

SAFETY DATA SHEET

Version 8.19
Revision Date 03/02/2024
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : ICP multi-element standard solution IV
Certipur®

Product Number : 1.11355
Catalogue No. : 111355
Brand : Millipore

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

Identified uses : Reagent for analysis

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-
527-3887 CHEMTREC (International) 24
Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Corrosive to Metals (Category 1), H290
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Respiratory sensitization (Category 1), H334
Skin sensitization (Category 1), H317
Germ cell mutagenicity (Category 1B), H340
Carcinogenicity (Category 1A), H350
Carcinogenicity, Inhalation (Category 1B), H350
Reproductive toxicity (Category 1A), H360
Specific target organ toxicity - repeated exposure (Category 2), H373

Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

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. |
| H340 | May cause genetic defects. |
| H350 | May cause cancer. |
| H350 | May cause cancer by inhalation. |
| H360 | May damage fertility or the unborn child. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H411 | Toxic to aquatic life with long lasting effects. |

Precautionary Statements

| | |
|---------------------------|--|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P234 | Keep only in original container. |
| P260 | Do not breathe mist or vapors. |
| P264 | Wash skin thoroughly after handling. |
| P272 | Contaminated work clothing must not be allowed out of the workplace. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P285 | In case of inadequate ventilation wear respiratory protection. |
| P301 + P330 + P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. |
| P304 + P340 + P310 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. |
| P305 + P351 + P338 + P310 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor. |
| P308 + P313 | IF exposed or concerned: Get medical advice/ attention. |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice/ attention. |
| P342 + P311 | If experiencing respiratory symptoms: Call a POISON CENTER/ doctor. |
| P363 | Wash contaminated clothing before reuse. |
| P390 | Absorb spillage to prevent material damage. |

| | |
|------|--|
| P391 | Collect spillage. |
| P405 | Store locked up. |
| P406 | Store in corrosive resistant container with a resistant inner liner. |
| P501 | Dispose of contents/ container to an approved waste disposal plant. |

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Corrosive to the respiratory tract.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

| Component | Classification | Concentration |
|---|--|----------------|
| nitric acid | | |
| CAS-No. 7697-37-2 EC-No. 231-714-2 Index-No. 007-004-00-1 Registration number 01-2119487297-23-XXXX | Ox. Liq. 3; Met. Corr. 1; Acute Tox. 3; Skin Corr. 1A; Eye Dam. 1; H272, H290, H331, H314, H318 Concentration limits: >= 1 %: Met. Corr. 1, H290; >= 65 %: Ox. Liq. 3, H272; >= 20 %: Skin Corr. 1A, H314; 5 - < 20 %: Skin Corr. 1B, H314; >= 3 %: Eye Dam. 1, H318; 1 - < 3 %: Eye Irrit. 2, H319; 1 - < 5 %: Skin Irrit. 2, H315; | >= 5 - < 10 % |
| boric acid | | |
| CAS-No. 10043-35-3 EC-No. 233-139-2 Index-No. 005-007-00-2 Registration number 01-2119486683-25-XXXX | Repr. 1B; Aquatic Acute 3; H360, H402 | >= 0.1 - < 1 % |
| nickel(II) nitrate | | |
| CAS-No. 13138-45-9 EC-No. 236-068-5 | Ox. Sol. 2; Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Resp. Sens. 1; Skin Sens. 1; Muta. 2; Carc. 1A; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H272, H302, H332, H315, H318, H334, H317, H341, H350i, H360, H372, H400, H410 Concentration limits: >= 1 %: STOT RE 1, | >= 0.1 - < 1 % |

| | | | |
|---------------------------|-----------------------|--|----------------|
| | | H372; 0.1 - < 1 %: STOT RE 2, H373; >= 20 %: Skin Irrit. 2, H315; >= 0.01 %: Skin Sens. 1, H317; | |
| Cobalt(II) nitrate | | | |
| CAS-No. | 10141-05-6 | Ox. Sol. 2; Acute Tox. 4; Eye Dam. 1; Resp. Sens. 1; Skin Sens. 1; Muta. 2; Carc. 1B; Repr. 1B; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H272, H302, H318, H334, H317, H341, H350, H360, H373, H400, H410 Concentration limits: >= 0.01 %: Carc. 1B, H350i; M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 1 | >= 0.1 - < 1 % |
| EC-No. | 233-402-1 | | |
| Index-No. | 027-009-00-2 | | |
| Copper(II) nitrate | | | |
| CAS-No. | 3251-23-8 | Ox. Sol. 2; Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 1; Aquatic Chronic 1; H272, H314, H318, H400, H410 M-Factor - Aquatic Acute: 10 M-Factor - Aquatic Chronic: 1 | >= 0.1 - < 1 % |
| EC-No. | 221-838-5 | | |
| Registration number | 01-2119969290-34-XXXX | | |
| Zinc nitrate | | | |
| CAS-No. | 7779-88-6 | Ox. Sol. 2; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; Aquatic Acute 1; Aquatic Chronic 2; H272, H302, H315, H319, H335, H400, H411 M-Factor - Aquatic Acute: 1 | >= 0.1 - < 1 % |
| EC-No. | 231-943-8 | | |
| Cadmium nitrate | | | |
| CAS-No. | 10325-94-7 | Acute Tox. 3; Acute Tox. 2; Acute Tox. 4; Muta. 1B; Carc. 1B; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H301, H330, H312, H340, H350, H360, H372, H400, H410 M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 1 | >= 0.1 - < 1 % |
| EC-No. | 233-710-6 | | |
| Index-No. | 048-001-00-5 | | |

| Barium nitrate | | | |
|----------------------------|-----------------------|---|---------------|
| CAS-No. | 10022-31-8 | Ox. Sol. 2; Acute Tox. 3; | ≥ 0.1 - < 1 % |
| EC-No. | 233-020-5 | Acute Tox. 4; Eye Irrit. | |
| Index-No. | 056-002-00-7 | 2A; H272, H301, H332, H319 | |
| Lead(II) nitrate | | | |
| CAS-No. | 10099-74-8 | Acute Tox. 4; Eye Dam. 1; | ≥ 0.1 - < 1 % |
| EC-No. | 233-245-9 | Skin Sens. 1B; Carc. 2; | |
| Index-No. | 082-001-00-6 | Repr. 1A; STOT RE 1; | |
| Registration number | 01-2119492475-28-XXXX | Aquatic Acute 1; Aquatic Chronic 1; H302, H332, H318, H317, H351, H360, H372, H400, H410 | |
| | | M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 1 | |
| Silver nitrate | | | |
| CAS-No. | 7761-88-8 | Ox. Sol. 2; Met. Corr. 1; | ≥ 0.1 - < 1 % |
| EC-No. | 231-853-9 | Skin Corr. 1A; Eye Dam. 1; | |
| Index-No. | 047-001-00-2 | Repr. 1B; Aquatic Acute 1; | |
| Registration number | 01-2119513705-43-XXXX | Aquatic Chronic 1; H272, H290, H314, H318, H360, H400, H410 | |
| | | Concentration limits: ≥ 1 %: Met. Corr. 1, H290; 68 %: Ox. Sol. 2, H272; M-Factor - Aquatic Acute: 1,000 - Aquatic Chronic: 100 | |
| Thallium(I) nitrate | | | |
| CAS-No. | 10102-45-1 | Acute Tox. 2; STOT RE 2; | ≥ 0.1 - < 1 % |
| EC-No. | 233-273-1 | Aquatic Chronic 2; H300, | |
| Index-No. | 081-002-00-9 | H330, H373, H411 | |

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Nitrogen oxides (NO_x)

Not combustible.

Fire may cause evolution of:

nitrous gases, nitrogen oxides

Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

No metal containers.

Protected from light. Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Recommended storage temperature see product label.

Storage class

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

| Component | CAS-No. | Value | Control parameters | Basis | |
|--------------------|------------|---|--|---|--|
| nitric acid | 7697-37-2 | TWA | 2 ppm | USA. ACGIH Threshold Limit Values (TLV) | |
| | | STEL | 4 ppm | USA. ACGIH Threshold Limit Values (TLV) | |
| | | ST | 4 ppm 10 mg/m ³ | USA. NIOSH Recommended Exposure Limits | |
| | | TWA | 2 ppm 5 mg/m ³ | USA. NIOSH Recommended Exposure Limits | |
| | | TWA | 2 ppm 5 mg/m ³ | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants | |
| | | PEL | 2 ppm 5 mg/m ³ | California permissible exposure limits for chemical contaminants (Title 8, Article 107) | |
| | | STEL | 4 ppm 10 mg/m ³ | California permissible exposure limits for chemical contaminants (Title 8, Article 107) | |
| boric acid | 10043-35-3 | TWA | 2 mg/m ³ | USA. ACGIH Threshold Limit Values (TLV) | |
| | Remarks | Not classifiable as a human carcinogen | | | |
| | | STEL | 6 mg/m ³ | USA. ACGIH Threshold Limit Values (TLV) | |
| | | Not classifiable as a human carcinogen | | | |
| nickel(II) nitrate | 13138-45-9 | TWA | 1 mg/m ³ | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants | |
| | | TWA | 0.1 mg/m ³ | USA. ACGIH Threshold Limit Values (TLV) | |
| | | | Not classifiable as a human carcinogen | | |
| | | TWA | 0.015 mg/m ³ | USA. NIOSH Recommended Exposure Limits | |
| | | Potential Occupational Carcinogen | | | |
| | | PEL | 0.05 mg/m ³ | California permissible exposure limits for chemical contaminants (Title 8, Article 107) | |
| Cobalt(II) nitrate | 10141-05-6 | TWA | 0.02 mg/m ³ | USA. ACGIH Threshold Limit Values (TLV) | |
| | | Dermal Sensitization Respiratory sensitization Confirmed animal carcinogen with unknown relevance to humans | | | |

| | | | | |
|--------------------|------------|--|-------------|---|
| Copper(II) nitrate | 3251-23-8 | TWA | 1 mg/m3 | USA. NIOSH Recommended Exposure Limits |
| | | PEL | 1 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| Cadmium nitrate | 10325-94-7 | TWA | 0.01 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | | Suspected human carcinogen | | |
| | | TWA | 0.02 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | | Suspected human carcinogen | | |
| | | PEL | 0.005 mg/m3 | OSHA Specifically Regulated Chemicals/Carcinogens |
| | | OSHA specifically regulated carcinogen | | |
| | | Potential Occupational Carcinogen | | |
| | | PEL | 0.005 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| Barium nitrate | 10022-31-8 | TWA | 0.5 mg/m3 | USA. NIOSH Recommended Exposure Limits |
| | | TWA | 0.5 mg/m3 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | | TWA | 0.5 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | | Not classifiable as a human carcinogen | | |
| | | PEL | 0.5 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| Lead(II) nitrate | 10099-74-8 | TWA | 0.05 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | | Confirmed animal carcinogen with unknown relevance to humans | | |
| | | PEL | 0.05 mg/m3 | OSHA Specifically Regulated Chemicals/Carcinogens |
| | | OSHA specifically regulated carcinogen | | |

| | | | | |
|---------------------|------------|---------------------------------|------------------------|---|
| | | TWA | 0.05 mg/m ³ | USA. NIOSH Recommended Exposure Limits |
| | | PEL | 0.05 mg/m ³ | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| Silver nitrate | 7761-88-8 | TWA | 0.01 mg/m ³ | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | | TWA | 0.01 mg/m ³ | USA. ACGIH Threshold Limit Values (TLV) |
| | | TWA | 0.01 mg/m ³ | USA. NIOSH Recommended Exposure Limits |
| | | PEL | 0.01 mg/m ³ | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| Thallium(I) nitrate | 10102-45-1 | TWA | 0.1 mg/m ³ | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | | Skin designation | | |
| | | TWA | 0.02 mg/m ³ | USA. ACGIH Threshold Limit Values (TLV) |
| | | Danger of cutaneous absorption | | |
| | | TWA | 0.1 mg/m ³ | USA. NIOSH Recommended Exposure Limits |
| | | Potential for dermal absorption | | |
| | | PEL | 0.1 mg/m ³ | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| | | Skin | | |

Biological occupational exposure limits

| Component | CAS-No. | Parameters | Value | Biological specimen | Basis |
|--------------------|------------|---------------------------------|---------|---------------------|---|
| nickel(II) nitrate | 13138-45-9 | Nickel | 5 µg/l | Urine | ACGIH - Biological Exposure Indices (BEI) |
| | Remarks | End of shift at end of workweek | | | |
| | | Nickel | 30 µg/l | Urine | ACGIH - Biological Exposure Indices (BEI) |
| | | End of shift at end of workweek | | | |
| Cobalt(II) nitrate | 10141-05-6 | Cobalt | 15 µg/l | Urine | ACGIH - Biological Exposure Indices (BEI) |
| | | End of shift at end of workweek | | | |

| | | | | | |
|------------------|------------|---------------------------------|---------------------|----------|--|
| | | Cobalt | | Urine | ACGIH - Biological Exposure Indices (BEI) |
| | | End of shift at end of workweek | | | |
| Cadmium nitrate | 10325-94-7 | cadmium | 5 µg/l | In blood | ACGIH - Biological Exposure Indices (BEI) |
| | | Not critical | | | |
| | | cadmium | 5µg/g creatinine | Urine | ACGIH - Biological Exposure Indices (BEI) |
| | | Not critical | | | |
| Lead(II) nitrate | 10099-74-8 | Lead | 200 µg/l | In blood | ACGIH - Biological Exposure Indices (BEI) |
| | | Not critical | | | |

8.2 Exposure controls

Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Latex gloves

Minimum layer thickness: 0.60 mm

Break through time: 480 min

Material tested: Lapren® (KCL 706 / Aldrich Z677558, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.40 mm

Break through time: 240 min
Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

Body Protection

Acid-resistant protective clothing

Respiratory protection

Recommended Filter type: filter E-(P2)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|---|
| a) Appearance | Form: liquid Color: blue |
| b) Odor | weak |
| c) Odor Threshold | No data available |
| d) pH | ca.1 at 20 °C (68 °F) |
| e) Melting point/freezing point | No data available |
| f) Initial boiling point and boiling range | No data available |
| g) Flash point | ()Not applicable |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapor pressure | No data available |
| l) Vapor density | No data available |
| m) Density | 1.09 g/cm ³ at 20 °C (68 °F) |
| Relative density | No data available |
| n) Water solubility | soluble |
| o) Partition coefficient: n-octanol/water | No data available |

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- | | |
|------------------------------|------------------------------|
| p) Autoignition temperature | Not applicable |
| q) Decomposition temperature | No data available |
| r) Viscosity | No data available |
| s) Explosive properties | Not classified as explosive. |
| t) Oxidizing properties | none |

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Oxidizing agents

10.2 Chemical stability

Sensitivity to light

heat-sensitive

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Risk of explosion with:

Risk of ignition or formation of inflammable gases or vapours with:

Metals

Alkali metals

Alkaline earth metals

metal alloys

metallic oxides

Alcohols

Aldehydes

Amines

anhydrides

anilines

Ammonia

alkalines

hydrides

halogen compounds

nonmetallic oxides

nonmetallic halides

nonmetallic hydrogen compounds

nonmetals

phosphides

nitrides

lithium silicide

hydrogen peroxide

organic combustible substances

oxidisable substances

organic solvent

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Ketones
Nitriles
organic nitro compounds
hydrazine and derivatives
acetylidene
Acids
Fluorine
Generates dangerous gases or fumes in contact with:
Copper
Mercury
Violent reactions possible with:
The generally known reaction partners of water.

10.4 Conditions to avoid

Strong heating.
Moisture.
no information available

10.5 Incompatible materials

Cellulose, Metals
Contact with metals may lead to the formation of nitrous gases and hydrogen.
Metals

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity

Acute toxicity estimate Oral - 3,675 mg/kg
(Calculation method)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Acute toxicity estimate Inhalation - 4 h - > 20 mg/l - vapor (Calculation method)

Symptoms: Possible symptoms: , mucosal irritations, Cough, Shortness of breath, Possible damages: , damage of respiratory tract

Dermal: No data available

Skin corrosion/irritation

Remarks: Mixture causes burns.

Serious eye damage/eye irritation

Remarks: Mixture causes serious eye damage.

Risk of blindness!

Respiratory or skin sensitization

Mixture may cause allergy or asthma symptoms or breathing difficulties if inhaled. Mixture may cause an allergic skin reaction.

Germ cell mutagenicity

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Possible mutagen

Carcinogenicity

Possible human carcinogen

Possible carcinogen.

IARC: 1 - Group 1: Carcinogenic to humans (nickel(II) nitrate)

IARC: 1 - Group 1: Carcinogenic to humans (Cadmium nitrate)

IARC: 2A - Group 2A: Probably carcinogenic to humans (Cobalt(II) nitrate)

NTP: Known - Known to be human carcinogen (nickel(II) nitrate)

NTP: Known - Known to be human carcinogen
The reference note has been added by TD based on the background information of the NTP. (Cadmium nitrate)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (Cobalt(II) nitrate)

OSHA: 1910.1027 (Cadmium nitrate)

OSHA specifically regulated carcinogen (Cadmium nitrate)

Reproductive toxicity

May harm the unborn child.

May impair fertility.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Mixture may cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available

11.2 Additional Information

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

Components

nitric acid

Acute toxicity

Oral: No data available

Acute toxicity estimate Inhalation - 4 h - 2.65 mg/l - vapor
(Expert judgment)

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Causes severe burns.

Remarks: (IUCLID)

Remarks: Causes poorly healing wounds.

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes burns.

Remarks: (IUCLID)

Remarks: Causes serious eye damage.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

boric acid

Acute toxicity

LD50 Oral - Rat - male and female - 3,450 mg/kg

Remarks: (ECHA)

LC50 Inhalation - Rat - male and female - 4 h - > 2.12 mg/l - dust/mist
(OECD Test Guideline 403)

LD50 Dermal - Rabbit - male and female - > 2,000 mg/kg

Remarks: (ECHA)

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 24 h

Remarks: (ECHA)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation - 24 h

(OECD Test Guideline 405)

Respiratory or skin sensitization

Buehler Test - Guinea pig

Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Result: negative
Remarks: (ECHA)
Test Type: Ames test
Test system: S. typhimurium
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Result: negative
Test Type: Mutagenicity (mammal cell test):
Test system: Chinese hamster ovary cells
Result: negative
Method: OECD Test Guideline 474
Species: Mouse - male and female
Result: negative

Carcinogenicity

No data available

Reproductive toxicity

May damage fertility.
May damage the unborn child.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Aspiration hazard

No data available

nickel(II) nitrate

Acute toxicity

LD50 Oral - Rat - male - 325 mg/kg
(OECD Test Guideline 401)
LC50 Inhalation - Rat - male and female - 4 h - 1.3 - 4.5 mg/l - dust/mist
(OECD Test Guideline 403)
Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit
Result: Irritating to skin. - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit
Result: Causes serious eye damage.

(OECD Test Guideline 405)

Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: positive

May cause an allergic skin reaction.

(Maximization Test)

Germ cell mutagenicity

In vitro tests showed mutagenic effects which were not observed with in vivo test.

Carcinogenicity

Human carcinogen.

Reproductive toxicity

Presumed human reproductive toxicant

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available

Cobalt(II) nitrate

Acute toxicity

LD50 Oral - Rat - male and female - 978 mg/kg

(OECD Test Guideline 401)

Remarks: (in analogy to similar compounds)

The value is given in analogy to the following substances: Cobaltous nitrate, hexahydrate

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye damage.

(OECD Test Guideline 405)

Respiratory or skin sensitization

May cause allergic skin reaction. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Germ cell mutagenicity

Suspected of causing genetic defects.

Carcinogenicity

May cause cancer by inhalation.

Reproductive toxicity

May damage the unborn child.

May damage fertility.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Inhalation - May cause damage to organs through prolonged or repeated exposure.

- Lungs

Aspiration hazard

No data available

Copper(II) nitrate**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Skin - In vitro study

Result: Corrosive

(OECD Test Guideline 431)

Serious eye damage/eye irritation

Remarks: Causes serious eye damage.

Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 486

Species: Rat - male

Result: negative

Method: Regulation (EC) No. 440/2008, Annex, B.12

Species: Mouse - male and female

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Zinc nitrate**Acute toxicity**

LD50 Oral - Rat - female - 2,000 mg/kg
(OECD Test Guideline 423)

Remarks: (for the hexahydrate)

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Skin - EPISKIN Human Skin Model Test
(OECD Test Guideline 439)

Remarks: (for the hexahydrate)

Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Cadmium nitrate**Acute toxicity**

Acute toxicity estimate Oral - Not tested on animals - 100.1 mg/kg
(Expert judgment)

Acute toxicity estimate Inhalation - Not tested on animals - 0.051 mg/l - dust/mist
(Expert judgment)

Acute toxicity estimate Dermal - Not tested on animals - 1,100.1 mg/kg
(Expert judgment)

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

May cause genetic defects.

In vivo tests showed mutagenic effects

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Cadmium chloride

Test Type: comet assay

Test system: mammalian cells

Result: positive

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: cadmium sulphate

Test Type: In vitro mammalian cell gene mutation test

Test system: mammalian cells

Result: positive

Remarks: (in analogy to similar products)

Carcinogenicity

Carcinogenicity - May cause cancer.

Presumed to have carcinogenic potential for humans

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Chronic exposure to cadmium may cause lung and prostate cancer. Presumed to have carcinogenic potential for humans

NTP: The reference note has been added by TD based on the background information of the NTP.

OSHA: 1910.1027

Reproductive toxicity

May damage the unborn child.

May damage fertility.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Oral - Causes damage to organs through prolonged or repeated exposure.

- Kidney, Bone

Aspiration hazard

No data available

Barium nitrate

Acute toxicity

LD50 Oral - Rat - female - 50 - 300 mg/kg

(OECD Test Guideline 423)

Acute toxicity estimate Inhalation - 1.6 mg/l - dust/mist

(Expert judgment)

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: irritating

(OECD Test Guideline 405)

Respiratory or skin sensitization

Sensitisation test: - Mouse

Result: Does not cause skin sensitization.

(OECD Test Guideline 429)

Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Lead(II) nitrate

Acute toxicity

Oral: No data available

Inhalation: No data available

LD50 Dermal - Rat - male and female - > 2,000 mg/kg

(OECD Test Guideline 402)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Lead(II) oxide red

No data available

Skin corrosion/irritation

Skin - In vitro study

Result: non-corrosive

(OECD Test Guideline 431)

Skin - In vitro study

Result: No skin irritation - 42 min

(OECD Test Guideline 439)

Serious eye damage/eye irritation

Eyes - Bovine cornea

Result: Causes serious eye damage. - 4 h

(OECD Test Guideline 437)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse

Result: positive

(OECD Test Guideline 429)

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Remarks: (in analogy to similar products)

(ECHA)

Species: Rat - female - Red blood cells (erythrocytes)

Result: positive

Remarks: (in analogy to similar products)

(ECHA)

The value is given in analogy to the following substances: lead(II) acetate

Species: Monkey - male - lymphocyte

Result: positive

Remarks: (in analogy to similar products)

(ECHA)

Species: Mouse - male - Liver cells

Result: negative

Remarks: (in analogy to similar products)

(ECHA)

Carcinogenicity

Suspected of causing cancer.

NTP:

The reference note has been added by TD based on the background information of the NTP.

Reproductive toxicity

May damage the unborn child. Positive evidence from human epidemiological studies.

Suspected of damaging fertility.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

- Blood, Central nervous system, Immune system, Kidney

Aspiration hazard

No data available

Silver nitrate**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Skin - reconstructed human epidermis (RhE)

Result: Causes severe burns. - 3 - 60 min

(OECD Test Guideline 431)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye damage.

Remarks: (ECHA)

Remarks: Risk of permanent damage due to staining of the cornea.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Test Type: Micronucleus test

Test system: Human lymphocytes

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Result: Positive results were obtained in some in vitro tests.

Method: OECD Test Guideline 474

Species: Rat - male and female

Result: Positive results were obtained in some in vivo tests.

Carcinogenicity

No data available

Reproductive toxicity

May damage the unborn child.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure**Aspiration hazard**

No data available

Thallium(I) nitrate

Acute toxicity

Acute toxicity estimate Oral - 5.1 mg/kg

(Expert judgment)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Acute toxicity estimate Inhalation - 4 h - 0.051 mg/l - dust/mist

(Expert judgment)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Aspiration hazard

No data available

SECTION 12: Ecological information

12.1 Toxicity

Mixture

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

Hazard for drinking water supplies.

Caustic even in diluted form.

Harmful effect due to pH shift.

Discharge into the environment must be avoided.

Components

nitric acid

No data available

boric acid

| | |
|---|--|
| Toxicity to fish | static test LC50 - Pimephales promelas (fathead minnow) - 79.7 mg/l - 96 h (US-EPA) |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia magna (Water flea) - 133 mg/l - 48 h Remarks: (ECOTOX Database) |
| Toxicity to algae | static test EC50 - Pseudokirchneriella subcapitata (green algae) - 52.4 mg/l - 74.5 h (OECD Test Guideline 201) |

nickel(II) nitrate

| | |
|---|---|
| Toxicity to fish | semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 15.3 mg/l - 96 h Remarks: (ECHA) |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Ceriodaphnia dubia (water flea) - 0.0744 mg/l - 48 h Remarks: (ECHA) |
| Toxicity to algae | static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 0.0815 - 0.148 mg/l - 72 h (OECD Test Guideline 201) |
| Toxicity to bacteria | EC50 - Sludge Treatment - 33 mg/l - 30 min (ISO 8192) |
| Toxicity to fish(Chronic toxicity) | flow-through test NOEC - Pimephales promelas (fathead minnow) - 0.057 mg/l - 32 d Remarks: (ECHA) |

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Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity) semi-static test NOEC - Ceriodaphnia dubia (water flea) - 0.0053 - 0.0153 mg/l - 7 d
Remarks: (ECHA)

Cobalt(II) nitrate

Toxicity to fish semi-static test LC50 - Pimephales promelas (fathead minnow) - 1.866 mg/l - 96 h
(US-EPA)

Toxicity to daphnia and other aquatic invertebrates static test LC50 - Ceriodaphnia dubia (water flea) - 0.39 mg/l - 48 h
(US-EPA)

Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata - 0.095 mg/l - 72 h
(OECD Test Guideline 201)

Toxicity to bacteria static test EC50 - activated sludge - 120 mg/l - 30 min
(OECD Test Guideline 209)

Toxicity to fish(Chronic toxicity) semi-static test NOEC - Pimephales promelas (fathead minnow) - 0.9 mg/l - 7 d
(US-EPA)

Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity) semi-static test NOEC - Ceriodaphnia dubia (water flea) - 0.02 mg/l - 7 d
(US-EPA)

Copper(II) nitrate

Toxicity to fish flow-through test LC50 - Pimephales promelas (fathead minnow) - 0.19 mg/l - 96 h
Remarks: (ECHA)
The value is given in analogy to the following substances:
Copper(II) nitrate trihydrate

Toxicity to daphnia and other aquatic invertebrates static test - Daphnia magna (Water flea)

Zinc nitrate

No data available

Toxicity to algae IC50 - Selenastrum capricornutum (green algae) - 0.395 mg/l
Remarks: (ECHA)

NOEC - Selenastrum capricornutum (green algae) - 0.0552 mg/l
Remarks: (ECHA)

Cadmium nitrate

Toxicity to fish

LC50 - Pimephales promelas (fathead minnow) - 0.0132 mg/l - 96 h

Remarks: (ECOTOX Database)
(referred to the cation)flow-through test LC50 - Ictalurus punctatus - 4.48 mg/l - 96 h
Remarks: (ECHA)Toxicity to daphnia
and other aquatic
invertebratesLC50 - Daphnia magna (Water flea) - 0.023 mg/l - 48 h
Remarks: (referred to the cation)
(ECOTOX Database)Toxicity to
fish(Chronic toxicity)flow-through test NOEC - Pimephales promelas (fathead
minnow) - 0.014 mg/l - 32 d
Remarks: (referred to the cation)
(ECOTOX Database)**Barium nitrate**

No data available

Lead(II) nitrate

Toxicity to fish

static test LC50 - Oncorhynchus mykiss (rainbow trout) - 0.1
mg/l - 96 h
Remarks: (ECHA)Toxicity to daphnia
and other aquatic
invertebratesEC50 - Daphnia magna (Water flea) - 1.8 mg/l - 48 h
Remarks: (ECOTOX Database)

Toxicity to algae

EC50 - algae - 0.024 - 0.029 mg/l - 28 h
Remarks: (Lit.)Toxicity to
fish(Chronic toxicity)semi-static test NOEC - Pimephales promelas (fathead minnow)
- 1.337 mg/l - 7 d
Remarks: (ECHA)Toxicity to daphnia
and other aquatic
invertebrates(Chronic
toxicity)semi-static test NOEC - Ceriodaphnia dubia (water flea) -
0.0224 mg/l - 7 d
(US-EPA)**Silver nitrate**

Toxicity to fish

semi-static test LC50 - Pimephales promelas (fathead minnow)
- 0.0012 mg/l - 96 h
(US-EPA)

Toxicity to daphnia

semi-static test EC50 - Daphnia magna (Water flea) - 0.00022

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| | |
|---|---|
| and other aquatic invertebrates | mg/l - 48 h Remarks: (ECHA) |
| Toxicity to algae | static test ErC50 - Raphidocelis subcapitata (freshwater green alga) - 0.00252 mg/l - 72 h (OECD Test Guideline 201) static test EC10 - Raphidocelis subcapitata (freshwater green alga) - 0.00046 mg/l - 72 h (OECD Test Guideline 201) |
| Toxicity to fish(Chronic toxicity) | flow-through test NOEC - Pimephales promelas (fathead minnow) - 0.000351 mg/l - 34 d Remarks: (ECHA) |
| Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity) | semi-static test EC10 - Daphnia magna (Water flea) - 0.0027 mg/l - 21 d Remarks: (ECHA) |

Thallium(I) nitrate

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14: Transport information

DOT (US)

UN number: 3264 Class: 8 Packing group: II
 Proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (nitric acid, Cobaltous nitrate, hexahydrate)
 Reportable Quantity (RQ): 694 lbs
 Poison Inhalation Hazard: No

IMDG

UN number: 3264 Class: 8 Packing group: II EMS-No: F-A, S-B

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Proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Cobaltous nitrate, hexahydrate)

Marine pollutant : yes

IATA

UN number: 3264 Class: 8

Packing group: II

Proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (nitric acid, Cobaltous nitrate, hexahydrate)

SECTION 15: Regulatory information

SARA 302 Components

| | CAS-No. | Revision Date |
|-------------|-----------|---------------|
| nitric acid | 7697-37-2 | 2007-07-01 |

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

| | CAS-No. | Revision Date |
|--------------------|------------|---------------|
| nitric acid | 7697-37-2 | 2007-07-01 |
| Lithium nitrate | 7790-69-4 | 2007-03-01 |
| calcium nitrate | 10124-37-5 | 2007-03-01 |
| sodium nitrate | 7631-99-4 | 1993-04-24 |
| nickel(II) nitrate | 13138-45-9 | 1993-04-24 |
| Cobalt(II) nitrate | 10141-05-6 | 1993-04-24 |
| potassium nitrate | 7757-79-1 | 2007-03-01 |
| Strontium nitrate | 10042-76-9 | 2007-03-01 |
| Cadmium nitrate | 10325-94-7 | 2007-03-01 |
| Barium nitrate | 10022-31-8 | 1993-04-24 |
| Lead(II) nitrate | 10099-74-8 | 1993-02-16 |

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| | | |
|----------------|-----------|------------|
| Silver nitrate | 7761-88-8 | 1993-02-16 |
|----------------|-----------|------------|

Massachusetts Right To Know Components

| | CAS-No. | Revision Date |
|-------------|-----------|---------------|
| water | 7732-18-5 | |
| nitric acid | 7697-37-2 | 2007-07-01 |

Pennsylvania Right To Know Components

| | CAS-No. | Revision Date |
|-----------------------|------------|---------------|
| nitric acid | 7697-37-2 | 2007-07-01 |
| Chromium(III) nitrate | 13548-38-4 | 2007-03-01 |
| iron(III) nitrate | 10421-48-4 | 1993-02-16 |
| Manganese(II) nitrate | 10377-66-9 | 1994-07-31 |
| nickel(II) nitrate | 13138-45-9 | 1993-04-24 |
| Copper(II) nitrate | 3251-23-8 | 1993-02-16 |
| Zinc nitrate | 7779-88-6 | 2007-03-01 |
| Cadmium nitrate | 10325-94-7 | 2007-03-01 |
| Barium nitrate | 10022-31-8 | 1993-04-24 |
| Lead(II) nitrate | 10099-74-8 | 1993-02-16 |
| Silver nitrate | 7761-88-8 | 1993-02-16 |
| Thallium(I) nitrate | 10102-45-1 | 1993-04-24 |

California Prop. 65 Components

| | | |
|---|-----------------------|-----------------------------|
| , which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov | CAS-No. 13138-45-9 | Revision Date 2007-09-28 |
|---|-----------------------|-----------------------------|

SECTION 16: Other information

Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture

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