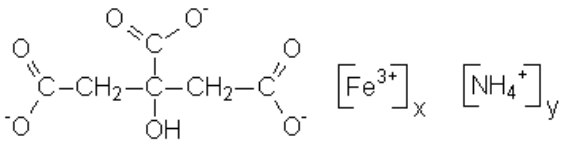
SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING.

1.1 Product identifier.

Product Name:	**CYANOTYPE KIT- PART B** **FERRIC AMMONIUM CITRATE 25%; Ammonium iron (III) citrate 25%**
Product Code:	ALQ0125
Product type:	Aqueous solution, mixture.
Chemical Name:	Ammonium iron (III) citrate
CAS No:	1185-57-5
EC No:	214-686-6
Registration No:	No registration number is available for this substance because the substance or its uses are exempted from registration, the annual tonnage does not require registration or the registration is scheduled for a later registration deadline.
Molecular weight:	265 g/mol
Molecular formula:	$C_6H_{11}FeNO_7$/ $C_6H_8O_7 \cdot xFe \cdot yH_3N$



1.2 Relevant identified uses of the substance or mixture and uses advised against.
Laboratory reagent, analytical use. Cyanotype process.

Uses advised against:
All uses not specified in this section or in section 7.3. Due to lack of experience or data, the supplier cannot approve other unspecified use.

1.3 Details of the supplier of the safety data sheet.

Company:	**ALQUERA CIENCIA SL**
Address:	C/ Vilar de Donas 9
City:	28050 - Madrid
Province:	Madrid (Spain)
Telephone:	0034 620 88 75 97
E-mail:	info@alquera.com
Web:	https://www.alquera.com

1.4 Emergency telephone number: 0034 620 88 75 97 (SDS) (Only available during office hours; Monday-Friday; 09:00-18:00)

SECTION 2: HAZARDS IDENTIFICATION.

2.1 Classification of the substance or mixture.
The product is not classified as hazardous within the meaning of Regulation (EC) No 1272/2008.

2.2 Label elements.
The product is not classified as dangerous according to Regulation (CE) No 1272/2008.

2.3 Other hazards.
The mixture does not contain substances with endocrine disrupting properties ≥0.1%.
The mixture does not meet the criteria to be considered PBT or vPvB according to Regulation (EC) No 1907/2006 (REACH), Annex XIII. Does not contain PBT or vPvB substances ≥0.1%.
PBT: Persistent Bioaccumulative and Toxic.
vPvB: very Persistent and very Bioaccumulative.

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

3.1 Substances.
Not applicable.

3.2 Mixtures.
Description: Aqueous solution.
Substances posing a danger to health or the environment in accordance with the Regulation (EC) No. 1272/2008, assigned a Community exposure limit in the workplace, and classified as PBT/vPvB or included in the Candidate List:

Identifiers	Name	Concentration	(*)Classification - Regulation (EC) No 1272/2008	
			Classification	Specifics concentration limits and Acute toxicity estimate
CAS No: 1185-57-5 EC No: 214-686-6	Ammonium iron(III) citrate	25 %	-	-

SECTION 4: FIRST AID MEASURES.

4.1 Description of first aid measures.
Due to the composition and type of the substances present in the product, no particular warnings are necessary.

Inhalation.
If breathing stops, seek emergency medical attention. Take the victim into open air; keep them warm and calm. If breathing is irregular or stops, perform artificial respiration.

Eye contact.
Remove contact lenses, if present and if it is easy to do. Wash eyes with plenty of clean and cool water for at least 20 minutes while pulling eyelids up and seek medical assistance.

Skin contact.
Remove contaminated clothing. Wash skin vigorously with water and soap or a suitable skin cleaner. NEVER use solvents or thinners.

Ingestion.
If accidentally ingested, seek immediate medical attention. Keep calm. NEVER induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed.
Ingestion: Nausea, vomiting.

4.3 Indication of any immediate medical attention and special treatment needed.
In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

SECTION 5: FIREFIGHTING MEASURES.

The product is NOT classified as flammable, in case of fire the following measures should be taken:

5.1 Extinguishing media.
Suitable extinguishing media:
Extinguisher powder or CO_2. In case of more serious fires, also alcohol-resistant foam and water spray.

Unsuitable extinguishing media:
Do not use a direct stream of water to extinguish. In the presence of electrical voltage, you cannot use water or foam as extinguishing media.

During a fire and depending on its magnitude, the following elements can be produced:
- Carbon dioxide (CO_2), carbon monoxide (CO), nitrogen oxides, metal oxides, nitrous gases (nitric oxides), iron oxides.

Carbon monoxide is very toxic by inhalation. Carbon dioxide, in sufficient concentrations, can behave as an asphyxiating gas.

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5.2 Special hazards arising from the substance or mixture.
Special risks.
Exposure to combustion or decomposition products can be harmful to your health.

5.3 Advice for firefighters.
Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account.

Fire protection equipment.
According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and boots. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...) in accordance with Directive 89/654/EC.

SECTION 6: ACCIDENTAL RELEASE MEASURES.

6.1 Personal precautions, protective equipment and emergency procedures.
For exposure control and individual protection measures, see section 8.
Avoid inhalation, ingestion, skin and eye contact.

6.2 Environmental precautions.
Product not classified as hazardous for the environment, avoid spillage as much as possible.

6.3 Methods and material for containment and cleaning up.
Contain and collect spillage with inert absorbent material (earth, sand, vermiculite, Kieselguhr...) and clean the area immediately with a suitable decontaminant.
Deposit waste in closed and suitable containers for disposal, in compliance with local and national regulations (see section 13).
Afterwards ventilate area and wash.

6.4 Reference to other sections.
For exposure control and individual protection measures, see section 8.
For later elimination of waste, follow the recommendations under section 13.

SECTION 7: HANDLING AND STORAGE.

7.1 Precautions for safe handling.
The product does not require special handling measures, the following general measures are recommended:
For personal protection, see section 8.
In the application area, smoking, eating, and drinking must be prohibited.
Follow legislation on occupational health and safety.
Never use pressure to empty the containers. They are not pressure-resistant containers. Keep the product in containers made of a material identical to the original.
Avoid inhalation, ingestion, skin and eye contact.

Recommendations to prevent toxicological risks:
After handling, wash hands with soap and water.

7.2 Conditions for safe storage, including any incompatibilities.
The product does not require special storage measures. As general storage measures, sources of heat, radiation, electricity and contact with food should be avoided.
Keep away from oxidizing agents and from highly acidic or alkaline materials.
Store the containers between 15 and 25 º C, in a dry and well-ventilated place.
Store according to local legislation. Observe indications on the label. Once the containers are open, they must be carefully closed and placed vertically to prevent spills.
Keep well closed and protected from light.

The product is not affected by Directive 2012/18/EU (SEVESO III).

7.3 Specific end use(s).
Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

8.1 Control parameters.
Professional Exposure Environmental Limit Values.
Water soluble iron salts: 1 mg/m^3 as Fe.

The product does NOT contain substances with Biological Limit Values.

Concentration levels DNEL/DMEL:

Name	DNEL/DMEL	Type	Value
Ammonium iron(III) citrate CAS No: 1185-57-5 EC No: 214-686-6	DNEL (Workers)	Inhalation, Chronic, Systemic effects	9,8 (mg/m³)
	DNEL (Consumers)	Inhalation, Chronic, Systemic effects	1,73 (mg/m³)
	DNEL (Workers)	Dermal, Chronic, Systemic effects	2,78 (mg/kg bw/day)
	DNEL (Consumers)	Dermal, Chronic, Systemic effects	993 (µg/kg bw/day)
	DNEL (Consumers)	Oral, Chronic, Systemic effects	993 (µg/kg bw/day)

DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.
DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.

Concentration levels PNEC:

Name	Details	Value
Ammonium iron(III) citrate CAS No: 1185-57-5 EC No: 214-686-6	aqua (freshwater)	100 (µg/L)
	aqua (marine water)	10 (µg/L)
	aqua freshwater (intermittent releases)	1 (mg/L)
	STP	59,1 (mg/L)
	sediment (freshwater)	481 (µg/kg sediment dw)
	sediment (marine water)	48,1 (µg/kg sediment dw)
	soil	37,5 (µg/kg soil dw)

PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.

8.2 Exposure controls.
Measures of a technical nature:
Provide adequate ventilation, which can be achieved by using good local exhaust-ventilation and a good general exhaust system. Individual protection measures, such as personal protective equipment As a preventative measure it is recommended to use basic Personal Protective Equipment, in accordance with Regulation (EU) 2016/425. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection,…) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

Respiratory protection
The use of protective equipment will be necessary in case of mist formation or in case of exceeding occupational exposure limits if they exist (see section 8.1). Wear respiratory protection in case of spray application/dust generation. Wear respiratory protection in case of prolonged exposure.

Specific protection for the hands
Replace the gloves at any sign of deterioration. Penetration time >480 min (permanent contact protection). The breakthrough time of the selected gloves should be in accordance with the intended period of use. Various factors (e.g. temperature) mean that in practice the breakthrough time of chemical-resistant protective gloves is significantly shorter than the EN374 standard. An increase in temperature due to hot substances, body heat, etc. and a weakening of the effective thickness due to expansion can lead to a significant shortening of the breakthrough time. For the selection of a specific type of glove for a given application, with a certain duration, should take into account (but not be limited to) relevant factors in the workplace, such as: other chemicals to

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be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential allergies to the glove material itself, etc.... Due to the wide variety of circumstances and possibilities, the instruction manual of the glove manufacturers should be taken into account. Gloves should be replaced immediately if signs of degradation are observed.

Additional emergency measures
Emergency shower: ANSI Z358-1, ISO 3864-1:2011, ISO 3864-4:2011
Eyewash stations: DIN 12 899, ISO 3864-1:2011, ISO 3864-4:2011

Recommendations to prevent toxicological risks:
Do not eat, drink or smoke during handling. After handling, wash hands with soap and water.

Advice on personal protection is valid for high levels of exposure.
Choose personal protection adapted to the risks of exposure.

Concentration:	**100 %**
Uses:	**Laboratory reagent, analytical use. Cyanotype process.**
Breathing protection: If the recommended technical measures are observed, no individual protection equipment is necessary.	
Hand protection:	
PPE:	Protective gloves.
Characteristics:	«CE» marking, category II.
CEN standards:	EN 374-1, En 374-2, EN 374-3, EN 420, EN 511.
Maintenance:	Keep in a dry place, away from any sources of heat, and avoid exposure to sunlight as much as possible. Do not make any changes to the gloves that may alter their resistance, or apply paints, solvents or adhesives.
Observations:	Gloves should be of the appropriate size and fit the user's hand well, not being too loose or too tight. Always use with clean, dry hands.

Material:	Nitrile	Breakthrough time (min.):	> 480	Material thickness (mm):	0.11

Eye protection: Use if splashing is likely to occur.If the product is handled correctly, no individual protection equipment is necessary.	
Skin protection:	
PPE:	Protective clothing.
Characteristics:	«CE» marking, category II. Protective clothing should not be too tight or loose in order not to obstruct the user's movements.
CEN standards:	EN 340, EN 463, EN 469, EN 943-1, EN 943-2.
Maintenance:	In order to guarantee uniform protection, follow the washing and maintenance instructions provided by the manufacturer.
Observations:	The protective clothing should offer a level of comfort in line with the level of protection provided in terms of the hazard against which it protects, bearing in mind environmental conditions, the user's level of activity and the expected time of use.
PPE:	Work footwear.
Characteristics:	«CE» marking, category II.
CEN standards:	EN ISO 13287, EN 20347, EN 20345.
Maintenance:	This product adapts to the first user's foot shape. That is why, as well as for hygienic reasons, it should not be used by other people.
Observations:	Work footwear for professional use includes protection elements aimed at protecting users against any injury resulting from an accident

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

9.1 Information on basic physical and chemical properties.
Appearance:
Physical state (20ºC): Liquid.
Colour: Green.
Odour: odourless.
Odour threshold: Not applicable (Not relevant for this type of product).

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Volatility:
Boiling point or initial boiling point and boiling range: 498 ºC(Ammonium iron(III) citrate ; EPI Suite MPVPBP V1.43; ECHA).
Vapour pressure: 0 mmHg/0 Pa.
Relative vapour density (air=1): N.A.
Evaporation rate: N.A.

Flammability:
Flammability: not readily flammable.
Lower explosion limit: N.A.
Upper explosion limit: N.A.
Flash point: Not applicable > 60 ºC (Column 2 of Annex VII, REACH).
Auto-ignition temperature: not self-flammable.

Product description:
Melting point: 116.5 ºC (Ammonium iron(III) citrate; The substance decomposes when heated).
Freezing point: N.A.
Decomposition temperature: > 116 ºC Ammonium iron(III) citrate; 189.62 ºC GESTIS (Ammonium iron(III) citrate; May decompose upon prolonged exposure to light).
pH: 6.93 (23.3 ºC) (1%); 6-8 (20 ºC , 100 g/l GESTIS). Ammonium iron(III) citrate.
Kinematic viscosity (40ºC): N.A.
Dynamic viscosity (20ºC): N.A.
Solubility: soluble in water.
Hydrosolubility: 580.8 g/L (25 ºC, Ammonium iron(III) citrate); 1200 g/L (20ºC, Ammonium iron(III) citrate). Green hydrated form is very soluble in water and practically insoluble in alcohol.
Liposolubility: N.A.
Partition coefficient n-octanol/water (log value): -0.737 at 25 °C , Ammonium iron(III) citrate- Bioaccumulation is not expected.
Absolute density: N.A.
Relative density: 1.8 (20ºC, Ammonium iron(III) citrate).

Particle characteristics:
N.A.This product does not contain nanoparticles.

N.A.= Not Available/Non- Applicable due to the nature of the product, not providing information property of its hazards

9.2 Other information:
Explosive properties: There are no chemical groups associated with explosive properties present, therefore, according to REACH, Annex VII, 7.11, column 2, the study is not necessary.

Oxidizing properties: non-oxidizing. Based on the chemical structure, the product is incapable of exothermically reacting with combustible materials. According to REACH, Annex VII, 7.13, column 2, the study does not need to be carried out.

Drop point: N.A.
Scintillation: N.A.
% Solids: 25 %

N.A.= Not Available/Non- Applicable due to the nature of the product, not providing information property of its hazards

The data corresponding to the product specifications can be found in the product technical data sheet. For further data on physical and chemical properties related to safety and environment, see sections 7 and 12.

SECTION 10: STABILITY AND REACTIVITY.

10.1 Reactivity.
The product does not present hazards by their reactivity under the recommended handling and storage conditions (see section 7).

10.2 Chemical stability.
Stable under the recommended handling and storage conditions (see section 7).
May decompose upon prolonged exposure to light.

Acidic salts, such as FERRIC AMMONIUM CITRATE, are generally soluble in water. The resulting solutions contain moderate concentrations of hydrogen ions and have pH's of less than 7.0. They react as acids to neutralize bases. These neutralizations generate heat, but less or far less than is generated by neutralization of inorganic acids, inorganic oxoacids, and carboxylic acid. They usually do not react as either oxidizing agents or reducing agents, but such behaviour is not impossible. Many of these compounds catalyse organic reactions.

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10.3 Possibility of hazardous reactions.
The product does not present possibility of hazardous reactions under the recommended handling and storage conditions (see section 7).

10.4 Conditions to avoid.
Avoid any improper handling.
Avoid light exposure.

10.5 Incompatible materials.
Keep away from oxidising agents and from highly alkaline or acidic materials in order to prevent exothermic reactions.

10.6 Hazardous decomposition products.
No decomposition if used for the intended uses.
- Carbon dioxide (CO_2), carbon monoxide (CO), nitrogen oxides, metal oxides, nitrous gases (nitric oxides), iron oxides.

SECTION 11: TOXICOLOGICAL INFORMATION.

Product classification has been carried out using the conventional calculation method of Regulation (EC) No 1272/2008(CLP)/ extrapolation with similar products.

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

Toxicological information.

a) acute toxicity;
Not conclusive data for classification.

Name	Acute toxicity			
	Type	Test	Kind	Value
Ammonium iron(III) citrate CAS No: 1185-57-5 EC No: 214-686-6	Oral	LD50	Rabbit	2800 mg/kg bw [1] [1] G. F. SOMERS. Br. Med. J. 2:201-203.,Aug. 9, 1947. 1947. RELATIVE ORAL TOXICITY OF SOME THERAPEUTIC IRON PREPARATIONS
	Dermal	LD50	Rabbit	> 8000 mg/kg [1] [1] U.S. National Library of Medicine. 2018. ChemIDplus Acute dermal toxicity (LD50) test in rabbits. National Technical Reports Library. 1980.
	Inhalation	LC50	.	- - [1] [1] the study does not need to be conducted because exposure of humans via inhalation is not likely taking into account the vapour pressure of the substance and/or the possibility of exposure to aerosols, particles or droplets of an inhalable size

b) skin corrosion/irritation;
Not conclusive data for classification.
Ammonium iron(III) citrate:
Skin corrosion or irritation,Skin - Rabbit
Result: Non-irritating to skin - 4 h
(OECD 404)
Remarks: (ECHA)

The skin and eye irritation potential of test chemical was observed in various studies. The results obtained from these studies indicate that the chemical is not likely to cause skin and eye irritation. Hence, the test chemical can be classified under the category "Not Classified" for skin and eye irritation as per CLP. (ECHA)

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c) serious eye damage/irritation;
Not conclusive data for classification.
Ammonium iron(III) citrate:
The skin and eye irritation potential of test chemical was observed in various studies. The results obtained from these studies indicate that the chemical is not likely to cause skin and eye irritation. Hence, the test chemical can be classified under the category "Not Classified" for skin and eye irritation as per CLP. (ECHA)

d) respiratory or skin sensitisation; Not conclusive data for classification.

e) germ cell mutagenicity; Not conclusive data for classification.

Germ cell mutagenicity (Ammonium iron(III) citrate):
Test Type: Ames test
Experimental System: S.typhimurium
Metabolic activation: with or without metabolic activation
Method: OECD 471
Result: negative
Remarks: (ECHA)

Test Type: In vitro chromosomal aberration test
Experimental System: Chinese Hamster Fibroblasts
Metabolic activation: no metabolic activation
Method: OECD 473
Result: negative
Remarks: (ECHA)

f) carcinogenicity;
Not conclusive data for classification.

g) reproductive toxicity;
Not conclusive data for classification.

h) STOT-single exposure;
Not conclusive data for classification.

i) STOT-repeated exposure;
Not conclusive data for classification.

j) aspiration hazard;
Not conclusive data for classification.

11.2 Information on other hazards.
Endocrine disrupting properties
The substance does not contain components with endocrine-disrupting properties with effects on human health.
according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Other information
Overdose of iron compounds may have corrosive effects on the gastrointestinal mucosa, followed by necrosis, perforation and constriction. Several hours may elapse before the onset of symptoms, which may include epigastric pain, diarrhea, vomiting, nausea and hematemesis. A few hours to a few days after apparent recovery, the subject may experience metabolic acidosis, convulsions and coma. Other complications may result in acute hepatic necrosis which may lead to death from hepatic coma.

SECTION 12: ECOLOGICAL INFORMATION.

Product classification has been carried out using the conventional calculation method of Regulation (EC) No 1272/2008(CLP)/ extrapolation with similar products.

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12.1 Toxicity.

Name	Ecotoxicity			
	Type	**Test**	**Kind**	**Value**
Ammonium iron(III) citrate CAS No: 1185-57-5 EC No: 214-686-6	Fish	LC50	Plecoglossus altivelis	123 mg/L (96 h) [1] [1] Nakai,T., T. Kanno, E.R. Cruz, and K. Muroga. Fish Pathology 22(4): 185-189. 1987. The Effects of Iron Compounds on the Virulence of Vibrio anguillarum in Japanese Eels and Ayu.
	Aquatic invertebrates	EC50 EC50	Daphnia magna Daphnia magna	275 mg/L (48 h) [1] 374.2 mg/L (48 h) [2] [1] Randall,T.L., and P.V. Knopp. Journal of the Water Pollution Control Federation, 52(8): 2117-2130. 1980. Detoxification of Specific Organic Substances by Wet Oxidation. [2] Randall,T.L., and P.V. Knopp. Journal of the Water Pollution Control Federation, 52 (8): 2117-2130. 1980. Detoxification of Specific Organic Substances by Wet Oxidation.
	Aquatic plants	EC50	Algae	>100 mg/L (72h) [1] [1] toxicity threshold of Scendesmus quadricauda (green algae) TTsc. read-across from supporting substance (structural analogue or surrogate) (ECHA)

12.2 Persistence and degradability.
Ammonium iron(III) citrate:
Biodegradability Biochemical Oxygen Demand - Exposure time 14 d
Result: 77 % - Readily biodegradable.
Remarks: (ECHA). The value is given by analogy with the following substances: citric acid.

12.3 Bioaccumulative potential.
Information about the bioaccumulation.

Name	Bioaccumulation			
	Log Pow	**BCF**	**NOECs**	**Level**
Ammonium iron(III) citrate CAS No: 1185-57-5 EC No: 214-686-6	-0.737 (<3)	-	-	Very low

12.4 Mobility in soil.
No information is available about the mobility in soil.
The product must not be allowed to go into sewers or waterways.
Prevent penetration into the ground.

12.5 Results of PBT and vPvB assessment.
Not PBT Substance (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative).

12.6 Endocrine disrupting properties.
This product doesn't contain components with environmental endocrine disrupting properties.

12.7 Other adverse effects.
The product is not affected by the Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer.
No information is available about other adverse effects for the environment.

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SECTION 13: DISPOSAL CONSIDERATIONS.

13.1 Waste treatment methods.
Do not dump into sewers or waterways. Waste and empty containers must be handled and eliminated according to current, local/national legislation.

Waste management (disposal and evaluation):
Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See section 6.2.

Regulations related to waste management:
In accordance with Annex II of Regulation (EC) No 1907/2006 (REACH) the community or state provisions related to waste management are stated Community legislation:
Follow the provisions of Directive 2008/98/EC, Decision 2014/955/UE, Directive (UE) 2018/851, Directive (UE) 2019/904 regarding waste management. EU-legislation: Regulation (EU) No. 1357/2014 and modifications.

It is not possible to assign a specific code, as it depends on the user's intended use.

SECTION 14: TRANSPORT INFORMATION.

Transportation is not dangerous. In case of road accident causing the product's spillage, proceed in accordance with point 6.

14.1 UN number or ID number.
Transportation is not dangerous.

14.2 UN proper shipping name.
Description:
ADR/RID: Not classified as hazardous for transport.
IMDG: Not classified as hazardous for transport.
ICAO/IATA: Not classified as hazardous for transport.

14.3 Transport hazard class(es).
Transportation is not dangerous.

14.4 Packing group.
Transportation is not dangerous.

14.5 Environmental hazards.
Transportation is not dangerous.
Transport by ship, FEm – Emergency sheets (F – Fire, S - Spills): Not applicable.

14.6 Special precautions for user.
Transportation is not dangerous.

14.7 Maritime transport in bulk according to IMO instruments.
Not classified as hazardous for transport.

SECTION 15: REGULATORY INFORMATION.

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

Volatile organic compound (VOC)
VOC content (p/p): 0 %
VOC content: 0 g/l

The product is not affected by Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products.
The product is not affected by the procedure established Regulation (EU) No 649/2012, concerning the export and import of dangerous chemicals.

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Kind of pollutant to water (Germany): nwg: Non-hazardous to water. (Autoclassified according to the AwSV Regulations)
Substances included in Annex XIV of REACH (authorisation list) and expiry date: Not listed.
SVHC substances candidate for inclusion in Annex XIV of Regulation (EC) No 1907/2006: Not listed.
This product does not contain substances restricted by the REACH regulation.

Special provisions for the protection of humans or the environment:
It is recommended to use the information compiled in this safety data sheet as input data in a risk assessment of the local circumstances to establish the necessary risk prevention measures for the handling, use, storage and disposal of the product.

15.2 Chemical safety assessment.
No Chemical Safety Assessment has been carried out for this product by the supplier.

SECTION 16: OTHER INFORMATION.

Legislation related to safety data sheets:
The Safety Data Sheet shall be supplied in an official language of the country where the product is placed on the market. This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) No 1907/2006 (COMMISSION REGULATION (EU) 2020/878).

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data/ calculation method 2.6.4.3
Health hazards	Calculation method
Environmental hazards	Calculation method

It is recommended that the product only be employed for the purposes advised.

Abbreviations and acronyms used:

AwSV:	Facility Regulations for handling substances that are hazardous for the water.
BCF:	Bioconcentration factor.
CEN:	European Committee for Standardization.
DMEL:	Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.
DNEL:	Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.
EC50:	Half maximal effective concentration.
PPE:	Personal protection equipment.
LC50:	Lethal concentration, 50%.
LD50:	Lethal dose, 50%.
NOEC:	No observed effect concentration.
PNEC:	Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.
WGK:	Water hazard classes.

Key literature references and sources for data:
http://eur-lex.europa.eu/homepage.html
http://echa.europa.eu/
Regulation (EU) 2020/878.
Regulation (EC) No 1907/2006.
Regulation (EC) No 1272/2008.
GESTIS SUBSTANCE DATABASE.
U.S. Coast Guard. 1999. Chemical Hazard Response Information System (CHRIS) - Hazardous Chemical Data. Commandant Instruction 16465.12C. Washington, D.C.: U.S. Government Printing Office.

The information given in this Safety Data Sheet has been drafted in accordance with COMMISSION REGULATION (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemical substances and mixtures (REACH).

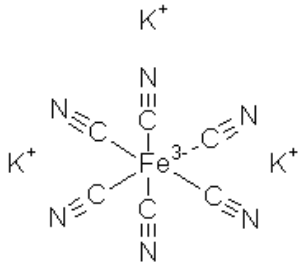
The information in this Safety Data Sheet on the Preparation is based on current knowledge and on current EC and national laws, as far as the working conditions of the users is beyond our knowledge and control. The product must not be used for purposes other than those that are specified without first having written instructions on how to handle. It is always the responsibility of the user to take the appropriate measures in order to comply with the requirements established by current legislation. The information contained in this Safety Sheet only states a description of the safety requirements for the preparation, and it must not be considered as a guarantee of its properties.

-End of safety data sheet.-

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

1.1 Product identifier.

Product Name:	**CYANOTYPE KIT- PART A** **POTASSIUM FERROCYANIDE RED 15%**
Product Code:	ALQ0125
Product type:	Aqueous solution, mixture.
Chemical Name:	tripotassium hexacyanoferrate; Red prussiate
CAS No:	13746-66-2
EC No:	237-323-3
Registration No:	01-2120787462-46-XXXX
Molecular weight:	329.26 g/mol
Molecular formula:	$K_3[Fe(CN)_6]$ / $C_6FeK_3N_6$



1.2 Relevant identified uses of the substance or mixture and uses advised against.
Laboratory reagent, analytical use. Cyanotype process.

Uses advised against:
All uses not specified in this section or in section 7.3. Due to lack of experience or data, the supplier cannot approve other unspecified use.

1.3 Details of the supplier of the safety data sheet.

Company:	**ALQUERA CIENCIA SL**
Address:	C/ Vilar de Donas 9
City:	28050 - Madrid
Province:	Madrid (Spain)
Telephone:	0034 620 88 75 97
E-mail:	info@alquera.com
Web:	https://www.alquera.com

1.4 Emergency telephone number: 0034 620 88 75 97 (SDS) (Only available during office hours; Monday-Friday; 09:00-18:00)

SECTION 2: HAZARDS IDENTIFICATION.

2.1 Classification of the substance or mixture.
In accordance with Regulation (EC) No 1272/2008:
Aquatic Chronic 3 : Harmful to aquatic life with long lasting effects.
Eye Irrit. 2 : Causes serious eye irritation.

2.2 Label elements.
Labelling in accordance with Regulation (EC) No 1272/2008:
Pictograms:

-Continued on next page.-

Signal Word:
Warning

Hazard statements:

H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements:

P264	Wash thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P501	Dispose of contents/container in accordance with current national/local regulations on hazardous waste.

EUH statements:

EUH032	Contact with acids liberates very toxic gas.

2.3 Other hazards.
The mixture does not contain substances with endocrine disrupting properties ≥0.1%.
The mixture does not meet the criteria to be considered PBT or vPvB according to Regulation (EC) No 1907/2006 (REACH), Annex XIII. Does not contain PBT or vPvB substances ≥0.1%.
PBT: Persistent Bioaccumulative and Toxic.
vPvB: very Persistent and very Bioaccumulative.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

3.1 Substances.
Not applicable.

3.2 Mixtures.
Description: Aqueous solution.
Substances posing a danger to health or the environment in accordance with the Regulation (EC) No. 1272/2008, assigned a Community exposure limit in the workplace, and classified as PBT/vPvB or included in the Candidate List:

Identifiers	Name	Concentration	(*)Classification - Regulation (EC) No 1272/2008	
			Classification	Specifics concentration limits and Acute toxicity estimate
CAS No: 13746-66-2 EC No: 237-323-3	tripotassium hexacyanoferrate	15 %	Aquatic Chronic 2, H411 - Eye Irrit. 2, H319	-

(*) *The complete text of the H phrases is given in section 16 of this Safety Data Sheet.*

SECTION 4: FIRST AID MEASURES.

4.1 Description of first aid measures.
In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

Inhalation.
Take the victim into open air; keep them warm and calm. If breathing is irregular or stops, perform artificial respiration.

Eye contact.
Remove contact lenses, if present and if it is easy to do. Wash eyes with plenty of clean and cool water for at least 20 minutes while pulling eyelids up and seek medical assistance.

Skin contact.
Remove contaminated clothing. Wash skin vigorously with water and soap or a suitable skin cleaner. NEVER use solvents or thinners.

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Ingestion.
If accidentally ingested, seek immediate medical attention. Keep calm. NEVER induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed.
Irritant Product, repeated or prolonged contact with skin or mucous membranes can cause redness, blisters or dermatitis, inhalation of spray mist or particles in suspension may cause irritation of the respiratory tract, some symptoms may not be immediate.

When exposed to liberated cyanide: mucosal irritations, neurotoxic effects and impairment of the cardiovascular functions.

Ingestion: Accidental intake of the red salt under industrial conditions is extremely improbable, absorption of a concentrated solution is more likely; irritation of the mucosae, probably vomiting, gastrointestinal complaints; the occurrence of absorptive effects should by all means be assumed.
Absorption (HCN-related): Vertigo, tinnitus, hyperpnoea, nausea, rosy skin colouration, clouded consciousness, spasms, collapse, coma, apnoea, cardiac arrest.

4.3 Indication of any immediate medical attention and special treatment needed.
In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious. Cover the affected area with a dry sterile bandage. Protect the affected area from pressure or friction.

Information for physicians:
As complex cyanide, is much less toxic than the alkaline cyanides.
On the other hand, HCN – which is capable of causing the most severe toxicities – is also released by weak acids. The severity of the effects is expected to depend particularly on the released hydrogen cyanide amount per time unit, which in turn depends on the functions of the substance dose and the reaction conditions.

SECTION 5: FIREFIGHTING MEASURES.

The product is NOT classified as flammable, in case of fire the following measures should be taken:

5.1 Extinguishing media.
Suitable extinguishing media:
Extinguisher powder or CO_2. In case of more serious fires, also alcohol-resistant foam and water spray.

Unsuitable extinguishing media:
Do not use a direct stream of water to extinguish. In the presence of electrical voltage, you cannot use water or foam as extinguishing media.

5.2 Special hazards arising from the substance or mixture.
Special risks.
Exposure to combustion or decomposition products can be harmful to your health.

In the case of inclusion in an ambient fire hazardous substances can be released:
Nitrous gases (nitric oxides)
Hydrogen cyanide vapours
Metal oxide fume
Wear self-contained breathing apparatus and special tightly sealed suit.

5.3 Advice for firefighters.
Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account. Prevent the products used to fight the fire from going into drains, sewers, or waterways. Product residues and extinguishing media may contaminate the aquatic environment.

Fire protection equipment.
According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and boots. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...) in accordance with Directive 89/654/EC.

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SECTION 6: ACCIDENTAL RELEASE MEASURES.

6.1 Personal precautions, protective equipment and emergency procedures.
For exposure control and individual protection measures, see section 8.
Avoid inhalation, ingestion, skin and eye contact.

6.2 Environmental precautions.
Product dangerous for the environment, in case of large spills or if the product contaminates lakes, rivers, or sewers, inform the responsible authorities according to local legislation. Prevent the contamination of drains, surface or subterranean waters, and the ground.

6.3 Methods and material for containment and cleaning up.
Contain and collect spillage with inert absorbent material (earth, sand, vermiculite, Kieselguhr...) and clean the area immediately with a suitable decontaminant.
Deposit waste in closed and suitable containers for disposal, in compliance with local and national regulations (see section 13).
Afterwards ventilate area and wash.

6.4 Reference to other sections.
For exposure control and individual protection measures, see section 8.
For later elimination of waste, follow the recommendations under section 13.

SECTION 7: HANDLING AND STORAGE.

7.1 Precautions for safe handling.
For personal protection, see section 8.
In the application area, smoking, eating, and drinking must be prohibited.
Follow legislation on occupational health and safety.
Never use pressure to empty the containers. They are not pressure-resistant containers. Keep the product in containers made of a material identical to the original.
Avoid inhalation, ingestion, skin and eye contact.

Recommendations to prevent toxicological risks:
After handling, wash hands with soap and water.

7.2 Conditions for safe storage, including any incompatibilities.
Store according to local legislation. Observe indications on the label. Store the containers between 15 and 25 º C, in a dry and well-ventilated place, far from sources of heat and direct solar light. Keep far away from ignition points. Keep away from oxidising agents and from highly acidic or alkaline materials. Do not smoke. Prevent the entry of non-authorised persons. Once the containers are open, they must be carefully closed and placed vertically to prevent spills.
Substance is sensitive to light, protect from exposure to light.
Storage class 10 - 13

Classification and threshold amount of storage in accordance with Annex I to Directive 2012/18/EU (SEVESO III): Not applicable.

7.3 Specific end use(s).
Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

8.1 Control parameters.
Professional Exposure Environmental Limit Values.
Water soluble iron salts: 1 mg/m^3 as Fe.

The product does NOT contain substances with Biological Limit Values.

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Concentration levels DNEL/DMEL:

Name	DNEL/DMEL	Type	Value
tripotassium hexacyanoferrate CAS No: 13746-66-2 EC No: 237-323-3	DNEL (Workers)	Dermal, Chronic, Systemic effects	9 (mg/kg)
	DNEL (Consumers)	Dermal, Chronic, Systemic effects	4,5 (mg/kg)
	DNEL (Consumers)	Oral, Chronic, Systemic effects	4,5 (mg/kg)

DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.
DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.

Concentration levels PNEC:

Name	Details	Value
tripotassium hexacyanoferrate CAS No: 13746-66-2 EC No: 237-323-3	Freshwater	1,7 (µg/L)
	Marine water	170 (ng/L)
	Sewage treatment plant (STP)	100 (mg/L)

PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.

8.2 Exposure controls.

Measures of a technical nature:
Provide adequate ventilation, which can be achieved by using good local exhaust-ventilation and a good general exhaust system. Individual protection measures, such as personal protective equipment As a preventative measure it is recommended to use basic Personal Protective Equipment, in accordance with Regulation (EU) 2016/425. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection,…) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

Respiratory protection
The use of protective equipment will be necessary in case of mist formation or in case of exceeding occupational exposure limits if they exist (see section 8.1). Wear respiratory protection in case of spray application/dust generation. Wear respiratory protection in case of prolonged exposure.

Specific protection for the hands
Replace the gloves at any sign of deterioration. Penetration time >480 min (permanent contact protection). The breakthrough time of the selected gloves should be in accordance with the intended period of use. Various factors (e.g. temperature) mean that in practice the breakthrough time of chemical-resistant protective gloves is significantly shorter than the EN374 standard. An increase in temperature due to hot substances, body heat, etc. and a weakening of the effective thickness due to expansion can lead to a significant shortening of the breakthrough time. For the selection of a specific type of glove for a given application, with a certain duration, should take into account (but not be limited to) relevant factors in the workplace, such as: other chemicals to be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential allergies to the glove material itself, etc.... Due to the wide variety of circumstances and possibilities, the instruction manual of the glove manufacturers should be taken into account. Gloves should be replaced immediately if signs of degradation are observed.

Additional emergency measures
Emergency shower: ANSI Z358-1, ISO 3864-1:2011, ISO 3864-4:2011
Eyewash stations: DIN 12 899, ISO 3864-1:2011, ISO 3864-4:2011

Recommendations to prevent toxicological risks:
Do not eat, drink or smoke during handling. After handling, wash hands with soap and water.

Advice on personal protection is valid for high levels of exposure.
Choose personal protection adapted to the risks of exposure.

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Concentration:	**100 %**
Uses:	Laboratory reagent, analytical use. Cyanotype process.

Breathing protection: If the recommended technical measures are observed, no individual protection equipment is necessary.

Hand protection:

PPE:	Protective gloves against chemicals.
Characteristics:	«CE» marking, category III.
CEN standards:	EN 374-1, En 374-2, EN 374-3, EN 420
Maintenance:	Keep in a dry place, away from any sources of heat, and avoid exposure to sunlight as much as possible. Do not make any changes to the gloves that may alter their resistance, or apply paints, solvents or adhesives.
Observations:	Gloves should be of the appropriate size and fit the user's hand well, not being too loose or too tight. Always use with clean, dry hands.

Material:	Latex	Breakthrough time (min.):	> 480	Material thickness (mm):	0,6
Material:	Nitrile	Breakthrough time (min.):	> 480	Material thickness (mm):	0,35
Material:	Butyl	Breakthrough time (min.):	> 480	Material thickness (mm):	0,45
Material:	PVC (polyvinyl chloride)	Breakthrough time (min.):	> 480	Material thickness (mm):	0,35

Eye protection: Use if splashing is likely to occur.If the product is handled correctly, no individual protection equipment is necessary.

PPE:	Protective goggles with built-in frame.
Characteristics:	«CE» marking, category II. Eye protector with built-in frame for protection against liquid, dust, smoke, fog and vapour.
CEN standards:	EN 165, EN 166, EN 167, EN 168
Maintenance:	Visibility through lenses should be ideal. Therefore, these parts should be cleaned daily. Protectors should be disinfected periodically following the manufacturer's instructions.
Observations:	Some signs of wear and tear include: yellow colouring of the lenses, superficial scratching of the lenses, scraping etc.

Skin protection:

PPE:	Protective clothing.
Characteristics:	«CE» marking, category II. Protective clothing should not be too tight or loose in order not to obstruct the user's movements.
CEN standards:	EN 340
Maintenance:	In order to guarantee uniform protection, follow the washing and maintenance instructions provided by the manufacturer.
Observations:	The protective clothing should offer a level of comfort in line with the level of protection provided in terms of the hazard against which it protects, bearing in mind environmental conditions, the user's level of activity and the expected time of use.

PPE:	Work footwear.
Characteristics:	«CE» marking, category II.
CEN standards:	EN ISO 13287, EN 20347
Maintenance:	This product adapts to the first user's foot shape. That is why, as well as for hygienic reasons, it should not be used by other people.
Observations:	Work footwear for professional use includes protection elements aimed at protecting users against any injury resulting from an accident

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

9.1 Information on basic physical and chemical properties.
Appearance:
Physical state (20ºC): Liquid.
Colour: red.
Odour: odourless.
Odour threshold: Not applicable (Not relevant for this type of product).

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Volatility:
Boiling point or initial boiling point and boiling range: ≥ 100 ºC., the substance decomposes.
Vapour pressure: 0 Pa 20ºC (tripotassium hexacyanoferrate).
Relative vapour density (air=1): N.A.
Evaporation rate: N.A.

Flammability:
Flammability: Not applicable. Inorganic substance.
Lower explosion limit: N.A.
Upper explosion limit: N.A.
Flash point: N.D. (> 60ºC).
Auto-ignition temperature: In a study performed according to EC440/2008 -A.16., potassium ferricyanide did not combust and decomposes when heated to 400 °C and therefore can be considered non-combustible and non-flammable.

Product description:
Melting point: the substance decomposes before a melting point is reached.
Freezing point: N.A.
Decomposition temperature: 300 ºC (tripotassium hexacyanoferrate).
pH: 6 (20ºC , 50 g/L tripotassium hexacyanoferrate); calculation/estimation: 6-9.
Kinematic viscosity (40ºC): N.A.
Dynamic viscosity (20ºC): N.A.
Solubility: soluble in water.
Hydrosolubility: 363 - 464 g/l 20ºC (tripotassium hexacyanoferrate, ECHA).
Liposolubility: Not available
Partition coefficient n-octanol/water (log value): Not applicable. Inorganic substance.
Absolute density: N.A.
Relative density: 1.0-1.1 (calculation/estimation).

Particle characteristics:
In a sieve test performed according to ASTM D1921 using a Retsch AS200 sieve shaker, the particle size of Potassium ferricyanide was determined to be ≥ 0.15 mm. Particle sizes were distributed as follows: 43.4% ≥0.6 mm, 36.9% ≥0.4 mm and 19.3% ≥0.2 mm. The particle size of the substance is high. Particles < 100 µm which have the potential to be inhaled, are not present (ECHA).

N.A.= Not Available/Non- Applicable due to the nature of the product, not providing information property of its hazards

9.2 Other information:
Explosive properties: There are no chemical groups associated with explosive properties present, therefore, according to REACH, Annex VII, 7.11, column 2, the study is not necessary.

Oxidizing properties: non-oxidizing. Based on the chemical structure, the product is incapable of exothermically reacting with combustible materials. According to REACH, Annex VII, 7.13, column 2, the study does not need to be carried out.

Drop point: N.A.
Scintillation: N.A.
% Solids: 15 %

N.A.= Not Available/Non- Applicable due to the nature of the product, not providing information property of its hazards

The data corresponding to the product specifications can be found in the product technical data sheet. For further data on physical and chemical properties related to safety and environment, see sections 7 and 12.

SECTION 10: STABILITY AND REACTIVITY.

10.1 Reactivity.
Contact with acids liberates very toxic gas.

10.2 Chemical stability.
Stable under the recommended handling and storage conditions (see section 7).
Non-combustible substance.
Freely soluble in water.
Slowly decomposes in aqueous solution when affected by light.
Potassium prussiates are stable penetration complexes. Hydrocyanic acid is only released in reaction with strong acids.

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10.3 Possibility of hazardous reactions.
The product does not present possibility of hazardous reactions under the recommended handling and storage conditions (see section 7).

Risk of explosion in contact with:
ammonia
chromium trioxide (heat)
sodium nitrite

The substance can react dangerously with:
fluorine
hydrogen chloride
copper nitrate
acids -> hydrogen cyanide

10.4 Conditions to avoid.
Avoid any improper handling.
Avoid exposure to sun light.

10.5 Incompatible materials.
Keep away from oxidising agents and from highly alkaline or acidic materials in order to prevent exothermic reactions.
Do not mix with nitrite and nitrate salts. Reacts violently with ammonia and chromic acid.

10.6 Hazardous decomposition products.
No decomposition if used for the intended uses.

Thermal decomposition: The aqueous solution slowly decomposes on exposure to light.
Decompositon products:
Hydrogen cyanide
potassium cyanide

In the case of inclusion in an ambient fire hazardous substances can be released:
Nitrous gases (nitric oxides)
Hydrogen cyanide vapours
Metal oxide fume
Wear self-contained breathing apparatus and special tightly sealed suit.

SECTION 11: TOXICOLOGICAL INFORMATION.

Product classification has been carried out using the conventional calculation method of Regulation (EC) No 1272/2008(CLP)/ extrapolation with similar products.

IRRITANT MIXTURE. Splashes in the eyes can cause irritation.

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

Iron compounds (general):
Inhalation of ferric salts as dusts and mists is irritating to the respiratory tract.
If inhaled, iron is a local irritant to the lung and gastrointestinal tract.

Toxicological information.
a) acute toxicity;
Not conclusive data for classification.

Name	Acute toxicity			
	Type	Test	Kind	Value
tripotassium hexacyanoferrate	Oral	LD50	Rat	> 5110 mg/kg
	Dermal	LD50	Rabbit	> 2000 mg/kg
CAS No: 13746-66-2 EC No: 237-323-3	Inhalation			

b) skin corrosion/irritation;
Not conclusive data for classification.

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c) serious eye damage/irritation;
Product classified:
Eye irritation, Category 2: Causes serious eye irritation. (EpiOcular™ Cornea Epithelial Model, ECHA)
Justification (table 3.3.3 CLP):
This mixture contains ≥ 10% substances classified as irritating to eyes (Eye irrit.2 H319). Contains >10% tripotassium hexacyanoferrate.

Information on the substance tripotassium hexacyanoferrate:
In a test on rabbit eyes (in accordance with OECD directive), K showed considerable eye-irritant effects (reddening of the conjunctiva, chemosis, lacrimation, irritation of the iris, corneal turbidity and injuries of the corneal epithelium with ingrowing of vessels). In-vitro tests in accordance with OECD directive (BCOP and RhCE) also yielded positive test results.

d) respiratory or skin sensitisation;
Not conclusive data for classification.

In an LLNA skin sensitisation study, performed according to OECD/EC test guidelines, sodium ferrocyanide was considered not to be a skin sensitiser, as the SI appeared not to be ≥ 3 when tested up to 50%. This result is read across to potasium ferricyanide.

e) germ cell mutagenicity;
Not conclusive data for classification.

f) carcinogenicity;
Not conclusive data for classification.

g) reproductive toxicity;
Not conclusive data for classification.

h) STOT-single exposure;
Not conclusive data for classification.

i) STOT-repeated exposure;
Not conclusive data for classification.

In a long term (two year) repeated dose toxicity study with rats, the NOAEL of sodium ferrocyanide was determined to be ≥ 630 and ≥ 450 mg/kg bw/day for females and males, respectively, based on the absence of effects seen at the highest concentration. This result is read across to potassium ferricyanide.

j) aspiration hazard;
Not conclusive data for classification.

11.2 Information on other hazards.
Endocrine disrupting properties
The substance does not contain components with endocrine-disrupting properties with effects on human health.
according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Other information
There is no information available on other adverse health effects.

SECTION 12: ECOLOGICAL INFORMATION.

Product classification has been carried out using the conventional calculation method of Regulation (EC) No 1272/2008(CLP)/ extrapolation with similar products.

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12.1 Toxicity.

Name	Ecotoxicity			
	Type	Test	Kind	Value
tripotassium hexacyanoferrate CAS No: 13746-66-2 EC No: 237-323-3	Fish	LC50	Fish	> 100 mg/l (96 h) [1] [1] Meyn, E.L., R.K. Zajdel, and R.V. Thurston 1984. Acute Toxicity of Ferrocyanide and Ferricyanide to Rainbow Trout (Salmo gairdneri). Tech.Rep.No.84-1, Fish.Bioassay Lab., Montana State Univ., Bozeman, MT :19 p.
	Aquatic invertebrates	LC50	Crustacean	549 mg/l (48 h) [1] [1] Dowden, B.F., and H.J. Bennett 1965. Toxicity of Selected Chemicals to Certain Animals. J.Water Pollut.Control Fed. 37(9):1308-1316
	Aquatic plants	ErC50 ErC10	Algae Algae	1.7 mg/L (72 h) [1] 0.67 mg/L (72 h) [2] [1] ECHA [2] ECHA

12.2 Persistence and degradability.
Hydrolisis:
In aqueous solution, the substance is completely dissociated into the potassium ion (K+) and the ferricyanide anion ((Fe(CN)6)3-). Hydrolysis of potassium ferricyanide is not expected to occur due to absence of hydrolysable groups in the molecule.
A ready biodegradation study does not need to be conducted since the substance is inorganic.

Inorganic salts with high aqueous solubility will exist in a dissociated form in an aqueous solution. Due to this the toxicokinetic assessment shows that the expected oral and/or dermal absorption in mammals is only limited namely estimated to be 10%, and the bioaccumulation potential is low. In a chronic mammalian toxicity study, it is shown that the substance does not have a significant adverse effect. Such a substance has a low potential for bioaccumulation.

As the anion will have a low potential for adsorption, a Koc value of 10 can be used according to a RIVM report (https://www.rivm.nl/bibliotheek/rapporten/601516013.pdf).

12.3 Bioaccumulative potential.
Information about the bioaccumulation.

Name	Bioaccumulation			
	Log Pow	BCF	NOECs	Level
tripotassium hexacyanoferrate CAS No: 13746-66-2 EC No: 237-323-3	Not applicable. Inorganic substance.	-	-	

12.4 Mobility in soil.
No information is available about the mobility in soil.
The product must not be allowed to go into sewers or waterways.
Prevent penetration into the ground.

12.5 Results of PBT and vPvB assessment.
Not PBT Substance (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative).

12.6 Endocrine disrupting properties.
This product does not contain components with environmental endocrine disrupting properties.

12.7 Other adverse effects.
The product is not affected by the Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer.
No information is available about other adverse effects for the environment.

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SECTION 13: DISPOSAL CONSIDERATIONS.

13.1 Waste treatment methods.
Do not dump into sewers or waterways. Waste and empty containers must be handled and eliminated according to current, local/national legislation.

Waste management (disposal and evaluation):
Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See section 6.2.

Regulations related to waste management:
In accordance with Annex II of Regulation (EC) No 1907/2006 (REACH) the community or state provisions related to waste management are stated Community legislation:
Follow the provisions of Directive 2008/98/EC, Decision 2014/955/UE, Directive (UE) 2018/851, Directive (UE) 2019/904 regarding waste management. EU-legislation: Regulation (EU) No. 1357/2014 and modifications.

It is not possible to assign a specific code, as it depends on the user's intended use.

SECTION 14: TRANSPORT INFORMATION.

Transportation is not dangerous. In case of road accident causing the product's spillage, proceed in accordance with point 6.

14.1 UN number or ID number.
Transportation is not dangerous.

14.2 UN proper shipping name.
Description:
ADR/RID: Not classified as hazardous for transport.
IMDG: Not classified as hazardous for transport.
ICAO/IATA: Not classified as hazardous for transport.

14.3 Transport hazard class(es).
Transportation is not dangerous.

14.4 Packing group.
Transportation is not dangerous.

14.5 Environmental hazards.
Transportation is not dangerous.
Transport by ship, FEm – Emergency sheets (F – Fire, S - Spills): Not applicable.

14.6 Special precautions for user.
Transportation is not dangerous.

14.7 Maritime transport in bulk according to IMO instruments.
Not classified as hazardous for transport.

SECTION 15: REGULATORY INFORMATION.

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

Volatile organic compound (VOC)
VOC content (p/p): 0 %
VOC content: 0 g/l

The product is not affected by Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products.
The product is not affected by the procedure established Regulation (EU) No 649/2012, concerning the export and import of dangerous chemicals.

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Kind of pollutant to water (Germany): WGK 2: Hazardous to water. (Autoclassified according to the AwSV Regulations).

Substances included in Annex XIV of REACH (authorisation list) and expiry date: Not listed.
SVHC substances candidate for inclusion in Annex XIV of Regulation (EC) No 1907/2006: Not listed.
This product does not contain substances restricted by the REACH regulation.

Special provisions for the protection of humans or the environment:
It is recommended to use the information compiled in this safety data sheet as input data in a risk assessment of the local circumstances to establish the necessary risk prevention measures for the handling, use, storage and disposal of the product.

15.2 Chemical safety assessment.
No Chemical Safety Assessment has been carried out for this substance by the supplier.

SECTION 16: OTHER INFORMATION.

Legislation related to safety data sheets:
The Safety Data Sheet shall be supplied in an official language of the country where the product is placed on the market. This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) No 1907/2006 (COMMISSION REGULATION (EU) 2020/878).

Complete text of the H phrases that appear in section 3:
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.
Classification codes:
Aquatic Chronic 2 : Chronic effect to the aquatic environment, Category 2
Aquatic Chronic 3 : Harmful to aquatic life with long lasting effects.
Eye Irrit. 2 : Eye irritation, Category 2

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data/ calculation method 2.6.4.3
Health hazards	Calculation method
Environmental hazards	Calculation method

It is advisable to carry out basic training with regard to health and safety at work in order to handle this product correctly.

Abbreviations and acronyms used:
ADR/RID: Agreement concerning the International Carriage of Dangerous Goods by Road.
AwSV: Facility Regulations for handling substances that are hazardous for the water.
BCF: Bioconcentration factor.
CEN: European Committee for Standardization.
DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.
DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.
EC50: Half maximal effective concentration.
PPE: Personal protection equipment.
IATA: International Air Transport Association.
ICAO: International Civil Aviation Organization.
IMDG: International Maritime Code for Dangerous Goods.
LC50: Lethal concentration, 50%.
LD50: Lethal dose, 50%.
NOEC: No observed effect concentration.
PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.
WGK: Water hazard classes.

Key literature references and sources for data:
http://eur-lex.europa.eu/homepage.html
http://echa.europa.eu/
Regulation (EU) 2020/878.
Regulation (EC) No 1907/2006.
Regulation (EC) No 1272/2008.
GESTIS SUBSTANCE DATABASE.

-Continued on next page.-

The information given in this Safety Data Sheet has been drafted in accordance with COMMISSION REGULATION (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemical substances and mixtures (REACH).

The information in this Safety Data Sheet on the Preparation is based on current knowledge and on current EC and national laws, as far as the working conditions of the users is beyond our knowledge and control. The product must not be used for purposes other than those that are specified without first having written instructions on how to handle. It is always the responsibility of the user to take the appropriate measures in order to comply with the requirements established by current legislation. The information contained in this Safety Sheet only states a description of the safety requirements for the preparation, and it must not be considered as a guarantee of its properties.

-End of safety data sheet.-