



**Be Right™**

# SAFETY DATA SHEET

Issue Date 09-Nov-2021

Revision Date 10-Feb-2025

Version 1.8

Page 1 / 16

## 1. IDENTIFICATION

### Product identifier

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

### Other means of identification

**Product Code(s)** 2150342

**Safety data sheet number** M01216

**UN/ID no** UN3264

### Recommended use of the chemical and restrictions on use

**Recommended Use** Standard solution. Water Analysis.

**Uses advised against**

**Restrictions on use** None.

### Details of the supplier of the safety data sheet

#### **Manufacturer Address**

Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

#### Emergency telephone number

+1(303) 623-5716 - 24 Hour Service

## 2. HAZARDS IDENTIFICATION

### Classification

#### **Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                   |             |
|-----------------------------------|-------------|
| Corrosive to metals               | Category 1  |
| Skin corrosion/irritation         | Category 1  |
| Serious eye damage/eye irritation | Category 1  |
| Respiratory sensitization         | Category 1  |
| Skin sensitization                | Category 1  |
| Carcinogenicity                   | Category 1B |
| Reproductive toxicity             | Category 1B |
| Chronic aquatic toxicity          | Category 3  |

#### Hazards not otherwise classified (HNOC)

Not applicable

### Label elements

#### **Signal word**

Danger

**Product Code(s)** 2150342

**Issue Date** 09-Nov-2021

**Version** 1.8

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Revision Date** 10-Feb-2025

**Page** 2 / 16



#### **Hazard statements**

H290 - May be corrosive to metals

H314 - Causes severe skin burns and eye damage

H317 - May cause an allergic skin reaction

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H350 - May cause cancer

H360 - May damage fertility or the unborn child

H412 - Harmful to aquatic life with long lasting effects

#### **Precautionary statements**

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves, protective clothing, eye protection, and face protection

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/physician

P363 - Wash contaminated clothing before reuse

P405 - Store locked up

P501 - Dispose of contents/ container to an approved waste disposal plant

P285 - In case of inadequate ventilation wear respiratory protection

P304 + P341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing

P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

P272 - Contaminated work clothing should not be allowed out of the workplace

P201 - Obtain special instructions before use

P308 + P313 - IF exposed or concerned: Get medical advice/attention

P273 - Avoid release to the environment

P234 - Keep only in original container

P390 - Absorb spillage to prevent material damage

#### **Other Hazards Known**

None

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### **Substance**

Not applicable

#### **Mixture**

Percent ranges are used where confidential product information is applicable.

**Product Code(s)** 2150342

**Issue Date** 09-Nov-2021

**Version** 1.8

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Revision Date** 10-Feb-2025

**Page** 3 / 16

| Chemical name                | CAS No.    | Percent Range | HMRIC # |
|------------------------------|------------|---------------|---------|
| Nitric acid                  | 7697-37-2  | <1%           | -       |
| Nitric acid, cobalt(2+) salt | 10141-05-6 | <1%           | -       |

#### 4. FIRST AID MEASURES

##### Description of first aid measures

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General advice</b>                     | Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Inhalation</b>                         | Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention. May cause allergic respiratory reaction. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. |
| <b>Eye contact</b>                        | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention.                                                                                                                                                                                                                                                                                                                                          |
| <b>Skin contact</b>                       | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. May cause an allergic skin reaction.                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Ingestion</b>                          | Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention. May produce an allergic reaction.                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Self-protection of the first aider</b> | Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.                                                                                                                                                                                                                                                                                                                             |

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

|                 |                                                                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptoms</b> | Burning sensation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing. Itching. Rashes. Hives. |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|

##### Indication of any immediate medical attention and special treatment needed

|                           |                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Note to physicians</b> | Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization in susceptible persons. Treat symptomatically. |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 5. FIRE-FIGHTING MEASURES

|                                                   |                                                                                                                                                                                                                                                                              |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b>               | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.                                                                                                                                                                      |
| <b>Unsuitable Extinguishing Media</b>             | Caution: Use of water spray when fighting fire may be inefficient.                                                                                                                                                                                                           |
| <b>Specific hazards arising from the chemical</b> | The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Product is or contains a sensitizer. May cause sensitization by inhalation and skin contact. May cause sensitization by skin contact. |

**Product Code(s)** 2150342

**Issue Date** 09-Nov-2021

**Version** 1.8

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Revision Date** 10-Feb-2025

**Page** 4 / 16

**Hazardous combustion products** No information available.

**Special protective equipment for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. ACCIDENTAL RELEASE MEASURES

**U.S. Notice** Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

### Personal precautions, protective equipment and emergency procedures

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Other Information** Refer to protective measures listed in Sections 7 and 8.

### Environmental precautions

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

### Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

**Reference to other sections** See section 8 for more information. See section 13 for more information.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Provide extract ventilation to points where emissions occur. Remove contaminated clothing and shoes.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

**Flammability class** Not applicable

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

### Exposure Guidelines

| Chemical name                                    | ACGIH TLV                                                                                                      | OSHA PEL                                                                                                                                                              | NIOSH                                                                                               |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Nitric acid<br>CAS#: 7697-37-2                   | TWA: 2 ppm<br>STEL: 4 ppm                                                                                      | TWA: 2 ppm<br>TWA: 5 mg/m <sup>3</sup><br>(vacated) TWA: 2 ppm<br>(vacated) TWA: 5 mg/m <sup>3</sup><br>(vacated) STEL: 4 ppm<br>(vacated) STEL: 10 mg/m <sup>3</sup> | IDLH: 25 ppm<br>TWA: 2 ppm<br>TWA: 5 mg/m <sup>3</sup><br>STEL: 4 ppm<br>STEL: 10 mg/m <sup>3</sup> |
| Nitric acid, cobalt(2+) salt<br>CAS#: 10141-05-6 | TWA: 0.02 mg/m <sup>3</sup> Co<br>inhalable particulate matter<br>dermal sensitizer; respiratory<br>sensitizer | NDF                                                                                                                                                                   | NDF                                                                                                 |

### Appropriate engineering controls

#### Engineering Controls

Showers  
Eyewash stations  
Ventilation systems.

### Individual protection measures, such as personal protective equipment

#### Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

#### Hand Protection

Wear suitable gloves. Impervious gloves. Barrier creams may help to protect the exposed areas of skin. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.

#### Eye/face protection

Face protection shield.

#### Skin and body protection

Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Avoid contact with eyes, skin and clothing. Wash contaminated clothing before reuse.

#### General Hygiene Considerations

Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

#### Environmental exposure controls

Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

#### Thermal hazards

None under normal processing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

#### Physical state

Liquid

**Product Code(s)** 2150342

**Issue Date** 09-Nov-2021

**Version** 1.8

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Revision Date** 10-Feb-2025

**Page** 6 / 16

**Appearance** Liquid  
aqueous solution

**Color** light pink  
or  
clear

**Odor** Odorless

**Odor threshold** No data available

| <u>Property</u>                                        | <u>Values</u>                            | <u>Remarks • Method</u> |
|--------------------------------------------------------|------------------------------------------|-------------------------|
| <b>Molecular weight</b>                                | No data available                        |                         |
| <b>pH</b>                                              | 0.5                                      | @ 20 °C                 |
| <b>Melting point / freezing point</b>                  | ~ -1 °C / 30.2 °F                        |                         |
| <b>Initial boiling point and boiling range</b>         | ~ 100 °C / 212 °F                        |                         |
| <b>Evaporation rate</b>                                | No data available                        |                         |
| <b>Vapor pressure</b>                                  | 23.702 mm Hg / 3.16 kPa at 25 °C / 77 °F |                         |
| <b>Relative vapor density</b>                          | No data available                        |                         |
| <b>Specific gravity - VALUE 1</b>                      | 0.998                                    |                         |
| <b>Partition coefficient</b>                           | Not applicable                           |                         |
| <b>Soil Organic Carbon-Water Partition Coefficient</b> | Not applicable                           |                         |
| <b>Autoignition temperature</b>                        | No data available                        |                         |
| <b>Decomposition temperature</b>                       | No data available                        |                         |
| <b>Dynamic viscosity</b>                               | No data available                        |                         |
| <b>Kinematic viscosity</b>                             | No data available                        |                         |

**Solubility(ies)**

**Water solubility**

| <u>Water solubility classification</u> | <u>Water solubility</u> | <u>Water Solubility Temperature</u> |
|----------------------------------------|-------------------------|-------------------------------------|
| Soluble                                | > 1000 mg/L             | 25 °C / 77 °F                       |

**Solubility in other solvents**

| <u>Chemical Name</u> | <u>Solubility classification</u> | <u>Solubility</u> | <u>Solubility Temperature</u> |
|----------------------|----------------------------------|-------------------|-------------------------------|
| Acid                 | Soluble                          | > 1000 mg/L       | 25 °C / 77 °F                 |

**Other information**

**Corrosive to metals**

Classified as corrosive to metal according to GHS criteria

**Steel Corrosion Rate**

11.18 mm/yr / 0.44 in/yr

**Aluminum Corrosion Rate**

3.86 mm/yr / 0.15 in/yr

**Volatile Organic Compounds (VOC) Content**

| <u>Chemical name</u>         | <u>CAS No.</u> | <u>Volatile organic compounds (VOC) content</u> | <u>CAA (Clean Air Act)</u> |
|------------------------------|----------------|-------------------------------------------------|----------------------------|
| Nitric acid                  | 7697-37-2      | Not applicable                                  | -                          |
| Nitric acid, cobalt(2+) salt | 10141-05-6     | No data available                               | -                          |

**Product Code(s)** 2150342

**Issue Date** 09-Nov-2021

**Version** 1.8

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Revision Date** 10-Feb-2025

**Page** 7 / 16

#### Explosive properties

**Upper explosion limit**

No data available

**Lower explosion limit**

No data available

#### Flammable properties

**Flash point**

No data available

#### Flammability Limit in Air

**Upper flammability limit:**

No data available

**Lower flammability limit:**

No data available

#### Oxidizing properties

No data available.

#### Bulk density

No data available

## 10. STABILITY AND REACTIVITY

#### Reactivity

Not applicable. Corrosive to metal.

#### Chemical stability

Stable under normal conditions.

#### Explosion data

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

#### Possibility of hazardous reactions

None under normal processing.

#### Hazardous polymerization

None under normal processing.

#### Conditions to avoid

Exposure to air or moisture over prolonged periods.

#### Incompatible materials

Oxidizing agent. Acids. Bases.

#### Hazardous decomposition products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

## 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

#### Product Information

##### Inhalation

Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause sensitization in susceptible persons.

**Product Code(s)** 2150342

**Issue Date** 09-Nov-2021

**Version** 1.8

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Revision Date** 10-Feb-2025

**Page** 8 / 16

**Eye contact** Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

**Skin contact** Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May cause sensitization by skin contact. Corrosive. Causes severe burns. Avoid contact with skin and clothing.

**Ingestion** Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. May cause additional effects as listed under "Inhalation".

**Symptoms** Redness. Burning. May cause blindness. Coughing and/ or wheezing. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Itching. Rashes. Hives.

**Acute toxicity**

Based on available data, the classification criteria are not met

**Mixture**

No data available.

**Ingredient Acute Toxicity Data**

Test data reported below.

**Oral Exposure Route**

| Chemical name                                          | Endpoint type        | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--------------------------------------------------------|----------------------|---------------|---------------|-----------------------|------------------------------------------------|
| Nitric acid, cobalt(2+) salt (<1%)<br>CAS#: 10141-05-6 | Rat LD <sub>50</sub> | 434 mg/kg     | None reported | None reported         | GESTIS                                         |

**Inhalation (Vapor) Exposure Route**

**Unknown Acute Toxicity**

0% of the mixture consists of ingredient(s) of unknown toxicity.

**Acute Toxicity Estimations (ATE)**

The following values are calculated based on chapter 3.1 of the GHS document

|                               |                          |
|-------------------------------|--------------------------|
| ATEmix (oral)                 | No information available |
| ATEmix (dermal)               | No information available |
| ATEmix (inhalation-dust/mist) | No information available |
| ATEmix (inhalation-vapor)     | 303.00 mg/l              |
| ATEmix (inhalation-gas)       | No information available |

**Skin corrosion/irritation**

Causes severe burns.

**Mixture**

No data available.

**Product Code(s)** 2150342

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Issue Date** 09-Nov-2021

**Revision Date** 10-Feb-2025

**Version** 1.8

**Page** 9 / 16

#### **Ingredient Skin Corrosion/Irritation Data**

Test data reported below.

| Chemical name                        | Test method               | Species | Reported dose | Exposure time | Results           | Key literature references and sources for data |
|--------------------------------------|---------------------------|---------|---------------|---------------|-------------------|------------------------------------------------|
| Nitric acid (<1%)<br>CAS#: 7697-37-2 | Existing human experience | Human   | None reported | None reported | Corrosive to skin | ERMA                                           |

#### **Serious eye damage/irritation**

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

#### **Mixture**

No data available.

#### **Ingredient Eye Damage/Eye Irritation Data**

Test data reported below.

| Chemical name                        | Test method               | Species | Reported dose | Exposure time | Results           | Key literature references and sources for data |
|--------------------------------------|---------------------------|---------|---------------|---------------|-------------------|------------------------------------------------|
| Nitric acid (<1%)<br>CAS#: 7697-37-2 | Existing human experience | Human   | None reported | None reported | Corrosive to eyes | ERMA                                           |

#### **Respiratory or skin sensitization**

May cause sensitization by inhalation. May cause sensitization by skin contact.

#### **Mixture**

No data available.

#### **Ingredient Sensitization Data**

No data available.

#### **STOT - single exposure**

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

#### **Mixture**

No data available.

#### **Ingredient Specific Target Organ Toxicity Single Exposure Data**

Test data reported below.

#### **Oral Exposure Route**

| Chemical name                                          | Endpoint type          | Reported dose | Exposure time | Toxicological effects                                                                                         | Key literature references and sources for data |
|--------------------------------------------------------|------------------------|---------------|---------------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Nitric acid, cobalt(2+) salt (<1%)<br>CAS#: 10141-05-6 | Human LD <sub>Lo</sub> | 0.28 mg/kg    | None reported | <b>Brain and Coverings</b><br>Other degenerative changes<br><b>Lungs, Thorax, or Respiration</b><br>Emphysema | RTECS                                          |

#### **Dermal Exposure Route**

| Chemical name     | Endpoint type        | Reported dose | Exposure time | Toxicological effects                       | Key literature references and sources for data |
|-------------------|----------------------|---------------|---------------|---------------------------------------------|------------------------------------------------|
| Nitric acid (<1%) | Rat TD <sub>Lo</sub> | 226500 mg/kg  | None reported | <b>Blood</b><br>Methemoglobinemia-Carboxyhe | RTECS                                          |

**Product Code(s)** 2150342

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Issue Date** 09-Nov-2021

**Revision Date** 10-Feb-2025

**Version** 1.8

**Page** 10 / 16

|                 |  |  |  |          |  |
|-----------------|--|--|--|----------|--|
| CAS#: 7697-37-2 |  |  |  | moglobin |  |
|-----------------|--|--|--|----------|--|

#### Inhalation (Vapor) Exposure Route

| Chemical name                        | Endpoint type           | Reported dose | Exposure time | Toxicological effects                                                          | Key literature references and sources for data |
|--------------------------------------|-------------------------|---------------|---------------|--------------------------------------------------------------------------------|------------------------------------------------|
| Nitric acid (<1%)<br>CAS#: 7697-37-2 | Rat<br>TC <sub>Lo</sub> | 460 mg/L      | 1 hours       | <b>Nutritional and Gross Metabolic</b><br>Weight loss or decreased weight gain | RTECS                                          |

#### STOT - repeated exposure

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

#### Mixture

No data available.

#### Ingredient Specific Target Organ Toxicity Repeat Exposure Data

Test data reported below.

#### Inhalation (Dust/Mist) Exposure Route

| Chemical name                                          | Endpoint type             | Reported dose | Exposure time | Toxicological effects                                                    | Key literature references and sources for data |
|--------------------------------------------------------|---------------------------|---------------|---------------|--------------------------------------------------------------------------|------------------------------------------------|
| Nitric acid, cobalt(2+) salt (<1%)<br>CAS#: 10141-05-6 | Human<br>TC <sub>Lo</sub> | 0.0001 mg/L   | 28 days       | <b>Lungs, Thorax, or Respiration</b><br>Fibrosis, focal (pneumoconiosis) | RTECS                                          |

#### Inhalation (Vapor) Exposure Route

| Chemical name                        | Endpoint type           | Reported dose | Exposure time | Toxicological effects                                                                                                                                                                                                                             | Key literature references and sources for data |
|--------------------------------------|-------------------------|---------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Nitric acid (<1%)<br>CAS#: 7697-37-2 | Rat<br>TC <sub>Lo</sub> | 0.001071 mg/L | 84 days       | <b>Behavioral</b><br>Muscle contraction or spasticity<br><b>Biochemical</b><br>Enzyme inhibition, induction, or change in blood or tissue levels (true cholinesterase)<br><b>Kidney, Ureter, or Bladder</b><br>Other changes in urine composition | RTECS                                          |

#### Carcinogenicity

Classification based on data available for ingredients. Contains a known or suspected carcinogen.

#### Mixture

No data available.

#### Ingredient Carcinogenicity Data

No data available.

| Chemical name                | CAS No.    | ACGIH | IARC                | NTP                    | OSHA |
|------------------------------|------------|-------|---------------------|------------------------|------|
| Nitric acid                  | 7697-37-2  | -     | Group 1<br>Group 2A | -                      | X    |
| Nitric acid, cobalt(2+) salt | 10141-05-6 | A3    | Group 2B            | Reasonably Anticipated | X    |

#### Legend

**Product Code(s)** 2150342

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Issue Date** 09-Nov-2021

**Revision Date** 10-Feb-2025

**Version** 1.8

**Page** 11 / 16

|                                                                          |                                                                                                                              |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>ACGIH (American Conference of Governmental Industrial Hygienists)</b> | A3 - Animal Carcinogen                                                                                                       |
| <b>IARC (International Agency for Research on Cancer)</b>                | Group 2A - Probably Carcinogenic to Humans<br>Group 2B - Possibly Carcinogenic to Humans<br>Group 1 - Carcinogenic to Humans |
| <b>NTP (National Toxicology Program)</b>                                 | Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen                                                     |
| <b>OSHA</b>                                                              | X - Present                                                                                                                  |

**Germ cell mutagenicity**

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

**Mixture *invitro* Data**

No data available.

**Substance *invitro* Data**

Test data reported below.

| Chemical name                                          | Test       | Cell Strain     | Reported dose | Exposure time | Results                               | Key literature references and sources for data |
|--------------------------------------------------------|------------|-----------------|---------------|---------------|---------------------------------------|------------------------------------------------|
| Nitric acid, cobalt(2+) salt (<1%)<br>CAS#: 10141-05-6 | DNA damage | Human leukocyte | 3 mg/L        | None reported | Positive test result for mutagenicity | RTECS                                          |

**Mixture *in vivo* Data**

No data available.

**Substance *in vivo* Data**

No data available.

**Reproductive toxicity**

Classification based on data available for ingredients. Contains a known or suspected reproductive toxin. The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

**Mixture**

No data available.

**Ingredient Reproductive Toxicity Data**

Test data reported below.

**Oral Exposure Route**

| Chemical name                        | Endpoint type        | Reported dose | Exposure time | Toxicological effects                                                        | Key literature references and sources for data |
|--------------------------------------|----------------------|---------------|---------------|------------------------------------------------------------------------------|------------------------------------------------|
| Nitric acid (<1%)<br>CAS#: 7697-37-2 | Rat TD <sub>Lo</sub> | 21150 mg/kg   | 21 days       | Effects on Embryo or Fetus<br>Fetotoxicity (except death e.g. stunted fetus) | RTECS                                          |

**Aspiration hazard**

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

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Harmful to aquatic life with long lasting effects.

**Unknown aquatic toxicity**

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

**Product Code(s)** 2150342

**Issue Date** 09-Nov-2021

**Version** 1.8

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Revision Date** 10-Feb-2025

**Page** 12 / 16

### Mixture

#### **Aquatic Acute Toxicity**

No data available.

#### **Aquatic Chronic Toxicity**

No data available.

### Substance

#### **Aquatic Acute Toxicity**

Test data reported below.

#### **Crustacea**

| Chemical name                                          | Exposure time | Species                   | Endpoint type    | Reported dose | Key literature references and sources for data |
|--------------------------------------------------------|---------------|---------------------------|------------------|---------------|------------------------------------------------|
| Nitric acid, cobalt(2+) salt (<1%)<br>CAS#: 10141-05-6 | 48 Hours      | <i>Ceriodaphnia dubia</i> | LC <sub>50</sub> | 0.61 mg/L     | ECHA                                           |

#### **Aquatic Chronic Toxicity**

No data available.

### Persistence and degradability

#### **Mixture**

No data available.

#### Bioaccumulation

Material does not bioaccumulate

#### **Mixture**

No data available.

#### **Partition coefficient**

Not applicable

### Mobility

#### **Soil Organic Carbon-Water Partition Coefficient**

Not applicable

#### **Other adverse effects**

No information available

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

#### **Waste from residues/unused products**

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

#### **Contaminated packaging**

Do not reuse empty containers.

#### **US EPA Waste Number**

D002

#### **Special instructions for disposal**

Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an

**Product Code(s)** 2150342

**Issue Date** 09-Nov-2021

**Version** 1.8

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Revision Date** 10-Feb-2025

**Page** 13 / 16

alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain.

## 14. TRANSPORT INFORMATION

### DOT

|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| <b>UN/ID no</b>                        | UN3264                                      |
| <b>Proper shipping name</b>            | Corrosive Liquid, Acidic, Inorganic, N.O.S. |
| <b>DOT Technical Name</b>              | (Nitric Acid Solution < 5%)                 |
| <b>Transport hazard class(es)</b>      | 8                                           |
| <b>Packing Group</b>                   | III                                         |
| <b>Emergency Response Guide Number</b> | 154                                         |

### TDG

|                                   |                                             |
|-----------------------------------|---------------------------------------------|
| <b>UN/ID no</b>                   | UN3264                                      |
| <b>Proper shipping name</b>       | Corrosive Liquid, Acidic, Inorganic, N.O.S. |
| <b>TDG Technical Name</b>         | (Nitric Acid Solution < 5%)                 |
| <b>Transport hazard class(es)</b> | 8                                           |
| <b>Packing Group</b>              | III                                         |

### IATA

|                                   |                                             |
|-----------------------------------|---------------------------------------------|
| <b>UN number or ID number</b>     | UN3264                                      |
| <b>Proper shipping name</b>       | Corrosive Liquid, Acidic, Inorganic, N.O.S. |
| <b>IATA Technical Name</b>        | (Nitric Acid Solution < 5%)                 |
| <b>Transport hazard class(es)</b> | 8                                           |
| <b>Packing group</b>              | III                                         |
| <b>ERG Code</b>                   | 154                                         |

### IMDG

|                                   |                                             |
|-----------------------------------|---------------------------------------------|
| <b>UN number or ID number</b>     | UN3264                                      |
| <b>Proper shipping name</b>       | Corrosive Liquid, Acidic, Inorganic, N.O.S. |
| <b>IMDG Technical Name</b>        | (Nitric Acid Solution < 5%)                 |
| <b>Transport hazard class(es)</b> | 8                                           |
| <b>Packing Group</b>              | III                                         |

**Note:** No special precautions necessary.

### **Additional information**

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods.

If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

## 15. REGULATORY INFORMATION

### National Inventories

For Inventory status, "complies" means, listed on the inventory, exempted or otherwise complies.

|                 |          |
|-----------------|----------|
| <b>TSCA</b>     | Complies |
| <b>DSL/NDSL</b> | Complies |

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

### International Inventories

|                      |          |
|----------------------|----------|
| <b>EINECS/ELINCS</b> | Complies |
| <b>ENCS</b>          | Complies |
| <b>IECSC</b>         | Complies |
| <b>KECI</b>          | Complies |

**Product Code(s)** 2150342

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Issue Date** 09-Nov-2021

**Revision Date** 10-Feb-2025

**Version** 1.8

**Page** 14 / 16

|       |          |
|-------|----------|
| PICCS | Complies |
| TCSI  | Complies |
| AICS  | Complies |
| NZIoC | Complies |

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**TCSI** - Taiwan Chemical Substances Inventory

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

### US Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

| Chemical name                                    | SARA 313 - Threshold Values % |
|--------------------------------------------------|-------------------------------|
| Nitric acid (CAS #: 7697-37-2)                   | 1.0                           |
| Nitric acid, cobalt(2+) salt (CAS #: 10141-05-6) | 0.1                           |

#### **SARA 311/312 Hazard Categories**

|                                   |     |
|-----------------------------------|-----|
| Acute health hazard               | Yes |
| Chronic Health Hazard             | Yes |
| Fire hazard                       | No  |
| Sudden release of pressure hazard | No  |
| Reactive Hazard                   | No  |

#### **CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

| Chemical name            | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|--------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Nitric acid<br>7697-37-2 | 1000 lb                     | -                      | -                         | X                          |

#### **CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

| Chemical name            | Hazardous Substances RQs | CERCLA/SARA RQ | Reportable Quantity (RQ)                  |
|--------------------------|--------------------------|----------------|-------------------------------------------|
| Nitric acid<br>7697-37-2 | 1000 lb                  | 1000 lb        | RQ 1000 lb final RQ<br>RQ 454 kg final RQ |

#### **U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues**

| Chemical name                           | U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Nitric acid<br>(<1%)<br>CAS#: 7697-37-2 | Release - Toxic; Theft - Explosives/Improvised Explosive Device Precursors                                    |

### US State Regulations

**Product Code(s)** 2150342

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Issue Date** 09-Nov-2021

**Revision Date** 10-Feb-2025

**Version** 1.8

**Page** 15 / 16

### **California Proposition 65**

This product does not contain any Proposition 65 chemicals

### **U.S. State Right-to-Know Regulations**

This product may contain substances regulated by state right-to-know regulations.

| Chemical name                              | New Jersey | Massachusetts | Pennsylvania |
|--------------------------------------------|------------|---------------|--------------|
| Nitric acid<br>7697-37-2                   | X          | X             | X            |
| Nitric acid, cobalt(2+) salt<br>10141-05-6 | X          | X             | X            |

### **U.S. EPA Label Information**

## **16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

### **Special Comments**

None

### **Additional information**

#### **Global Automotive Declarable Substance List (GADSL)**

| Chemical name                              | Global Automotive Declarable Substance List Classifications                                                                                                                | Global Automotive Declarable Substance List Thresholds |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Nitric acid, cobalt(2+) salt<br>10141-05-6 | Declarable Substance (LR)<br>Declarable Substance (FA)<br>Declarable Substance (FI)<br>Prohibited Substance (FA)<br>Prohibited Substance (FI)<br>Prohibited Substance (LR) | 0.1 %                                                  |

### **NFPA and HMIS Classifications**

| NFPA | Health hazards - 3        | Flammability - 0 | Instability - 0      | Physical and chemical properties - |
|------|---------------------------|------------------|----------------------|------------------------------------|
| HMIS | Health hazards - 2<br>- * | Flammability - 0 | Physical hazards - 0 | Personal protection -<br>X<br>- I  |

### **Key or legend to abbreviations and acronyms used in the safety data sheet**

|         |                                                                                             |
|---------|---------------------------------------------------------------------------------------------|
| ACGIH   | ACGIH (American Conference of Governmental Industrial Hygienists)                           |
| ATSDR   | ATSDR (Agency for Toxic Substances and Disease Registry)                                    |
| CCRIS   | CCRIS (Chemical Carcinogenesis Research Information System)                                 |
| CDC     | CDC (Center for Disease Control)                                                            |
| CEPA    | CEPA (Canadian Environmental Protection Agency)                                             |
| CICAD   | CICAD (Concise International Chemical Assessment Documents)                                 |
| ECHA    | ECHA (The European Chemicals Agency)                                                        |
| EEA     | EEA (European Environment Agency)                                                           |
| EPA     | Environmental Protection Agency                                                             |
| ERMA    | ERMA (New Zealand's Environmental Risk Management Authority)                                |
| ECOSARS | Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™     |
| FDA     | FDA (Food & Drug Administration)                                                            |
| GESTIS  | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |
| HSDB    | HSDB (Hazardous Substances Data Bank)                                                       |
| INERIS  | INERIS (The National Industrial Environment and Risks Institute)                            |

**Product Code(s)** 2150342

**Issue Date** 09-Nov-2021

**Version** 1.8

**Product Name** Cobalt Reference Standard Solution 1000 ± 10 mg/L as Co<sup>+2</sup>

**Revision Date** 10-Feb-2025

**Page** 16 / 16

|             |                                                                                     |
|-------------|-------------------------------------------------------------------------------------|
| IPCS INCHEM | IPCS INCHEM (International Programme on Chemical Safety)                            |
| IUCLID      | IUCLID (The International Uniform Chemical Information Database)                    |
| NITE        | Japan National Institute of Technology and Evaluation (NITE)                        |
| NIH         | NIH (National Institutes of Health)                                                 |
| NIOSH       | NIOSH (National Institute for Occupational Safety and Health)                       |
| LOLI        | LOLI (List of Lists - An International Chemical Regulatory Database)                |
| NDF         | no data                                                                             |
| NICNAS      | Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS) |
| NIOSH IDLH  | Immediately Dangerous to Life or Health                                             |
| OSHA        | Occupational Safety and Health Administration of the US Department of Labor         |
| PEEN        | PEEN (Pan European Ecological Network)                                              |
| RTECS       | RTECS (Registry of Toxic Effects of Chemical Substances)                            |
| SIDS        | SIDS (Screening Information Dataset) for High Volume Chemicals                      |
| SYKE        | The Finnish Environment Institute (SYKE)                                            |
| USDA        | USDA (United States Department of Agriculture)                                      |
| USDC        | USDC (United States Department of Commerce)                                         |
| WHO         | WHO (World Health Organization)                                                     |

**Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

|      |                                 |         |                                                                                                                                                                                                                                                                                       |
|------|---------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TWA  | TWA (time-weighted average)     | STEL    | STEL (Short Term Exposure Limit)                                                                                                                                                                                                                                                      |
| MAC  | Maximum Allowable Concentration | Ceiling | Ceiling Limit Value                                                                                                                                                                                                                                                                   |
| X    | Listed                          | Vacated | These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations. |
| SKN* | Skin designation                | SKN+    | Skin sensitization                                                                                                                                                                                                                                                                    |
| RSP+ | Respiratory sensitization       | **      | Hazard Designation                                                                                                                                                                                                                                                                    |
| C    | Carcinogen                      | R       | Reproductive toxicant                                                                                                                                                                                                                                                                 |
| M    | mutagen                         |         |                                                                                                                                                                                                                                                                                       |

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**Revision Note** SDS sections updated  
2

**Disclaimer**

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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**End of Safety Data Sheet**