

## Section 1. Identification

**Product name** : ABX Pentra Lactic Acid - R1  
**Product type** : Liquid.  
**Product is part of kit** : A11A01721  
**Product description** : 103 mL

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

Diagnostic reagent for quantitative *in vitro* determination of Lactic Acid in plasma by colorimetry.

**Supplier's details** : HORIBA ABX SAS  
Parc Euromédecine - Rue du Caducée  
BP 7290  
34184 MONTPELLIER CEDEX 4 - FRANCE  
Tel: +33 (0) 4 67 14 15 16  
Fax: +33 (0) 4 67 14 15 17

**e-mail address of person responsible for this SDS** : documentation.med@horiba.com

### National advisory body/Poison Center

**Emergency telephone number** : [+1 800 424 9300 \(CHEMTREC®\)](tel:+18004249300)

### Supplier

**Telephone number** : + 800 67 14 15 16

## Section 2. Hazards identification

**OSHA/HCS status** :  While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

**Classification of the substance or mixture** :  Not classified.

### GHS label elements

**Signal word** :  No signal word.

**Hazard statements** :  No known significant effects or critical hazards.

### Precautionary statements

**Prevention** :  Not applicable.

**Response** :  Not applicable.

**Storage** :  Not applicable.

**Disposal** :  Not applicable.

**Hazards not otherwise classified** :  None known.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture  
**Other means of identification** : Not available.

### CAS number/other identifiers

**CAS number** : Not applicable.  
**Product code** : Not available.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

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

## Section 4. First aid measures

### Description of necessary 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.

**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. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.

### Most important symptoms/effects, 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.

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments** : No specific treatment.

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

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

- Flammability** : May be combustible at high temperature.  
 In a fire, decomposition may produce toxic gases/fumes.
- Extinguishing media**
- Suitable extinguishing media** :  Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** :  None known.
- Specific hazards arising from the chemical** :  In a fire or if heated, a pressure increase will occur and the container may burst.
- Hazardous thermal decomposition products** :  No specific data.
- 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.
- Remark** :  In a fire, decomposition may produce toxic gases/fumes.

## Section 6. Accidental release measures

### 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 spilled 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".
- Environmental precautions** :  Avoid dispersal of spilled 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).
- Other information** : This preparation contains a small amount of sodium azide. Sodium azide is harmful to aquatic organisms and can react with copper, lead, brass or solder in plumbing system and form potentially explosive metal azides. Prevent preparation from entering the drain and water intakes in the environment. If preparation enters the drain, flush with large amounts of water to prevent azide build up. Follow proper disposal procedures.

### Methods and materials 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 (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### 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.
- Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 2 to 8°C (35,6 to 46,4°F). 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 unlabeled containers. Use appropriate containment to avoid environmental contamination.
- Recommendations** : Due to sodium azide, incompatible with acid and some metals. Forms explosion-sensitive compounds.
- Other information** : Store away from light.

## 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 or exposure or environmental releases.

### Control parameters

#### Occupational exposure limits

None.

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

### 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: safety glasses with side-shields.
- 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.

## Section 8. Exposure controls/personal protection

- 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** :  Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Colorless.
- Odor** :  Odorless.
- Odor threshold** : Not available.
- pH** :  7 to 8
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Not available.
- Evaporation rate** : Not available.
- Flammability** : May be combustible at high temperature.  
 In a fire, decomposition may produce toxic gases/fumes.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** :  1,013 g/cm<sup>3</sup> [20°C (68°F)]
- Solubility** :  Soluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** :  Not applicable.
- Decomposition temperature** : Not available.
- Viscosity** : Not available.
- Explosive properties** : Not available.
- Oxidizing properties** : Not available.

## Section 10. Stability and reactivity

- Reactivity** :  No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** :  The product is stable.
- Possibility of hazardous reactions** :  Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** :  No specific data.

## Section 10. Stability and reactivity

- Recommendations** : This reagent contains sodium azide as preservative. Sodium azide may react with Pb and Cu and form dangerous material, metal azide product.
- Incompatible materials** :  No specific data.
- Other information** :  Reactive or incompatible with the following materials: oxidizing materials.
- Hazardous decomposition products** :  Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Not available.

#### Irritation/Corrosion

Not available.

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

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

Not available.

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

Not available.

#### Aspiration hazard

Not available.

**Information on the 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.

## Section 11. Toxicological information

- Skin contact** : No specific data.  
**Ingestion** : No specific data.

### Delayed and immediate effects and also 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.

- General** :  No known significant effects or critical hazards.  
**Carcinogenicity** :  No known significant effects or critical hazards.  
**Mutagenicity** :  No known significant effects or critical hazards.  
**Teratogenicity** :  No known significant effects or critical hazards.  
**Developmental effects** :  No known significant effects or critical hazards.  
**Fertility effects** :  No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

Not available.

### Persistence and degradability

Not available.

### Bioaccumulative potential

Not available.

### Mobility in soil

- Soil/water partition coefficient ( $K_{oc}$ )** : Not available.  
**Mobility** : Not available.

- Other adverse effects** :  No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** :  The generation of waste should be avoided or minimized 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

|                            | DOT<br>Classification                   | TDG<br>Classification                   | Mexico<br>Classification                | ADR/RID        | IMDG                                | IATA           |
|----------------------------|---|---|---|----------------|-------------------------------------|----------------|
| UN number                  | Not regulated.                          | Not regulated.                          | Not regulated.                          | Not regulated. | Not regulated.                      | Not regulated. |
| UN proper shipping name    | <input checked="" type="checkbox"/>     | <input checked="" type="checkbox"/>     | <input checked="" type="checkbox"/>     | -              | <input checked="" type="checkbox"/> | -              |
| Transport hazard class(es) | -                                       | -                                       | -                                       | -              | -                                   | -              |
| Packing group              | -                                       | -                                       | -                                       | -              | -                                   | -              |
| Environmental hazards      | <input checked="" type="checkbox"/> No. | <input checked="" type="checkbox"/> No. | <input checked="" type="checkbox"/> No. | No.            | No.                                 | No.            |
| Additional information     | -                                       | -                                       | -                                       | -              | -                                   | -              |

**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.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** :  **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**United States inventory (TSCA 8b):** All components are listed or exempted.  
 **Clean Water Act (CWA) 311:** sodium hydroxide

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

## Section 15. Regulatory information

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

| Name         | %        | EHS  | SARA 302 TPQ |           | SARA 304 RQ |           |
|--------------|----------|------|--------------|-----------|-------------|-----------|
|              |          |      | (lbs)        | (gallons) | (lbs)       | (gallons) |
| Sodium azide | 0 - 0.25 | Yes. | 500          | -         | 1000        | -         |

**SARA 304 RQ** : 2000000 lbs / 908000 kg [236790 gal / 896347,5 L]

### SARA 311/312

**Classification** : Not applicable.

#### Composition/information on ingredients

No products were found.

### State regulations

**Massachusetts** : None of the components are listed.

**New York** : None of the components are listed.

**New Jersey** : None of the components are listed.

**Pennsylvania** : None of the components are listed.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

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

Not listed.

### International lists

#### National inventory

**Australia** : All components are listed or exempted.

**Canada** : All components are listed or exempted.

**China** : All components are listed or exempted.

**Europe** : All components are listed or exempted.

**Japan** : All components are listed or exempted.

**Malaysia** : Not determined.

**New Zealand** : All components are listed or exempted.

**Philippines** : All components are listed or exempted.

## Section 15. Regulatory information

- Republic of Korea** : All components are listed or exempted.  
**Taiwan** :  All components are listed or exempted.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

|                  |   |
|------------------|---|
| Health           | 0 |
| Flammability     | 0 |
| Physical hazards | 0 |
|                  |   |

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

### National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### History

**Date of printing** : 23/08/2017.

**Date of issue/Date of revision** : 23/08/2017.

**Version** : 2

### Key to abbreviations

- : ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 UN = United Nations

**References** : Not available.

**Revision comments** :  Not available.

Indicates information that has changed from previously issued version.

### Notice to reader

## Section 16. Other information

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.



## Section 1. Identification

**Product name** : ABX Pentra Lactic Acid - R2  
**Product type** : Solid.  
**Product is part of kit** : A11A01721  
**Product description** : 10 X 10 mL (Lyophilised)

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

Diagnostic reagent for quantitative *in vitro* determination of Lactic Acid in plasma by colorimetry.

**Supplier's details** : HORIBA ABX SAS  
Parc Euromédecine - Rue du Caducée  
BP 7290  
34184 MONTPELLIER CEDEX 4 - FRANCE  
Tel: +33 (0) 4 67 14 15 16  
Fax: +33 (0) 4 67 14 15 17

**e-mail address of person responsible for this SDS** : documentation.med@horiba.com

### National advisory body/Poison Center

**Emergency telephone number** : [+1 800 424 9300 \(CHEMTREC®\)](tel:+18004249300)

### Supplier

**Telephone number** : + 800 67 14 15 16

## Section 2. Hazards identification

**OSHA/HCS status** :  While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

**Classification of the substance or mixture** :  Not classified.

### GHS label elements

**Signal word** :  No signal word.

**Hazard statements** :  No known significant effects or critical hazards.

### Precautionary statements

**Prevention** :  Not applicable.

**Response** :  Not applicable.

**Storage** :  Not applicable.

**Disposal** :  Not applicable.

**Hazards not otherwise classified** :  None known.

**Biological Hazard** : Animal source material. Treat as potentially infectious because there is no approved test done on this reagent.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture  
**Other means of identification** : Not available.

### CAS number/other identifiers

**CAS number** : Not applicable.  
**Product code** : Not available.

| Ingredient name  | %        | CAS number |
|--|----------|------------|
| <input checked="" type="checkbox"/> -amino-2,3-dimethyl-1-phenyl-3-pyrazolin-5-one           | 5 - 10   | 83-07-8    |
| Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)-lactate 2-monooxygenase | 1 - 5    | 14459-95-1 |
|  | 0.25 - 1 | 9028-72-2  |

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**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 and hence require reporting in this section.**

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

## Section 4. First aid measures

### Description of necessary 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. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** :  No known significant effects or critical hazards.
- Inhalation** :  Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- 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.

### Indication of immediate medical attention and special treatment needed, if necessary

## Section 4. First aid measures

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

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

- Flammability** : May be combustible at high temperature.  
 In a fire, decomposition may produce toxic gases/fumes.
- Extinguishing media**
- Suitable extinguishing media** :  Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** :  None known.
- Specific hazards arising from the chemical** :  No specific fire or explosion hazard.
- Hazardous thermal decomposition products** :  Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
metal oxide/oxides
- 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.
- Remark** :  In a fire, decomposition may produce toxic gases/fumes.

## Section 6. Accidental release measures

### 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 spilled 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".
- Environmental precautions** :  Avoid dispersal of spilled 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).

### Methods and materials for containment and cleaning up

- Small spill** :  Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.  
Wash contaminated area with disinfectant.

## Section 6. Accidental release measures

- Large spill** : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### 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.

- Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 2 to 8°C (35,6 to 46,4°F). 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 unlabeled containers. Use appropriate containment to avoid environmental contamination.

- Other information** : Store away from light.

## 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 or exposure or environmental releases.

### Control parameters

#### Occupational exposure limits

| Ingredient name   | Exposure limits  |
|---|--|
| Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)- | <p><b>OSHA PEL 1989 (United States, 3/1989).</b><br/> <b>Absorbed through skin.</b><br/>                     TWA: 5 mg/m<sup>3</sup>, (as CN) 8 hours.</p> <p><b>NIOSH REL (United States, 10/2013).</b><br/>                     CEIL: 4,7 ppm 10 minutes.<br/>                     CEIL: 5 mg/m<sup>3</sup> 10 minutes.</p> <p><b>OSHA PEL (United States, 2/2013).</b><br/> <b>Absorbed through skin.</b><br/>                     TWA: 5 mg/m<sup>3</sup>, (as CN) 8 hours.</p> <p><b>ACGIH TLV (United States, 3/2015).</b><br/> <b>Absorbed through skin.</b><br/>                     C: 5 mg/m<sup>3</sup></p> |

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

### Individual protection measures

## Section 8. Exposure controls/personal protection

- 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: safety glasses with side-shields.
- 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.
- 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** : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Solid.
- Color** : White.
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Not available.
- Evaporation rate** : Not applicable.
- Flammability** : May be combustible at high temperature.  
In a fire, decomposition may produce toxic gases/fumes.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 1 g/cm<sup>3</sup> [20°C (68°F)]
- Solubility** : Soluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not applicable.
- Decomposition temperature** : Not available.
- Viscosity** : Not available.
- Explosive properties** : Not available.

## Section 9. Physical and chemical properties

**Oxidizing properties** : Not available.

## Section 10. Stability and reactivity

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

**Chemical stability** :  The product is stable.

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

**Conditions to avoid** :  No specific data.

**Incompatible materials** :  No specific data.

**Other information** :  Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.  
Contact with acids liberates very toxic gas.

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

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/ingredient name  | Result    | Species | Dose       | Exposure |
|--|-----------|---------|------------|----------|
| <input checked="" type="checkbox"/> -amino-2,3-dimethyl-1-phenyl-3-pyrazolin-5-one | LD50 Oral | Rat     | 1700 mg/kg | -        |

#### Irritation/Corrosion

Not available.

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

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

| Name   | Category   | Route of exposure | Target organs                |
|--|------------|-------------------|------------------------------|
| <input checked="" type="checkbox"/> -amino-2,3-dimethyl-1-phenyl-3-pyrazolin-5-one | Category 3 | Not applicable.   | Respiratory tract irritation |

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

## Section 11. Toxicological information

Not available.

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

- Eye contact** :  No known significant effects or critical hazards.
- Inhalation** :  Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- 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 and also 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.

- General** :  No known significant effects or critical hazards.
- Carcinogenicity** :  No known significant effects or critical hazards.
- Mutagenicity** :  No known significant effects or critical hazards.
- Teratogenicity** :  No known significant effects or critical hazards.
- Developmental effects** :  No known significant effects or critical hazards.
- Fertility effects** :  No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

| Route                                    | ATE value   |
|--|-------------|
| <input checked="" type="checkbox"/> Oral | 17017 mg/kg |

## Section 12. Ecological information

### Toxicity

Not available.

### Persistence and degradability

Not available.

### Bioaccumulative potential

Not available.

### Mobility in soil

Soil/water partition coefficient ( $K_{oc}$ ) : Not available.

Mobility : Not available.

Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

|                            | DOT Classification | TDG Classification | Mexico Classification | ADR/RID        | IMDG           | IATA           |
|----------------------------|--------------------|--------------------|-----------------------|----------------|----------------|----------------|
| UN number                  | Not regulated.     | Not regulated.     | Not regulated.        | Not regulated. | Not regulated. | Not regulated. |
| UN proper shipping name    |                    |                    |                       | -              |                | -              |
| Transport hazard class(es) | -                  | -                  | -                     | -              | -              | -              |
| Packing group              | -                  | -                  | -                     | -              | -              | -              |
| Environmental hazards      | No.                | No.                | No.                   | No.            | No.            | No.            |
| Additional information     | -                  | -                  | -                     | -              | -              | -              |

## Section 14. Transport information

**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.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined  
 **United States inventory (TSCA 8b)**: Not determined.  
 **Clean Water Act (CWA) 307**: Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate, (OC-6-11)-

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** :  Listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** :  Not applicable.

### SARA 311/312

**Classification** :  Not applicable.

#### Composition/information on ingredients

| Name  | %        | Fire hazard | Sudden release of pressure | Reactive | Immediate (acute) health hazard | Delayed (chronic) health hazard |
|---|----------|-------------|----------------------------|----------|---------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> 4-amino-2,3-dimethyl-1-phenyl-3-pyrazolin-5-one | 5 - 10   | No.         | No.                        | No.      | Yes.                            | No.                             |
| <input checked="" type="checkbox"/> lactate 2-monooxygenase                         | 0.25 - 1 | No.         | No.                        | No.      | Yes.                            | No.                             |

### State regulations

**Massachusetts** : None of the components are listed.

**New York** :  The following components are listed: Cyanides (soluble cyanide salts), not elsewhere specified

**New Jersey** :  The following components are listed: CYANIDE compounds

**Pennsylvania** :  The following components are listed: CYANIDE COMPOUNDS

### California Prop. 65

## Section 15. Regulatory information

**WARNING:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

| Ingredient name   | Cancer | Reproductive | No significant risk level | Maximum acceptable dosage level |
|---|--------|--------------|---------------------------|---------------------------------|
| Ferrate(4-), hexakis(cyano-C)-, tetrapotassium, trihydrate,(OC-6-11)- | No.    | Yes.         | No.                       | 9.8 µg/day (ingestion)          |

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

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

Not listed.

### International lists

#### National inventory

|                   |  |
|-------------------|--|
| Australia         | : <input checked="" type="checkbox"/> Not determined.                        |
| Canada            | : <input checked="" type="checkbox"/> Not determined.                        |
| China             | : <input checked="" type="checkbox"/> Not determined.                        |
| Europe            | : All components are listed or exempted.                                     |
| Japan             | : Not determined.  |
| Malaysia          | : <input checked="" type="checkbox"/> Not determined.                        |
| New Zealand       | : <input checked="" type="checkbox"/> Not determined.                        |
| Philippines       | : <input checked="" type="checkbox"/> Not determined.                        |
| Republic of Korea | : <input checked="" type="checkbox"/> Not determined.                        |
| Taiwan            | : <input checked="" type="checkbox"/> All components are listed or exempted. |

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

|                  |   |
|------------------|---|
| Health           | 0 |
| Flammability     | 0 |
| Physical hazards | 0 |
|                  |   |

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The customer is responsible for determining the PPE code for this material.

### National Fire Protection Association (U.S.A.)

## Section 16. Other information



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### History

**Date of printing** : 23/08/2017.

**Date of issue/Date of revision** : 23/08/2017.

**Version** : 2

**Key to abbreviations** : ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
UN = United Nations

**References** : Not available.

**Revision comments** :  Not available.

Indicates information that has changed from previously issued version.

### Notice to reader

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