



CHIMCOMPLEX SA BORZESTI - ROMANIA

Safety Data Sheet according to Annex of the European Regulation no. 878/2020 amending Regulation (EC) no. 830/2015 and Annex II to Regulation (EC) no. 1907/2006 of European Parliament and the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)

SAFETY DATA SHEET IRON TRICHLORIDE min. 40%

SECTION 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND THE COMPANY / UNDERTAKING

1.1 Product identifier

Product chemical name:	IRON TRICHLORIDE
EC number:	231-729-4
CAS number:	7705-08-0
INDEX number:	-
IUPAC name:	iron trichloride
Molecular formula:	FeCl ₃
Synonym:	iron chloride (III)
Molecular weight:	162.5
Type of product:	mono-constituent substance
REACH registration number:	01-2119497998-05-0014

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

The main uses: in the treatment of raw water in the supply of either potable water or industrial process water; in the treatment of wastewater and in sludge treatment at wastewater treatment plants (WWTPs); in biogas treatment at waste treatment plant; in manufacture of pigments and other iron compounds, also including use as a catalyst; as a metal pickling and surface treatment agent; in land remediation applications; as a laboratory chemical; in agrochemicals; in adhesives, sealants and coatings.

Tabel 1. Identified uses

Identified use/ UI number	Sector of end use (SU)	Product category (PC)	Process category (PROC)	Environmental release category (ERC)	Article category (AC)	Exposure scenario
1	SU 0, 8, 9, 10, 13, 14, 15, 16, 19, 24	Not applicable	PROC 1-5, 8a, 8b, 9, 14, 15, 22, 26	ERC 1, 2, 4, 5, 6a, 6b, 8f, 10a	4, 7, 8, 11, 13	ES 1- Manufacturing and industrial applications – solid product
2	SU 0, 8, 9, 10, 13, 14, 15, 16, 19, 24	Not applicable	PROC 1-5, 8a, 8b, 9, 14, 15, 22, 26	ERC 1, 2, 4, 5, 6a, 6b, 8f, 10a	4, 7, 8, 11, 13	ES 2- Manufacturing and industrial applications – solid product
3	SU 0, 8, 9, 10, 13, 14, 15, 16, 19, 24	Not applicable	PROC 1-5, 8a, 8b, 9, 14, 15, 22, 26	ERC 1, 2, 4, 5, 6a, 6b, 8f, 10a	4, 7, 8, 11, 13	ES 3- Manufacturing and industrial applications – solid product
4	SU 0, 8, 9, 10, 13, 14, 15, 16, 19, 24	Not applicable	PROC 1-5, 7, 8a, 8b, 9, 10, 12, 13, 15	ERC 1, 2, 4, 5, 6a, 6b, 8f, 10a	4, 7, 8, 11, 13	ES 4- Manufacturing and industrial applications - Iron salts –liquid form
5	SU 1, 10, 13, 19, 24	Not applicable	PROC 1-5, 8a, 8b, 9, 14, 15, 22, 26	ERC 2, 8a, 8c, 8d, 8e, 8f, 10a	4, 7, 8, 11, 13	ES 5- Professional application -solid product
6	SU 1, 10, 13, 19, 24	Not applicable	PROC 1-5, 8a, 8b, 9, 15, 26	ERC 2, 8a, 8c, 8d, 8e, 8f, 10a	4, 7, 8, 11, 13	ES 6- Professional application -solid product
7	SU 1, 13, 19, 24	Not applicable	PROC 1, 2, 5, 8a, 8b, 9, 10, 15, 26	ERC 8a, 8c, 8d, 8e, 8f, 10a	4, 7, 8, 11, 13	ES 7- Professional application -solid product
8	SU 1, 13, 19, 24	Not applicable	PROC 1, 2, 5, 8a, 8b, 9, 10, 11, 13, 15, 19	ERC 8a, 8c, 8d, 8e, 8f, 10a	4, 7, 8, 11, 13	ES 8- Professional application -liquid product
9	Not applicable	SU 1, 9b, 12, 14, 27	Not applicable	ERC 8a, 8c, 8d, 8f, 10a	4, 7, 8, 11, 13	ES 9- Consumers applications – solid product
10	Not applicable	SU 1, 9b, 12, 14, 27	Not applicable	ERC 8a, 8c, 8d, 8f, 10a	4, 7, 8, 11, 13	ES 10 - Consumers applications – liquid product

Uses advised against: not identified

1.3 Details of the supplier of the safety data sheet

Name of the company:	CHIMCOMPLEX S.A. BORZESTI
Address:	3 Industriilor Street, 601124, Onesti, Bacau, ROMANIA
Telephone/Fax:	+40 234 302250; +40 234 302102
Email address:	office@chimcomplex.com
Email of the competent person responsible with SDS:	stefania.vieru@chimcomplex.com



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1.4. Emergency telephone number

Poison and Toxicological Information Center –Bucharest	+ 40 21 318 3606 (8:00 AM-15:00 PM)
Emergency Clinical Hospital, Floreasca Street no.8, District 1, Bucharest	phone: +4021 5992300, int. 291, email: spital@urgentafloreasca.ro
Emergency Children Hospital "Grigore Alexandrescu", Iancu de Hunedoara Street, no. 30-32, District 1, Bucharest	phone: 021 210 6282; 021 210 6183 email: contact@spitalulgrigorealexandrescu.ro
Targu Mures Emergency Hospital, Dr. G. Marinescu Street, no. 50, Tg. Mures City, Mures County	phone: +40 365 212111, +40 365 211292, 217235, email: secretariat@spitjudms.ro
Unique emergency phone	112

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS – Global Hazardous System Classification according to the European Regulation (EC) no. 1272/2008, as amended

Hazard class	Code of hazard class and hazard category	Hazard statement
Acute Toxicity	Acute Tox. 4	H 302 - Harmful if swallowed.
Skin Corrosion	Skin Irrit. 2	H 315 - Causes skin irritation.
Skin Sensitization	Skin Sens. 1	H 317 - May cause an allergic skin reaction.
Eye Damage	Eye Dam. 1	H 318 - Causes serious eye damage.
Metals Corrosive	Met. Corr. 1	H 290 - May be corrosive to metals.

Risk advice to the human and the environment

Irritant for mucous and breathing system. Causes skin irritation and eye damage. The product is not dangerous for the environment.

2.2 Labels elements

Labeling according to the European Regulation (EC) no. 1272/2008, as amended:

- Name on label: **IRON TRICHLORIDE min. 40%**
- Signal word: **DANGER**
- Hazard symbols



GHS 05- corrosive

Hazards statements:

H 302: Harmful if swallowed.

H 315: Causes skin irritation.

H 317: May cause an allergic skin reaction.

H 318: Causes serious eye damage.

H 290: May be corrosive to metals

Precautionary statements:

Prevention:

P 280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P 301+P 312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P 302+P 352: IF ON SKIN: Wash with plenty of soap and water.

P 305+P 351+P 338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.



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P 310: Immediately call a POISON CENTER or doctor/physician.

Storage:

P 501: Dispose of contents / container to an approved waste disposal plant.

2.3 Other dangers

The product does not meet the criteria for classification as PBT (persistent, bioaccumulative and toxic) or vPvB (very persistent and very bioaccumulative).

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

The product is considered:	Substance
Chemical identity of substance:	Iron trichloride
Classification according to the (EC), Regulation no. 1272/2008:	Acute Tox. 4, H302; Skin Irrit. 2, H315; Skin Sens. 1, H317; Eye Dam. 1, H318; Met. Corr. 1, H290
EINECS no:	231-729-4
CAS no:	7705-08-0
INDEX no:	-
% Weight:	≥ 40
Generic name:	Inorganic halogenated salt
Impurities:	No impurities relevant for classification and labeling

3.2. Mixtures: not applicable

SECTION 4. FIRST AID MEASURES

4.1 Description of necessary first-aid measures

Irritant for mucous and breathing system. Causes skin irritation and eye damage.

It is mandatory to request medical assistance, in case of accidental contact with this product (if possible, show the product label). **Remove contaminated clothing.**

If inhaled

Evacuate the victim from the contaminated area to ventilated place. Administer oxygen or apply artificial respiration if necessary. Call a physician immediately.

In case of skin contact

Remove quickly contaminated clothing and shoes. Wash skin with plenty of water.

Call a physician or poison control centre. Wash the contaminated clothes before re-using.

In case of eye contact

Immediately flush eyes with plenty of water, for at least 15 minutes, while moving eye pupils in all directions.

Call a physician or poison control centre immediately.

If ingestion

Call a physician or poison control centre. Rinse mouth with plenty of water.

Administer oxygen or artificial respiration if necessary. Do not induce vomiting.

4.2 Most important symptoms and effects, acute and delayed

Inhalation

Causes irritation to eyes and respiratory system, causes, itching, coughing.

Skin contact

Causes skin irritations. May appear redness, swelling of tissue, rash and oedema.

Eye contact

Causes eye damage. Signs of irritation were observed in the cornea, iris and or conjunctiva.

Ingestion

If ingested, the substance may causes burns of the mouth, throat, esophagus and the stomach. Symptoms: sternum and gastric pains, nausea.

4.3 Indication of immediate medical attention and special treatment needed

Treatment

Remove/Take off immediately all contaminated clothing. Rinse skin/eyes with water/shower. Move out of dangerous area.



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SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing media:

- *recommended*: Water for extinguishing combustible, sand, portable powder extinguishers pressurized with nitrogen (their use will be adapted to the existing situation: storage conditions, product transport)
- *not recommended*: Foam, extinguishing powder, steam, inert gases, halons

5.2 Special exposure hazards arising from the substance

The substance is not flammable or explosive. The product is stable under normal handling and storage.

5.3 Recommendation for fire-fighters

Use breathing apparatus and individual protective clothing for interventions. For large fires (caused by packing ignition) use large quantities of water spray. Waste resulting from fire extinguishing must be treated as dangerous waste according to legislation in force.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personnel protection

Advice for non-emergency personnel:

Try to limit leaks of the product if possible. Keep away from incompatible products.

Advice for emergency personnel:

Keep unnecessary and unprotected personnel away from entering. Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal equipment. People performing clean-up work should wear adequate personal protective equipment and a self-contained breathing apparatus. Do not touch or walk through spill material. Use individual protection equipment and adequate gloves (see chapter 8).

6.2 Environmental protection measures

Do not release into the environment (running waters, lakes, sewages or soil).

Do not let product enter drains. In case of accidental release: dam up and absorb on an inert material.

Sewage treatment: No concern, activated sludge flocks are not very sensitive to iron trichloride.

Inform local authorities in case of accidental spillages.

6.3 Cleaning methods and materials used

Neutralized leakages with lime, calcium carbonate, soda ash. Soak up with absorbent material. Collect the product spilled in properly labeled containers. Keep closed containers for disposal.

6.4. Reference to other sections

Firefighting measures are described in chapter 5. Individual protection equipment is described in chapter 8. The disposal consideration is described in chapter 13.

SECTION 7. HANDLING AND STORAGE

Handling imposes caution measures specific for a corrosive product.

7.1 Precaution for safe handling

Protection measure

Provide water sources, eyewash stations, individual respiratory apparatus in the working area; provide local ventilation in confined spaces. Avoid direct contact with product. Use individual protection equipment and adequate gloves (see chapter 8). Avoid package degradation during handling.

Advice on general occupational hygiene

Avoid inhalation or ingestion and contact with skin and eyes. General occupational hygiene measures are required to ensure safe handling of the substance. These measures involve good personal and housekeeping practices, no drinking, eating and smoking at the workplace.

7.2. Condition for storage, including incompatibility

The product is stored in original packing or in anticorrosive protected tanks, within sealed closing conditions; the storage area must be proper ventilated conditions, humidity and weatherproof conditions, away from flammable, combustible and incompatible substances.



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In case of storing of product for long periods of time, at temperatures lower than -10°C it is possible to appear deposits of crystals. These can be dissolved by increasing the temperature at around 25°C; is recommended to stirring the solution if possible.

Provide adequate drainage so that in case of accidental spillages, disposal of the product can be made safely. Provide spaces for keeping and using the neutralizing substances, necessary in case of accidental leakages (alkaline substances). Maximum filling grade of packing is 94%.

7.3 Specific end uses

The identified uses are described in chapter 1.2.

For more information, please check the relevant exposure scenario, available in the annex of this safety data sheet.

Packaging materials used	Railway tank, anticorrosive protected; Road tanker, anticorrosive protected; Eco-bulk agreed by ADR; Other packing that provides quantitative and qualitative integrity of product
Recommended	Plastic: ABS, PVC, LDPE, PTFE, PP, PVC Elastomers: Vytom, Natural rubber Nonmetals: carbon graphite
Not recommended	Plastic: Acetal Metals: aluminum, brass, carbon steel, stainless steel

SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

8.1. Control parameters

National legislation and European legislation in force (Directive 2006/15/CE, concerning establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EEC) not state either occupational exposure limit values (ELV) or tolerable biological limit values for this substance.

DNELs –derived No-Effect levels for iron trichloride:

DNEL = 0.57 mg/kg body/ day (dermal exposure, acute and chronic effect)

DNEL = 2.0 mg/mc (inhalation exposure, acute and chronic effect)

PNECs –Predictible No-Effect Concentrations for iron trichloride

PNEC_{sediment} = 49.5 g Fe/kg dwt

PNEC_{sol} = 55 g/kg dwt

8.2 Exposure control

8.2.1. Appropriate engineering controls

Provide local and general ventilation systems in the working area and storage spaces. Provide water sources and eyewash station in the proximity of the working area.

8.2.2. Individual protection measures, such as personal protective equipment

Workers will be fully equipped with individual protective equipment. The type and material of which it is made protective equipment shall respect the national/european legal rules in force, on health and safety at work.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. In the case of hazardous fumes, wear self contained breathing apparatus

Hand protection

Protective gloves – chemical resistant

Suitable materials: polyvinyl chloride, rubber

Unsuitable material: not known

Eye protection

Wear protective goggles for all industrial operations. If risk of splashing, chemical proof goggles/face shield.

Skin and body protection

Waterproof suit, boots; Intervention at incident: complete chemical protection suit, boots



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Specific hygiene measures

After working with this product, change protection equipment and wash face and hands with plenty of water and soap. Ensure water sources and eyewash stations in the proximity of the working area. It is forbidden to smoke, eat, drink in the working areas.

8.2.3. Environmental Exposure Control

All ventilation systems should be filtered before discharge to atmosphere. Avoid any release to the environment. Contain the spillage. For detailed explanations of the risk management measures that adequately control exposure of the environment to the substance please check the relevant exposure scenario, available in the annex of this safety data sheet. Waters contaminated with this product will not be discarded in watercourses, on the ground or in sewage without previous neutralization.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	liquid
Color	brown-reddish
Odor	specific
pH	< 2
pKa	No data
Iron trichloride content	≥ 40 %
Boiling point	106-120°C
Melting / freezing point	- 12°C
Flash point	Not flammable
Evaporation rate	No data
Flammability	Not flammable
Vapor pressure at 20 °C	Very low
Vapor density	No data
Relative Density at 15°C	1.4175 g/cm ³
Bulk density	No data
Soluble	Water, acetic acid, ethyl ether, ethanol, acetone
Solubility in water at 20°C	High miscible with water
Partition coefficient (n-octanol/water)	Not applicable
Auto-ignition temperature	Not self ignition
Decomposition temperature	No data
Viscosity at 20°C	10mPa.s
Explosive properties	Not explosive
Oxidizing properties	Not oxidizing

9.2. Other information: -

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity: This product is stable under normal handling and storage conditions.

10.2 Chemical stability

Store and transport the product separate from incompatible substances. It is recommended not to store for a long time at temperatures higher than 30°C.

10.3 Possibility of hazardous reactions

The product reacts with metals and has a corrosive effect on them.

10.4 Condition to avoid: Store, keeps and transports the product away from moisture and weather conditions.

10.5 Materials to avoid

Cooper, metals (applicable for solid form of product), sodium hypochlorite, sodium hydroxide, sodium carbonate, calcium carbonate, sodium sulphide.



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10.6 Hazardous decomposition product

Ferric chloride does not decompose in such a way as to present a chlorine release hazard.

SECTION 11. TOXICOLOGICAL INFORMATION

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

11.1.1 Acute toxicity: oral, inhalation, dermal

Acute symptoms are characterized by vomiting, diarrhea, mild lethargy, upper abdominal pain, pallor, and hyperglycemia.

LC 50 / oral/ mouse = 1300 mg/kg body;

LD 50/ dermal/ rat > 2000 mg/kg body;

LC 50/ inhalation/ rat = No data.

11.1.2 Skin corrosion/irritation

The product is irritating/ corrosive to the skin.

11.1.3 Serious eye damage/eye irritation

Contact with iron trichloride causes irritation and inflammation to the eyes.

11.1.4 Respiratory or skin sensitization

This substance may cause respiratory irritation. Not sensitizing.

11.1.5 Mutagenicity

Iron trichloride is not considered to be genotoxic/ mutagenic.

11.1.6 Carcinogenicity

Not carcinogenic.

11.1.7 Toxicity for reproduction

No data available.

11.1.8 Repeat dose toxicity

No data available.

11.2 Information on other hazards

11.2.1. Endocrine disrupting properties

It has no side effects on the endocrine system.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity -Information on environmental effects:

Ferric ion, Fe(III), undergoes rapid reactions in water to form insoluble ferric hydroxide, Fe(OH)_3 , which in typical aquatic environmental conditions precipitates to sediments. Solutions of the ferrous ion, Fe(II), are unstable when exposed to air: the iron is oxidized to the ferric, Fe(III) ion. The tests were performed using solution $\text{FeCl}_3 \times 6\text{H}_2\text{O}$.

Acute toxicity tests for aquatic organisms -short term:

LC50 / 96h / fish (lepisomis macrochirus)= 20 mg/l (m.t)

EC50 / 48h / invertebrates (daphnia magna) = 9.6 mg/l (m.t)

EC50 / 3- 15 day / algae (anabaena dololum) = 20 mg/l (n.t)

Acute toxicity tests for aquatic organisms -long term:

LOEC50 / 33 days / fish (pimephales promelas)= 1 mg/l (m.t)

LOEC50 / 21 days / invertebrates (daphnia) = 5 mg/l (m.t)

LOEC50 / 14 days / algae (Spirodesa polyrrhiza) = 0.56 mg/l (m.t)

m.t = measured total Fe; n.t = nominal total Fe



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12.2 Persistence and degradability

Abiotic degradation

Ferrous and ferric ions can be treated together, because the ferrous ion is rapidly transformed to ferric ion under the conditions found at typical points of release. Ferric ions released into (or generated in) water will rapidly precipitate as highly insoluble oxides and hydroxides. These stable compounds are the forms in which iron is found naturally in the earth's crust.

12.3 Bioaccumulative potential

Biologically, iron is an essential trace element for organisms including micro-organisms, plants and animals. Iron plays an important role in biological processes; iron homeostasis is under strict control.

12.4 Mobility - Water/Soil/Sediments

Soil is the primary source of naturally occurring iron. It has its own surface geochemical cycle. Iron can be mobilized from soil or sediment to surface waters as colloidal ferric hydroxide, fine particulate matter and clay particles bound. Iron may be related to organic humus substances from soil, which can be soluble, colloidal or precipitates depending on the environmental factors.

12.5 Results of PBT and vPvB assessment

The product does not meet the criteria for classification as PBT, Persistent Bio-accumulative and Toxic or vPvB –very persistent, very bio-accumulative.

12.6. Endocrine disrupting properties

It has no side effects on the endocrine system.

12.7 Other adverse effects

Not applicable.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste disposal methods

Do not dispose of waste into sewer. It is recommended to dilute waste of product with water. Absorb the product with alkaline substances. All contaminated wastewater must be processed in a wastewater treatment plant.

Waste will be discarded in accordance with local regulations in force.

Waste Code is recommended according to the legislation in force: 06 03 16.

13.2 Contaminated packaging

Clean container with water. Recover wastewater for processing later.

Packaging that cannot ensure anymore the qualitative and quantitative integrity of the product are destroyed through specific measures in accordance with local regulations in force. The recommendation is to use dedicated containers to avoid treatments.

Contaminated packaging waste will not be used to store other products.

13.3 European Regulations applicable

EC Decision 955/2014 amending Decision 2000/532 / EC establishing a list of wastes under Directive 2008/98 / EC of the European Parliament and of the Council;

European Directive 94/62 / EC on packaging and packaging waste with subsequent amendments

SECTION 14. TRANSPORT INFORMATION

14.1 UN number, 14.2 UN proper shipping name, 14.3 transport hazard class(es), 14.4 packing group

International Transport Regulation ADR	
- UN no. /Hl no.	2582 / 80
- Class / classification code	8 / C1 – inorganic liquid, acid, corrosive, without subsidiary risk
- Product name	FERRIC CHLORIDE SOLUTION
- Packing group	III – substance with low degree of danger

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- Label	 8 –corrosive liquid
RID	
- UN /Hazard no.	2582/ 80
- Class / classification code	8 / C1 – inorganic liquid, acid, corrosive, without subsidiary risk
- Product name	FERRIC CHLORIDE SOLUTION
- Packing group	III – substance with low degree of danger
- Label	 8 –corrosive liquid
IMDG	
- UN no.	2582
- Class	8
- Packing group	III – substance with low degree of danger
- Label	-
- EMS	F-A S-B
- Proper shipping name	FERRIC CHLORIDE SOLUTION
- Subsidiary risk	No subsidiary risk
ICAO/IATA	no data

14.5 Environmental hazards

The product is not dangerous for the environment.

14.6 Special precaution for use

Users (customers, carriers) who will move in the area with the product will respect all the security measures available in an area with dangerous chemicals.

14.7 Transport in bulk according to IMO instruments: No data available

SECTION 15. REGULATORY INFORMATION
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

The product iron trichloride is not a SEVESO substance, not ozone depleting substance, not a persistent organic pollutant (POP); the product was not included in the SVHC list and no need to be authorized according to the REACH Regulation.

European legislation:

Regulation (EC) No. 1907/2006 of the European Parliament concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) as amended;

Regulation (EU) No. 878/2020 amending Annex II to Regulation (EC) No. 1907/2006 of European Parliament concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), Annex;

Regulation (EC) No. 1272/2008 of the European Parliament and of the Council on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

Council Regulation (EC) No 440/2008 on test methods pursuant to Regulation (EC) No 1907/2006 –REACH; Commission Regulation (EC) No 340/2008 on the fees and charges payable to European Chemicals

Agency pursuant to Regulation (EC) No.1907/2006 – REACH;

Council Directive 98/24/EC concerning the protection of the health and safety of workers from the risks related to chemical agents at work, as amended;

Directive 91/322/EEC - indicative limit values on establishing indicative limit values by implementing Council Directive 80/1107/EEC on the protection of workers from the risks related to exposure to chemical, physical and biological agents at work, as amended;



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Commission Directives 2000/39/EC, 2006/15/CE and 2009/161/UE establishing a first, second and third lists of indicative occupational exposure limit values, in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended; Council Directive 89/656/EEC on the minimum health and safety requirements for the use by workers of personal protective equipment at the workplace; European Directive 91/689/EEC on hazardous waste; European Directive 2010/75/CE on industrial emissions.

15.2 Chemical Safety Assessment

A chemical safety assessment was carried out as a part of the substance registration, according to the REACH Regulation.

SECTION 16. OTHER INFORMATION

16.1. Updates of safety data sheet

Compared with last revision from March 2021, the safety data sheet has been updated to the chapters: 1-16.

16.2 Full text of hazard and precautionary statements stated in Section 2:

H 302: Harmful if swallowed.

H 315: Causes skin irritation.

H 317: May cause an allergic skin reaction.

H 318: Causes serious eye damage.

H 290: May be corrosive to metals.

P 280: Wear protective gloves/protective clothing/eye protection/face protection.

P 301+ P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P 302+ P352: IF ON SKIN: Wash with plenty of soap and water.

P 305 + P351+ P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P 310: Immediately call a POISON CENTER or doctor/physician.

P 501: Dispose of contents / container to an approved waste disposal plant.

16.3 Legend to abbreviations

CSR: Chemical Safety Report;

PBT: Persistent, Bio-accumulative and Toxic;

vPvB: very persistent, very bio-accumulative;

VLE: National exposure limits values;

DNEL: Derived No-Effect levels;

PNEC: Predictable No-Effect Concentrations;

LD 50: Dose that causing 50% mortality in a group of test animals;

EC 50: Effective concentration causing 50% mortality in a group of test animals;

LC 50: Lethal concentration causing 50% mortality in a group of test animals;

LOEC 50: lowest observed effect concentration;

ADR: European Agreement concerning the International Carriage of Dangerous Goods by road;

RID: Agreement concerning the International Carriage of Dangerous Goods by rail;

IMDG: International Maritime Dangerous Goods Code;

ICAO/IATA: International Air Transport Association.

16.4 Literature references and sources for data

The Safety Data Sheet has been revised according to the Annex of European Regulation No. 878/2020-REACH. Information contained herein was obtained from the documents developed in the REACH registration process, from the technical literature and from our own experience. These characterize the product respecting the safety requirements, however without a guarantee of its properties.

It is the client's (final users/ downstream users) obligation to take all the necessary caution measures, so that the product can be safely used.

This safety data sheet is accompanied by an annex containing the exposure scenarios developed for the manufacture and uses identified for this product.