

# 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  
Schweiz  
Tel.: +41 (0)71 353 85 85  
Fax: +41 (0)71 353 89 01  
E-Mail: [info@metrohm.com](mailto:info@metrohm.com)  
Web: [www.metrohm.com](http://www.metrohm.com)

Supplier  
**Metrohm Hispania**  
Aguacate 15  
28044 Madrid  
Spain

Tel.: +34 915 08 65 86  
E-Mail: [sales@metrohm.es](mailto:sales@metrohm.es)

**e-mail address of person responsible for this SDS** : [datasheet@metrohm.com](mailto:datasheet@metrohm.com)

### 1.4 Emergency telephone number

#### National advisory body/Poison Centre

**Telephone number** : Servicio de Información Toxicológica:  
+34 91 562 04 20 (24h/365 días)

#### 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.

**SECTION 2: Hazards identification****Precautionary statements**

|                                                                                                                                           |                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| <b>Prevention</b>                                                                                                                         | : Not applicable.                                  |
| <b>Response</b>                                                                                                                           | : Not applicable.                                  |
| <b>Storage</b>                                                                                                                            | : Not applicable.                                  |
| <b>Disposal</b>                                                                                                                           | : Not applicable.                                  |
| <b>Supplemental label elements</b>                                                                                                        | : EUH210 - Safety data sheet available on request. |
| <b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</b> | : Not applicable.                                  |

**2.3 Other hazards**

|                                                                                                          |                                                                                         |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <b>Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII</b> | : This mixture does not contain any substances that are assessed to be a PBT or a vPvB. |
| <b>Other hazards which do not result in classification</b>                                               | : None known.                                                                           |

Product does not contain substances above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

**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<br>CAS: 14459-95-1                       | ≤2.8 | Aquatic Chronic 3, H412<br>EUH032                                                                                          | [1]     |
| tripotassium hexacyanoferrate                                         | EC: 237-323-3<br>CAS: 13746-66-2                       | ≤2.2 | Eye Irrit. 2, H319<br>Aquatic Chronic 2, H411                                                                              | [1] [2] |
| disodium hydrogenorthophosphate                                       | EC: 231-448-7<br>CAS: 7558-79-4                        | ≤3   | Not classified.                                                                                                            | [3]     |
| potassium dihydrogenorthophosphate                                    | EC: 231-913-4<br>CAS: 7778-77-0                        | ≤1   | Not classified.                                                                                                            | [3]     |
| sodium hydroxide                                                      | EC: 215-185-5<br>CAS: 1310-73-2<br>Index: 011-002-00-6 | ≤0.1 | Skin Corr. 1A, H314<br>Eye Dam. 1, H318<br><br><b>See Section 16 for the full text of the H statements declared above.</b> | [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                                     | -                                         |

**SECTION 3: Composition/information on ingredients**

|                  |                                                                                                                                                                                                         |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| sodium hydroxide | Skin Corr. 1A, H314: $C \geq 5\%$<br>Skin Corr. 1B, H314: $2\% \leq C < 5\%$<br>Skin Irrit. 2, H315: $0.5\% \leq C < 2\%$<br>Eye Dam. 1, H318: $C \geq 2\%$<br>Eye Irrit. 2, H319: $0.5\% \leq C < 2\%$ |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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**

|                                   |                                                                                                                                                                                                                                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>                | : 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.                                                                                                               |
| <b>Inhalation</b>                 | : 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. |
| <b>Skin contact</b>               | : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.                                                                                                                                                                    |
| <b>Ingestion</b>                  | : 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.                                            |
| <b>Protection of first-aiders</b> | : 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

|                     |                                                     |
|---------------------|-----------------------------------------------------|
| <b>Eye contact</b>  | : No known significant effects or critical hazards. |
| <b>Inhalation</b>   | : No known significant effects or critical hazards. |
| <b>Skin contact</b> | : No known significant effects or critical hazards. |
| <b>Ingestion</b>    | : No known significant effects or critical hazards. |

Over-exposure signs/symptoms

|                     |                     |
|---------------------|---------------------|
| <b>Eye contact</b>  | : No specific data. |
| <b>Inhalation</b>   | : No specific data. |
| <b>Skin contact</b> | : No specific data. |
| <b>Ingestion</b>    | : No specific data. |

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

|                            |                                                                                                                                                                       |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Notes to physician</b>  | : 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. |
| <b>Specific treatments</b> | : No specific treatment.                                                                                                                                              |

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, 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.

**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. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry 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. 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. Dispose of via a licensed waste disposal contractor.

### 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

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                                                                                                                               |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| tripotassium hexacyanoferrate | <b>National institute of occupational safety and health (Spain, 3/2023). [Soluble salts of iron]</b><br>TWA: 1 mg/m <sup>3</sup> , (as Fe) 8 hours. |
| sodium hydroxide              | <b>National institute of occupational safety and health (Spain, 3/2023).</b><br>STEL: 2 mg/m <sup>3</sup> 15 minutes.                               |

#### 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

- 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

**SECTION 8: Exposure controls/personal protection**

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hygiene measures</b>                | : 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.                                                                                                                                                                                                                                                                             |
| <b>Eye/face protection</b>             | : 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.                                                                                                                                                                                                                                                                           |
| <b><u>Skin protection</u></b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Hand protection</b>                 | : 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.<br><b>Recommended:</b> Wear suitable gloves tested to EN374. |
| <b>Body protection</b>                 | : 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Other skin protection</b>           | : 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.                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Respiratory protection</b>          | : 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.<br><b>Recommended:</b> Combination filtering device (EN 14387). Filter type: A (P2).                                                                                                                                                                                                                                                                                                   |
| <b>Environmental exposure controls</b> | : 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**

|                                                |                   |
|------------------------------------------------|-------------------|
| <b>Physical state</b>                          | : Liquid.         |
| <b>Colour</b>                                  | : Yellow.         |
| <b>Odour</b>                                   | : Odourless.      |
| <b>Odour threshold</b>                         | : Not applicable. |
| <b>pH</b>                                      | : 7               |
| <b>Melting point/freezing point</b>            | : Not available.  |
| <b>Initial boiling point and boiling range</b> | : Not available.  |
| <b>Flash point</b>                             | : Not available.  |
| <b>Flammability</b>                            | : Not available.  |
| <b>Lower and upper explosion limit</b>         | : Not available.  |
| <b>Vapour pressure</b>                         | : Not available.  |
| <b>Vapour density</b>                          | : Not available.  |
| <b>Relative density</b>                        | : Not available.  |

**SECTION 9: Physical and chemical properties**

|                                            |                                    |
|--------------------------------------------|------------------------------------|
| Density                                    | : 1.06473 g/cm <sup>3</sup> [20°C] |
| Solubility in water                        | : Not available.                   |
| Partition coefficient: n-octanol/<br>water | : Not applicable.                  |
| Auto-ignition temperature                  | : Not available.                   |
| Decomposition temperature                  | : Not available.                   |
| Viscosity                                  | : Not available.                   |

**Particle characteristics**

|                      |                   |
|----------------------|-------------------|
| Median particle size | : Not applicable. |
|----------------------|-------------------|

**9.2 Other information****9.2.1 Information with regard to physical hazard classes**

|                      |                  |
|----------------------|------------------|
| Explosive properties | : Not available. |
| Oxidising properties | : Not available. |

**9.2.2 Other safety characteristics**

Not available.

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**

| Product/ingredient name                                                | Result                                     | Species            | Dose        | Exposure | Remarks          |
|------------------------------------------------------------------------|--------------------------------------------|--------------------|-------------|----------|------------------|
| Ferrate(4-), hexakis (cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)- | LD50 Oral                                  | Rat                | 3613 mg/kg  | -        | -                |
| tripotassium hexacyanoferrate                                          | LD50 Dermal [OECD 402]                     | Rat - Male, Female | >2000 mg/kg | -        | -                |
|                                                                        | LD50 Oral [OECD 401]                       | Rat                | >5110 mg/kg | -        | -                |
| disodium hydrogenorthophosphate                                        | LC50 Inhalation Dusts and mists [OECD 403] | Rat - Male, Female | >0.83 mg/l  | 4 hours  | Mortality: None. |
|                                                                        | LD50 Dermal [OECD 402]                     | Rat - Male, Female | >2000 mg/kg | -        | -                |

**SECTION 11: Toxicological information**

|                                    |                                   |                       |             |         |                                                 |
|------------------------------------|-----------------------------------|-----------------------|-------------|---------|-------------------------------------------------|
| potassium dihydrogenorthophosphate | LD50 Oral [OECD 420]              | Rat - Female          | >2000 mg/kg | -       | -                                               |
|                                    | LC50 Inhalation Vapour [OECD 403] | Rat - Male, Female    | >0.83 mg/l  | 4 hours | test substance: CAS no. 7558-80-7 (read-across) |
|                                    | LD50 Dermal [OECD 402]            | Rabbit - Male, Female | >2000 mg/kg | -       | -                                               |
|                                    | LD50 Oral [OECD 420]              | Rat - Female          | >2000 mg/kg | -       | test substance: CAS no. 7758-11-4 (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                            | Species | Score | Exposure    | Observation | Remarks |
|------------------------------------------------------------------------|-----------------------------------|---------|-------|-------------|-------------|---------|
| Ferrate(4-), hexakis (cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)- | Eyes - Mild irritant [OECD 405]   | Rabbit  | -     | -           | -           | -       |
|                                                                        | Skin - Not irritant [OECD 404]    | Rabbit  | -     | -           | -           | -       |
| tripotassium hexacyanoferrate                                          | Eyes - Irritant [OECD 405]        | Rabbit  | -     | -           | -           | -       |
|                                                                        | Skin - Not irritant [OECD 439]    | Human   | -     | -           | -           | -       |
| disodium hydrogenorthophosphate                                        | Eyes - Not irritant [OECD 405]    | Rabbit  | -     | 0.5 minutes | -           | -       |
|                                                                        | Skin - Not irritant [OECD 404]    | Rabbit  | -     | 24 hours    | -           | -       |
| potassium dihydrogenorthophosphate                                     | Eyes - Not irritant [Draize Test] | Rabbit  | -     | 0.5 minutes | -           | -       |
|                                                                        | Skin - Not irritant [Draize Test] | Rabbit  | -     | 4 hours     | -           | -       |

**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.

**Sensitisation**



**SECTION 11: Toxicological information**

| Product/ingredient name                                                | Route of exposure | 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      | Not sensitizing [OECD 429] | -       |
| disodium hydrogenorthophosphate                                        | skin              | Mouse      | Not sensitizing [OECD 429] | -       |

**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            | Test     | Experiment                                                                                  | Result   | Remarks                |
|------------------------------------|----------|---------------------------------------------------------------------------------------------|----------|------------------------|
| tripotassium hexacyanoferrate      | OECD 471 | Subject: Bacteria<br>Metabolic activation: with and without                                 | Negative | Salmonella typhimurium |
| disodium hydrogenorthophosphate    | OECD 473 | Experiment: In vitro<br>Subject: Mammalian-Human<br>Metabolic activation: with and without  | Negative | -                      |
|                                    | -        | Experiment: In vitro<br>Subject: Mouse<br>Metabolic activation: with and without            | Negative | -                      |
|                                    | OECD 487 | Subject: Mammalian-Human<br>Metabolic activation: with and without                          | Negative | -                      |
| potassium dihydrogenorthophosphate | -        | Experiment: In vitro<br>Subject: Mammalian-Animal<br>Metabolic activation: with and without | Negative | -                      |
|                                    | OECD 487 | Experiment: In vitro<br>Subject: Mammalian-Human<br>Metabolic activation: with and without  | Negative | Micronucleus-test      |

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

**Carcinogenicity**

**Conclusion/Summary** : Not available.

**Reproductive toxicity**

**Conclusion/Summary** : Not available.

**Teratogenicity**

**Conclusion/Summary** : Not available.

**Specific target organ toxicity (single exposure)**

**SECTION 11: Toxicological information**

Not available.

**Specific target organ toxicity (repeated exposure)**

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**

Human Health:

Product does not contain substances above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

**11.2.2 Other information**

Not available.

**SECTION 12: Ecological information****12.1 Toxicity**

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

**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.

| 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.

**SECTION 12: Ecological information****12.4 Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

**12.5 Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**12.6 Endocrine disrupting properties**

Environment:

Product does not contain substances above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

**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.

**SECTION 14: Transport information**

|                                        | ADR/RID        | ADN            | IMDG           | IATA           |
|----------------------------------------|----------------|----------------|----------------|----------------|
| <b>14.1 UN number or ID number</b>     | Not regulated. | Not regulated. | Not regulated. | Not regulated. |
| <b>14.2 UN proper shipping name</b>    | -              | -              | -              | -              |
| <b>14.3 Transport hazard class(es)</b> | -              | -              | -              | -              |
| <b>Label</b>                           |                |                |                |                |

**SECTION 14: Transport information**

|                                   |     |     |                      |     |
|-----------------------------------|-----|-----|----------------------|-----|
| <b>14.4 Packing group</b>         | -   | -   | -                    | -   |
| <b>14.5 Environmental hazards</b> | 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 applicable.

**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.

**Ozone depleting substances (1005/2009/EU)**

Not listed.

**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**

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**

**SECTION 15: Regulatory information**

Not listed.

**Rotterdam Convention on Prior Informed Consent (PIC)**

Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**

Not listed.

**Inventory list**

|                                |                                                                               |
|--------------------------------|-------------------------------------------------------------------------------|
| <b>Australia</b>               | : All components are listed or exempted.                                      |
| <b>Canada</b>                  | : All components are listed or exempted.                                      |
| <b>China</b>                   | : All components are listed or exempted.                                      |
| <b>Eurasian Economic Union</b> | : <b>Russian Federation inventory:</b> All components are listed or exempted. |
| <b>Japan</b>                   | : <b>Japan inventory (CSCL):</b><br>All components are listed or exempted.    |
| <b>New Zealand</b>             | : All components are listed or exempted.                                      |
| <b>Philippines</b>             | : All components are listed or exempted.                                      |
| <b>Republic of Korea</b>       | : All components are listed or exempted.                                      |
| <b>Taiwan</b>                  | : All components are listed or exempted.                                      |
| <b>Thailand</b>                | : All components are listed or exempted.                                      |
| <b>United States</b>           | : All components are active or exempted.                                      |
| <b>Viet Nam</b>                | : 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 = The European 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]**

**SECTION 16: Other information**

| Classification  | Justification |
|-----------------|---------------|
| Not classified. |               |

**Full text of abbreviated H statements**

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

**Full text of classifications [CLP/GHS]**

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

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**Notice to reader**

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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.