SAFETY DATA SHEET

Redox standard +250 mV

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name : Redox standard +250 mV

Other means of identification : Not available.

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

Product use : Laboratory chemicals.

1.3 Details of the supplier of the safety data sheet

Manufacturer
Metrohm AG
Ionenstrasse
9100 Herisau
Switzerland
Tel.: +41 (0)71 353 85 85
Fax: +41 (0)71 353 89 01
E-Mail: info@metrohm.com
Web: www.metrohm.com

Supplier
Metrohm Polska Sp. z o.o.
Centralna 27
05-816 Opacz-Kolonia
Poland

Tel.: +48 22 723 02 91
E-Mail: info@metrohm.pl

e-mail address of person responsible for this SDS : datasheet@metrohm.com

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : 112 (toll-free)

Supplier

Telephone number : + 49 (0)6132-84463 (24 h, GBK GmbH)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Not classified.

The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

SECTION 2: Hazards identification

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Supplemental label elements : EUH210 - Safety data sheet available on request.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Type
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)-	EC: 237-722-2 CAS: 14459-95-1	≤2.8	Aquatic Chronic 3, H412 EUH032	[1] [2]
tripotassium hexacyanoferrate	EC: 237-323-3 CAS: 13746-66-2	≤2.2	Eye Irrit. 2, H319 Aquatic Chronic 2, H411	[1] [2]
disodium hydrogenorthophosphate	EC: 231-448-7 CAS: 7558-79-4	≤3	Not classified.	[3]
potassium dihydrogenorthophosphate	EC: 231-913-4 CAS: 7778-77-0	≤1	Not classified.	[3]
sodium hydroxide	EC: 215-185-5 CAS: 1310-73-2 Index: 011-002-00-6	≤0.1	Skin Corr. 1A, H314 Eye Dam. 1, H318 **See Section 16 for the full text of the H statements declared above.**	[1] [2]

Product/ingredient name	Specific Conc. Limits, M-factors and ATEs
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate, (OC-6-11)-	-
tripotassium hexacyanoferrate	-
disodium hydrogenorthophosphate	-
potassium dihydrogenorthophosphate	-
sodium hydroxide	Skin Corr. 1A, H314: C ≥ 5% Skin Corr. 1B, H314: 2% ≤ C < 5% Skin Irrit. 2, H315: 0.5% ≤ C < 2% Eye Dam. 1, H318: C ≥ 2% Eye Irrit. 2, H319: 0.5% ≤ C < 2%

SECTION 3: Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Additional disclosure due to company policy

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam. Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst.

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SECTION 5: Firefighting measures

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
phosphorus oxides
metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contain and collect spillage with non-combustible, absorbent material e. g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

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SECTION 7: Handling and storage

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Section 7. Handling and storage: The information in this section contains generic advice and guidance.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)-	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024) [hydrogen cyanide and cyanides salts: hydrogen cyanide]** Absorbed through skin. CEIL: 5 mg/m³ (calculated as CN). Form: Inhalable fraction. TWA 8 hours: 1 mg/m³ (calculated as CN). Form: Inhalable fraction.
tripotassium hexacyanoferrate	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024) [hydrogen cyanide and cyanides salts: hydrogen cyanide]** Absorbed through skin. CEIL: 5 mg/m³ (calculated as CN). Form: Inhalable fraction. TWA 8 hours: 1 mg/m³ (calculated as CN). Form: Inhalable fraction.
sodium hydroxide	**Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286) (Poland, 7/2024)** TWA 8 hours: 0.5 mg/m³. STEL 15 minutes: 1 mg/m³.

Biological exposure indices

None known.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

SECTION 8: Exposure controls/personal protection

DNEL/DMEL Summary : Not applicable.

PNECs

PNEC Summary : Not applicable.

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Wear safety glasses with side protection in accordance with EN 166.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Recommended: Wear suitable gloves tested to EN374.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Recommended: Combination filtering device (EN 14387). Filter type: A (P2).

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid.

Colour : Yellow.

Odour : Odourless.

Odour threshold : Not applicable.

pH : 7

Melting point/freezing point : Not available.

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SECTION 9: Physical and chemical properties

Boiling point or initial boiling point and boiling range	:	Not available.
Flash point	:	Not available.
Flammability	:	Not available.
Lower and upper explosion limit	:	Not available.
Vapour pressure	:	Not available.
Relative vapour density	:	Not available.
Relative density	:	Not available.
Density	:	1.06473 g/cm³ [20°C]
Solubility in water	:	Not available.
Partition coefficient n-octanol/ water (log Pow)	:	Not applicable.
Auto-ignition temperature	:	Not available.
Decomposition temperature	:	Not available.
Viscosity	:	Dynamic (room temperature): Not available. Kinematic (room temperature): Not available. Kinematic (40°C): Not available.

Particle characteristics

Median particle size : Not applicable.

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Oxidising properties : Not available.

Explosive properties : Not available.

9.2.2 Other safety characteristics

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : Keep away from heat, sparks and flame.

10.5 Incompatible materials : No specific data.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity

SECTION 11: Toxicological information

Product/ingredient name	Result and Species	Dose [Exposure]	Remarks
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)-	Oral - Rat - LD50	3613 mg/kg	-
tripotassium hexacyanoferrate	Oral - Rat - LD50 [OECD 401]	>5110 mg/kg	-
	Dermal - Rat - Male, Female - LD50 [OECD 402]	>2000 mg/kg	-
disodium hydrogenorthophosphate	Oral - Rat - Female - LD50 [OECD 420]	>2000 mg/kg	-
	Dermal - Rat - Male, Female - LD50 [OECD 402]	>2000 mg/kg	-
	Inhalation - Rat - Male, Female - LC50 Dusts and mists [OECD 403]	>0.83 mg/l [4 hours]	Mortality: None.
potassium dihydrogenorthophosphate	Oral - Rat - Female - LD50 [OECD 420]	>2000 mg/kg	test substance: CAS no. 7758-11-4 (read-across)
	Dermal - Rabbit - Male, Female - LD50 [OECD 402]	>2000 mg/kg	-
	Inhalation - Rat - Male, Female - LC50 Vapour [OECD 403]	>0.83 mg/l [4 hours]	test substance: CAS no. 7558-80-7 (read-across)

Conclusion/Summary : Based on available data, the classification criteria are not met.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)-	3613	N/A	N/A	N/A	N/A

Irritation/Corrosion

Product/ingredient name	Result and Species	Exposure	Remarks
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)-	Skin - Rabbit - Not irritant - [OECD 404]	-	-
	Eyes - Rabbit - Mild irritant - [OECD 405]	-	-
tripotassium hexacyanoferrate	Skin - Human - Not irritant - [OECD 439]	-	-
	Eyes - Rabbit - Irritant - [OECD 405]	-	-
disodium hydrogenorthophosphate	Skin - Rabbit - Not irritant - [OECD 404]	Duration of treatment/ exposure: 24 hours	-
	Eyes - Rabbit - Not irritant - [OECD 405]	Duration of treatment/ exposure: 0.5 minutes	-

SECTION 11: Toxicological information

potassium dihydrogenorthophosphate	Skin - Rabbit - Not irritant - [Draize Test]	Duration of treatment/ exposure: 4 hours	-
	Eyes - Rabbit - Not irritant - [Draize Test]	Duration of treatment/ exposure: 0.5 minutes	-

Conclusion/Summary

Skin : Based on available data, the classification criteria are not met.

Eyes : Based on available data, the classification criteria are not met.

Respiratory : Not available.

Respiratory or skin sensitization

Product/ingredient name	Route of exposure and Species	Result	Remarks
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)-	Respiratory - Guinea pig	Not sensitizing	-
	skin - Guinea pig	Not sensitizing	-
tripotassium hexacyanoferrate	skin - Mouse [OECD 429]	Not sensitizing	-
disodium hydrogenorthophosphate	skin - Mouse [OECD 429]	Not sensitizing	-

Conclusion/Summary

Skin : Based on available data, the classification criteria are not met.

Respiratory : Based on available data, the classification criteria are not met.

Mutagenicity

Product/ingredient name	Result	Experiment	Remarks
tripotassium hexacyanoferrate	Negative [OECD 471]	Bacteria - Metabolic activation: with and without	Salmonella typhimurium
disodium hydrogenorthophosphate	Negative [OECD 487]	Mammalian-Human - Metabolic activation: with and without	-
	Negative	In vitro - Mouse - Metabolic activation: with and without	-
	Negative [OECD 473]	In vitro - Mammalian-Human - Metabolic activation: with and without	-
potassium dihydrogenorthophosphate	Negative [OECD 487]	In vitro - Mammalian-Human - Metabolic activation: with and without	Micronucleus-test
	Negative	In vitro - Mammalian-Animal - Metabolic activation: with and without	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

SECTION 11: Toxicological information

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

Conclusion/Summary [Human Health] : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

11.2.2 Other information

Not available.

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SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result [Exposure]	Species	Remarks
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)-	Acute - EC50 32 mg/l [48 hours]	Daphnia	-
tripotassium hexacyanoferrate	Acute - LC50 >100 mg/l - Static [96 hours] [OECD 203]	Fish - *Cyprinus carpio*	-
	Acute - EC50 59 mg/l - Static [48 hours] [OECD 202]	Daphnia - *Daphnia magna*	-
	Acute - EC50 3.1 mg/l - Static [72 hours] [OECD 201]	Algae - *Raphidocelis subcapitata*	-
	Acute - EC50 >1000 mg/l - Static [1000 years] [OECD 209]	Activated sludge	-
disodium hydrogenorthophosphate	Acute - LC50 >100 mg/l [96 hours] [OECD 203]	Fish - *Oncorhynchus mykiss*	-
	Acute - EC50 >100 mg/l - Static [48 hours] [OECD 202]	Daphnia - *Daphnia magna*	-
	Acute - EC50 >100 mg/l - Static [72 hours] [OECD 201]	Algae - *Desmodesmus subspicatus*	-
	Acute - EC50 >1000 mg/l - Static [3 hours] [OECD 209]	Activated sludge	-
potassium dihydrogenorthophosphate	Acute - LC50 >100 mg/l [96 hours] [OECD 203]	Fish - *Oncorhynchus mykiss*	-
	Acute - EC50 >100 mg/l - Static [48 hours] [OECD 202]	Daphnia - *Daphnia magna*	-
	Acute - EC50 >100 mg/l - Static [72 hours] [OECD 201]	Algae - *Desmodesmus subspicatus*	-
	Acute - EC50 >1000 mg/l - Static [3 hours] [OECD 209]	Activated sludge	-
sodium hydroxide	Acute - EC50 40.4 mg/l [48 hours]	Crustaceans - *Ceriodaphnia*	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Conclusion/Summary : There are no data available on the mixture itself.

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SECTION 12: Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)-	-	-	Not readily

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient

Not available.

Mobility : Not available.

Results of PMT and vPvM assessment

Product/ingredient name	PMT	P	M	T	vPvM	vP	vM
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)-	No	No	No	No	No	No	No
tripotassium hexacyanoferrate	No	No	No	No	No	No	No
disodium hydrogenorthophosphate	No	No	No	No	No	No	No
potassium dihydrogenorthophosphate	No	No	No	No	No	No	No
sodium hydroxide	No	No	No	No	No	No	No

Conclusion/Summary : The product does not meet the criteria to be considered as a PMT or vPvM.

12.5 Results of PBT and vPvB assessment

Regulation (EC) No. 1907/2006 [REACH]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)-	No	N/A	N/A	No	N/A	N/A	N/A
tripotassium hexacyanoferrate	No	No	No	No	No	No	No
disodium hydrogenorthophosphate	No	No	No	No	No	No	No
potassium dihydrogenorthophosphate	No	No	No	No	No	No	No
sodium hydroxide	No	No	No	No	No	No	No

Regulation (EC) No. 1272/2008 [CLP]

SECTION 12: Ecological information

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)-	No	No	No	No	No	No	No
tripotassium hexacyanoferrate	No	No	No	No	No	No	No
disodium hydrogenorthophosphate	No	No	No	No	No	No	No
potassium dihydrogenorthophosphate	No	No	No	No	No	No	No
sodium hydroxide	No	No	No	No	No	No	No

Conclusion/Summary Regulation (EC) No. 1272/2008 [CLP] : The product does not meet the criteria to be considered as a PBT or vPvB.

12.6 Endocrine disrupting properties

Not available.

Conclusion/Summary [Environment] : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance.

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EWC, specific to the industry and process.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Redox standard +250 mV

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
Label				
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	Marine Pollutant: No	No.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not intended.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

No listed substance

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Listed

Industrial emissions (integrated pollution prevention and control) - Water : Listed

Explosive precursors : Not applicable.

(EC) No 273/2004 on drug precursors

Not listed.

(EC) No 111/2005 Trade between the Union and third countries in drug precursors

Not listed.

Ozone depleting substances (EU 2024/590)

Not listed.

SECTION 15: Regulatory information

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

Poland

Regulation of the Minister of Health of 2 February 2011 on tests and measurements of factors harmful to health in the working environment (as amended).

Act of 25 February 2011 on chemical substances and their mixtures (with later amendments).

Act of 14 December 2012 on waste (as amended).

Regulation of the Minister of the Family, Labour and Social Policy of 12 June 2018 on the maximum permissible concentrations and intensities of harmful factors for health in the working environment (as amended).

Act of 13 June 2013 on the management of packaging and packaging waste (as amended).

Regulation of the Minister of Climate of 2 January 2020 on the waste catalogue (as amended).

There are no known additional national regulations relevant to the SDS.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

OECD Comprehensive Global PFAS Database

Not listed.

Inventory list

Australia	:	All components are listed or exempted.
Canada	:	All components are listed or exempted.
China	:	All components are listed or exempted.
Eurasian Economic Union	:	**Russian Federation inventory**: All components are listed or exempted.
Japan	:	**Japan inventory (CSCL):** All components are listed or exempted. **Japan inventory (ISHL):** All components are listed or exempted.
New Zealand	:	All components are listed or exempted.
Philippines	:	All components are listed or exempted.
Republic of Korea	:	All components are listed or exempted.
Taiwan	:	All components are listed or exempted.
Thailand	:	All components are listed or exempted.

Redox standard +250 mV

SECTION 15: Regulatory information

United States : All components are active or exempted.

Viet Nam : All components are listed or exempted.

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

This Safety Data Sheet is prepared in accordance with Annex II to Regulation (EC) No 1907/2006, as amended by Commission Regulation (EU) 2020/878.

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
EWC = European Waste Catalogue
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SGG = Segregation Group
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	

Full text of abbreviated H statements

H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH032	Contact with acids liberates very toxic gas.

Full text of classifications [CLP/GHS]

Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Skin Corr. 1A	SKIN CORROSION/IRRITATION - Category 1A

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Redox standard +250 mV

SECTION 16: Other information

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.