
Normal value for the terrestrial compartment	0,007	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					VND	12,5 mg/m3	VND	0,94 mg/m3
Skin					VND	4,03 mg/kg bw/d	VND	0,14 mg/kg bw/d

DIBORON TRIOXIDE

Threshold Limit Value		TWA/8h		STEL/15min		Remarks / Observations
Type	Country	mg/m3	ppm	mg/m3	ppm	
VLEP	BEL	10				
VLA	ESP	10				
VLEP	FRA	10				
OELV	IRL	10		20		
TLV	ROU	10		15		
WEL	GBR	10		20		
TLV-ACGIH		10				

Predicted no-effect concentration - PNEC

Normal value in fresh water	2,9	mg/l
Normal value in marine water	2,9	mg/l
Normal value for water, intermittent release	13,7	mg/l
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	5,7	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			VND	2,34 mg/m3			VND	4,66 mg/m3
Skin			VND	110 mg/kg bw/d			VND	220 mg/kg bw/d

SECTION 8. Exposure controls/personal protection ... / >>

POTASSIUM TETRABORATE

Predicted no-effect concentration - PNEC								
Normal value in fresh water					2	mg/l		
Normal value in marine water					2	mg/l		
Normal value for water, intermittent release					13,7	mg/l		
Normal value of STP microorganisms					10	mg/l		
Normal value for the terrestrial compartment					5,4	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	VND	0,92 mg/kg bw/d	VND	0,92 mg/kg bw/d				
Inhalation	13,6 mg/m3	3,9 mg/m3	13,6 mg/m3	3,9 mg/m3	13,6 mg/m3	7,8 mg/m3	13,6 mg/m3	7,8 mg/m3
Skin			VND	186 mg/kg bw/d			VND	368 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 ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

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.

If the product may or must come into contact or react with acids, suitable technical and/or organisational measures should be taken to prevent the development of toxic and/or inflammable gases.

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

In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (see standard EN 374).

Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity reactions.

SKIN PROTECTION

Wear category III 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).

In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

RESPIRATORY PROTECTION

Use a type P filtering facemask, whose class (1, 2 or 3) and effective need, must be defined according to the outcome of risk assessment (see standard EN 149).

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

Properties	Value	Information
Appearance	solid powder	
Colour	red	
Odour	characteristic	
Melting point / freezing point	not available	
Initial boiling point	not applicable	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	not applicable	

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

Auto-ignition temperature	not available	Method:ASTM D1293-18 Concentration: 4.0 % Temperature: 25 °C
Decomposition temperature	not available	
pH	8.7 - 9.0	
Kinematic viscosity	not available	
Solubility	soluble in water	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	not available	
Relative vapour density	not available	
Particle characteristics	not available	

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

Total solids (250°C / 482°F)	100,00 %
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

The powders are potentially explosive when mixed with air.

**POTASSIUM CYANIDE**

Exothermic reaction with: Fluorine, magnesium. Risk of explosion with: chlorates, nitrites, nitrates, Strong oxidizing agents, permanganates, anhydrides, mercury(II) nitrate, nitrogen trichloride. A risk of explosion and/or of toxic gas formation exists with the following substances: Water, Acids, Hydrogen fluoride, Carbon dioxide (CO<sub>2</sub>).

**DIBORON TRIOXIDE**

Violent reactions possible with: Fluorine, Hydrogen fluoride, halogen-halogen compounds.

10.4. Conditions to avoid

Avoid environmental dust build-up.

10.5. Incompatible materials

**POTASSIUM CYANIDE**  
Aluminium, Zinc, Tin.

10.6. Hazardous decomposition products

Information not available

**SECTION 11. Toxicological information**

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

**POTASSIUM CYANIDE**

Acute inhalation toxicity, Acute toxicity estimate: 0.051 mg/l; dust/mist, Expert judgement, Symptoms: mucosal irritations, absorption  
 - Acute dermal toxicity, absorption - Eye irritation, rabbit, Result: Eye irritation.

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

**DIBORON TRIOXIDE**

CMR effects, Teratogenicity: May damage the unborn child - Reproductive toxicity: May damage fertility.

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

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

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation - mists / powders) of the mixture:	0,17 mg/l
ATE (Oral) of the mixture:	166,67 mg/kg
ATE (Dermal) of the mixture:	476,67 mg/kg

**POTASSIUM CYANIDE**

LD50 (Dermal):	14,3 mg/kg Rabbit
LD50 (Oral):	5 mg/kg Rat
LC50 (Inhalation mists/powders):	63 ppm/1h Rat
STA (Inhalation mists/powders):	0,005 mg/l estimate from table 3.1.2 of Annex I of the CLP (figure used for calculation of the acute toxicity estimate of the mixture)

**DIBORON TRIOXIDE**

LD50 (Dermal):	> 2000 mg/kg Rabbit
LD50 (Oral):	> 200 mg/kg Rat
LC50 (Inhalation mists/powders):	> 2,03 mg/l/4h Rat

**POTASSIUM TETRABORATE**

LD50 (Dermal):	> 2000 mg/kg Rat
LD50 (Oral):	3225 mg/kg Rat
LC50 (Inhalation mists/powders):	> 2,04 mg/l/4h Rat

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

May damage fertility - May damage the unborn child

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class



## SECTION 11. Toxicological information ... / >>

### STOT - REPEATED EXPOSURE

Causes damage to organs

### 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

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

#### 12.1. Toxicity

##### POTASSIUM CYANIDE

LC50 - for Fish	0,025 mg/l/96h
EC50 - for Crustacea	0,05 mg/l/48h Daphnia pulex
EC50 - for Algae / Aquatic Plants	0,05 mg/l/72h
Chronic NOEC for Fish	0,0011 mg/l Lepomis macrochirus

##### DIBORON TRIOXIDE

LC50 - for Fish	5600 mg/l/96h Gambusia affinis
Chronic NOEC for Fish	6,4 mg/l Danio rerio

##### POTASSIUM TETRABORATE

LC50 - for Fish	79,7 mg/l/96h Pimephales promelas
EC50 - for Crustacea	142 mg/l/48h Ceriodaphnia dubia
EC10 for Algae / Aquatic Plants	50 mg/l/72h Phaeodactylum tricornutum
Chronic NOEC for Fish	11,2 mg/l Pimephales promelas
Chronic NOEC for Crustacea	10 mg/l Daphnia magna

#### 12.2. Persistence and degradability

##### POTASSIUM CYANIDE

Solubility in water	> 10000 mg/l
Degradability: information not available	

##### DIBORON TRIOXIDE

Solubility in water	> 10000 mg/l
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##### POTASSIUM TETRABORATE

Solubility in water	1000 mg/l
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#### 12.3. Bioaccumulative potential

##### POTASSIUM CYANIDE

BCF	3,162
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#### 12.4. Mobility in soil

##### POTASSIUM CYANIDE

Partition coefficient: soil/water	0,3825
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#### 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

**SECTION 12. Ecological information**    ... / >>

**POTASSIUM CYANIDE**

Additional ecological information, Biological effects: Hazard for drinking water supplies. Forms toxic mixtures in water, dilution measures notwithstanding. Reacts with water to form toxic decomposition products. Discharge into the environment must be avoided.

**DIBORON TRIOXIDE**

Additional ecological information, Fertilising effect possible. Discharge into the environment must be avoided.

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. 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 or ID number

ADR / RID, IMDG, IATA:            1588

14.2. UN proper shipping name

ADR / RID:                    CYANIDES, INORGANIC, SOLID, N.O.S. MIXTURE

IMDG:                         CYANIDES, INORGANIC, SOLID, N.O.S. MIXTURE

IATA:                         CYANIDES, INORGANIC, SOLID, N.O.S. MIXTURE

14.3. Transport hazard class(es)

ADR / RID:                    Class: 6.1            Label: 6.1



IMDG:                         Class: 6.1            Label: 6.1



IATA:                         Class: 6.1            Label: 6.1



14.4. Packing group

ADR / RID, IMDG, IATA:            III

SECTION 14. Transport information ... / >>

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: 60 Limited Quantities: 5 kg Tunnel restriction code: (E)

Special provision: -

IMDG: EMS: F-A, S-A Limited Quantities: 5 kg

IATA: Cargo: Maximum quantity: 200 Kg

Pass.: Maximum quantity: 100 Kg

Special provision: A3, A13

Packaging instructions: 677  
Packaging instructions: 670

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: H2-E1

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

Contained substance	Point	30-75	DIBORON TRIOXIDE REACH Reg.: 01-2119486655-24

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors  
not applicable

Substances in Candidate List (Art. 59 REACH)

DIBORON TRIOXIDE  
REACH Reg.: 01-2119486655-24

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

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.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)

WGK 3: Severe hazard to waters

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:

Met. Corr. 1	Substance or mixture corrosive to metals, category 1
Repr. 1B	Reproductive toxicity, category 1B
Repr. 2	Reproductive toxicity, category 2
Acute Tox. 1	Acute toxicity, category 1
Acute Tox. 2	Acute toxicity, category 2
Acute Tox. 3	Acute toxicity, category 3
STOT RE 1	Specific target organ toxicity - repeated exposure, category 1
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
H290	May be corrosive to metals.
H360FD	May damage fertility. May damage the unborn child.
H361d	Suspected of damaging the unborn child.
H300	Fatal if swallowed.
H310	Fatal in contact with skin.
H330	Fatal if inhaled.
H301+H311	Toxic if swallowed or in contact with skin.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH032	Contact with acids liberates very toxic gas.

### 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)
- 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

SECTION 16. Other information ... / >>

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.

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 / 03 / 09 / 11 / 12 / 15 / 16.