



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
OSHA HCS2012

Revision date 08-Feb-2022

Revision Number 1

## 1. Identification

### Product identifier

**Product Name** Co, Li, Mo, Ni, Se, Sn, Sr @1000µg/mL in 4% HNO<sub>3</sub>; 0.7% HF

### Other means of identification

**Product Code(s)** VHG-Z22-W000060

**Synonyms** None

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

**Recommended use** Laboratory use

**Restrictions on use** No information available

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

#### Supplier Address

VHG  
LGC Standards  
276 Abby Road  
Manchester, NH 03103  
UNITED STATES OF AMERICA

Tel :+1 (603) 622-7660  
Fax : +1 (603) 622-5180  
Email : lgcusa@lgcgroup.com

Web : lgcstandards.com

**E-mail** sds-request@lgcgroup.com

### Emergency telephone number

#### **Emergency Telephone**

For Hazardous Materials or Dangerous Goods Incident  
Spill, Leak, Fire Exposure, or Accident  
Call CHEMTREC:  
USA & Canada 1-800-424-9300  
Rest of the world +1 703-741-5970

## 2. Hazard(s) identification

### Classification



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Classified according to OSHA.

|                                   |             |
|-----------------------------------|-------------|
| Acute toxicity - Oral             | Category 4  |
| Acute toxicity - Dermal           | Category 3  |
| Skin corrosion/irritation         | Category 2  |
| Serious eye damage/eye irritation | Category 1  |
| Respiratory sensitization         | Category 1  |
| Skin sensitization                | Category 1  |
| Carcinogenicity                   | Category 1B |
| Reproductive toxicity             | Category 1B |
| Corrosive to metals               | Category 1  |

## Hazards not otherwise classified (HNOC)

Not applicable

## Label elements

### **Danger**

#### Hazard statements

Classified according to OSHA.  
Harmful if swallowed  
Toxic in contact with skin  
Causes skin irritation  
Causes serious eye damage  
May cause allergy or asthma symptoms or breathing difficulties if inhaled  
May cause an allergic skin reaction  
May cause cancer  
May damage fertility or the unborn child  
May be corrosive to metals



### **Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wear protective gloves/protective clothing/eye protection/face protection  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Avoid breathing dust/fume/gas/mist/vapors/spray



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In case of inadequate ventilation wear respiratory protection  
Contaminated work clothing must not be allowed out of the workplace  
Keep only in original container

## Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention  
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 or doctor  
IF ON SKIN: Wash with plenty of water and soap  
Call a POISON CENTER or doctor if you feel unwell  
Take off immediately all contaminated clothing and wash it before reuse  
If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse  
IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing  
If experiencing respiratory symptoms: Call a POISON CENTER or doctor  
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
Rinse mouth  
Absorb spillage to prevent material damage

## Precautionary Statements - Storage

Store locked up  
Store in corrosive resistant/ .? container with a resistant inner liner

## Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

## Other information

No information available.

## 3. Composition/information on ingredients

### Substance

Not applicable.

### Mixture

**Chemical nature** aqueous solution.

| Chemical name     | CAS No     | Weight-% | Trade secret |
|-------------------|------------|----------|--------------|
| Nitric Acid       | 7697-37-2  | 3 - <5   | *            |
| hydrofluoric acid | 7664-39-3  | 0.1 - 1  | *            |
| Strontium nitrate | 10042-76-9 | 0.1 - 1  | *            |
| Selenium          | 7782-49-2  | 0.1 - 1  | *            |
| nickel            | 7440-02-0  | 0.1 - 1  | *            |
| Cobalt            | 7440-48-4  | 0.1 - 1  | *            |



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## 4. First-aid measures

### Description of first aid measures

|                                    |                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General advice                     | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. IF exposed or concerned: Get medical advice/attention.                                                                                                                                                                                                         |
| Inhalation                         | Remove to fresh air. May cause allergic respiratory reaction. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Get immediate medical advice/attention.                                                                                |
| Eye contact                        | 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.                                                                                                 |
| Skin contact                       | Get immediate medical advice/attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction.                                                                                                                                                                               |
| Ingestion                          | Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention. May produce an allergic reaction.                                                                                                                                                                                            |
| Self-protection of the first aider | 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. Use personal protective equipment as required. See section 8 for more information. |

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

|          |                                                                                                                                                  |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Symptoms | 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

|                    |                                                                        |
|--------------------|------------------------------------------------------------------------|
| Note to physicians | May cause sensitization in susceptible persons. Treat symptomatically. |
|--------------------|------------------------------------------------------------------------|

## 5. Fire-fighting measures

|                                            |                                                                                                                                       |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Suitable Extinguishing Media               | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.                               |
| Large Fire                                 | CAUTION: Use of water spray when fighting fire may be inefficient.                                                                    |
| Unsuitable extinguishing media             | Do not scatter spilled material with high pressure water streams.                                                                     |
| Specific hazards arising from the chemical | Product is or contains a sensitizer. May cause sensitization by inhalation and skin contact. May cause sensitization by skin contact. |
| Explosion data                             |                                                                                                                                       |



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Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

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

## 6. Accidental release measures

### 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. 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.

### 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** Pick up and transfer to properly labeled containers.

## 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. Ensure adequate ventilation. Take off contaminated clothing and wash before reuse. Do not eat, drink or smoke when using this product. Provide extract ventilation to points where emissions occur. In case of insufficient ventilation, wear suitable respiratory equipment. 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. Please refer to the manufacturer's certificate for specific storage and transport temperature conditions. Store only in the original receptacle unless other advice is given on the CoA.

## 8. Exposure controls/personal protection



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## Control parameters

### Exposure Limits

The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

| Chemical name                  | ACGIH TLV                                                                                                   | OSHA PEL                                                                                                                                                              | NIOSH                                                                                                                    |
|--------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Nitric Acid<br>7697-37-2       | STEL: 4 ppm<br>TWA: 2 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>                      |
| hydrofluoric acid<br>7664-39-3 | TWA: 0.5 ppm F<br>S*<br>Ceiling: 2 ppm F                                                                    | TWA: 3 ppm F<br>(vacated) TWA: 3 ppm F<br>(vacated) STEL: 6 ppm F                                                                                                     | IDLH: 30 ppm<br>Ceiling: 6 ppm 15 min<br>Ceiling: 5 mg/m <sup>3</sup> 15 min<br>TWA: 3 ppm<br>TWA: 2.5 mg/m <sup>3</sup> |
| Selenium<br>7782-49-2          | TWA: 0.2 mg/m <sup>3</sup>                                                                                  | (vacated) TWA: 0.2 mg/m <sup>3</sup>                                                                                                                                  | IDLH: 1 mg/m <sup>3</sup><br>TWA: 0.2 mg/m <sup>3</sup>                                                                  |
| nickel<br>7440-02-0            | TWA: 1.5 mg/m <sup>3</sup> inhalable<br>particulate matter                                                  | TWA: 1 mg/m <sup>3</sup><br>(vacated) TWA: 1 mg/m <sup>3</sup>                                                                                                        | IDLH: 10 mg/m <sup>3</sup><br>TWA: 0.015 mg/m <sup>3</sup>                                                               |
| Cobalt<br>7440-48-4            | dermal sensitizer; respiratory<br>sensitizer<br>TWA: 0.02 mg/m <sup>3</sup> inhalable<br>particulate matter | TWA: 0.1 mg/m <sup>3</sup> dust and<br>fume<br>(vacated) TWA: 0.05 mg/m <sup>3</sup><br>dust and fume                                                                 | IDLH: 20 mg/m <sup>3</sup> dust and fume<br>TWA: 0.05 mg/m <sup>3</sup> dust and<br>fume                                 |

## Biological occupational exposure limits

| Chemical name                  | ACGIH                                                                                                         |
|--------------------------------|---------------------------------------------------------------------------------------------------------------|
| hydrofluoric acid<br>7664-39-3 | 3 mg/g creatinine - urine (Fluoride) - prior to shift<br>10 mg/g creatinine - urine (Fluoride) - end of shift |
| nickel<br>7440-02-0            | 5 µg/L - urine (Nickel) - post-shift at end of workweek                                                       |
| Cobalt<br>7440-48-4            | 15 µg/L - urine (Cobalt) - end of shift at end of workweek                                                    |

## Appropriate engineering controls

### Engineering controls

Showers  
Eyewash stations  
Ventilation systems.

## Individual protection measures, such as personal protective equipment



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|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye/face protection</b>             | Tight sealing safety goggles. Avoid contact with eyes. Wear safety glasses with side shields (or goggles).                                                                                                                                                                                                                                                                                                              |
| <b>Hand protection</b>                 | Wear suitable gloves. Impervious gloves. Wear protective Neoprene™ gloves. The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374.                                                                                                                                                                                                              |
| <b>Skin and body protection</b>        | Long sleeved clothing. Chemical resistant apron. Wear suitable protective clothing.                                                                                                                                                                                                                                                                                                                                     |
| <b>Respiratory protection</b>          | No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.                                                                                                                                                                                                                                                |
| <b>Environmental exposure controls</b> | Do not allow into any sewer, on the ground or into any body of water.                                                                                                                                                                                                                                                                                                                                                   |
| <b>General hygiene considerations</b>  | Regular cleaning of equipment, work area and clothing is recommended. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Wear suitable gloves and eye/face protection. |

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

|                       |                          |
|-----------------------|--------------------------|
| <b>Physical state</b> | Liquid                   |
| <b>Appearance</b>     | Liquid                   |
| <b>Color</b>          | colorless                |
| <b>Odor</b>           | Odorless                 |
| <b>Odor threshold</b> | No information available |

| <u>Property</u>                        | <u>Values</u>     | <u>Remarks • Method</u> |
|----------------------------------------|-------------------|-------------------------|
| <b>pH</b>                              | No data available | None known              |
| <b>Melting point / freezing point</b>  | No data available | None known              |
| <b>Boiling point / boiling range</b>   | No data available | None known              |
| <b>Flash point</b>                     | No data available | None known              |
| <b>Evaporation rate</b>                | No data available | None known              |
| <b>Flammability (solid, gas)</b>       | No data available | None known              |
| <b>Flammability Limit in Air</b>       |                   | None known              |
| Upper flammability or explosive limits | No data available |                         |
| Lower flammability or explosive limits | No data available |                         |
| <b>Vapor pressure</b>                  | No data available | None known              |
| <b>Relative vapor density</b>          | No data available | None known              |
| <b>Relative density</b>                | No data available | None known              |
| <b>Water solubility</b>                | No data available | None known              |
| <b>Solubility(ies)</b>                 | No data available | None known              |
| <b>Partition coefficient</b>           | No data available | None known              |
| <b>Autoignition temperature</b>        | No data available | None known              |



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|                           |                   |            |
|---------------------------|-------------------|------------|
| Decomposition temperature |                   | None known |
| Kinematic viscosity       | No data available | None known |
| Dynamic viscosity         | No data available | None known |

## Other information

|                      |                          |
|----------------------|--------------------------|
| Explosive properties | No information available |
| Oxidizing properties | No information available |
| Softening point      | No information available |
| Molecular weight     | No information available |
| VOC Content (%)      | No information available |
| Liquid Density       | No information available |
| Bulk density         | No information available |

## 10. Stability and reactivity

|                                    |                                                     |
|------------------------------------|-----------------------------------------------------|
| Reactivity                         | No information available.                           |
| Chemical stability                 | Stable under normal conditions.                     |
| Possibility of hazardous reactions | None under normal processing.                       |
| Conditions to avoid                | Exposure to air or moisture over prolonged periods. |
| Incompatible materials             | Oxidizing agent. Strong acids. Strong bases.        |
| Hazardous decomposition products   | None known based on information supplied.           |

## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

|              |                                                                                                                                                                                                                                                                                 |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation   | Specific test data for the substance or mixture is not available. May cause sensitization in susceptible persons. (based on components).                                                                                                                                        |
| Eye contact  | Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes.                                                                                                                                             |
| Skin contact | Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). May cause sensitization by skin contact. Causes skin irritation. Toxic in contact with skin. |
| Ingestion    | Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause additional affects as listed under "Inhalation". Harmful if swallowed. (based on components).                       |

### Symptoms related to the physical, chemical and toxicological characteristics



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## Symptoms

Redness. Burning. May cause blindness. 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. Coughing and/ or wheezing. Itching. Rashes. Hives. May cause redness and tearing of the eyes.

## Acute toxicity

## Numerical measures of toxicity

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

ATEmix (inhalation-dust/mist) 501.00 mg/l  
ATEmix (inhalation-vapor) 66.20 mg/l

## Component Information

| Chemical name                   | Oral LD50            | Dermal LD50 | Inhalation LC50                                     |
|---------------------------------|----------------------|-------------|-----------------------------------------------------|
| Nitric Acid<br>7697-37-2        | -                    | -           | = 2500 ppm ( Rat ) 1 h<br>ATE (vapours) = 2.65 mg/L |
| Strontium nitrate<br>10042-76-9 | = 2750 mg/kg ( Rat ) | -           | -                                                   |
| Selenium<br>7782-49-2           | = 6700 mg/kg ( Rat ) | -           | -                                                   |
| nickel<br>7440-02-0             | > 9000 mg/kg ( Rat ) | -           | > 10.2 mg/L ( Rat ) 1 h                             |
| Cobalt<br>7440-48-4             | = 6171 mg/kg ( Rat ) | -           | -                                                   |

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

### Skin corrosion/irritation

Classification based on data available for ingredients. Irritating to skin.

### Serious eye damage/eye irritation

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

### Respiratory or skin sensitization

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

### Germ cell mutagenicity

No information available.

### Carcinogenicity

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

The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Chemical name                   | ACGIH | IARC | NTP | OSHA |
|---------------------------------|-------|------|-----|------|
| Strontium nitrate<br>10042-76-9 | -     | -    | -   | X    |



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|                       |    |          |                        |   |
|-----------------------|----|----------|------------------------|---|
| Selenium<br>7782-49-2 | -  | Group 3  | -                      | - |
| nickel<br>7440-02-0   | -  | Group 2B | Reasonably Anticipated | X |
| Cobalt<br>7440-48-4   | A3 | Group 2B | Reasonably Anticipated | X |

## Legend

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

NTP (National Toxicology Program)

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

|                          |                                                                                                                                                     |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Reproductive toxicity    | Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. May damage fertility or the unborn child. |
| STOT - single exposure   | No information available.                                                                                                                           |
| STOT - repeated exposure | No information available.                                                                                                                           |
| Target organ effects     | Respiratory system, Eyes, Skin, Teeth.                                                                                                              |
| Aspiration hazard        | No information available.                                                                                                                           |
| Other adverse effects    | No information available.                                                                                                                           |
| Interactive effects      | No information available.                                                                                                                           |

## 12. Ecological information

### Ecotoxicity

| Chemical name                  | Algae/aquatic plants | Fish                 | Toxicity to microorganisms | Crustacea                             |
|--------------------------------|----------------------|----------------------|----------------------------|---------------------------------------|
| hydrofluoric acid<br>7664-39-3 | -                    | -                    | -                          | EC50: =270mg/L (48h, Daphnia species) |
| Selenium                       | -                    | LC50: >100mg/L (96h, | -                          | -                                     |



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|                     |   |                                            |   |   |
|---------------------|---|--------------------------------------------|---|---|
| 7782-49-2           |   | Oncorhynchus mykiss)                       |   |   |
| Cobalt<br>7440-48-4 | - | LC50: >100mg/L (96h,<br>Brachydanio rerio) | - | - |

**Persistence and degradability** No information available.

**Bioaccumulation** There is no data for this product.

## Component Information

| Chemical name                  | Partition coefficient |
|--------------------------------|-----------------------|
| Nitric Acid<br>7697-37-2       | -2.3                  |
| hydrofluoric acid<br>7664-39-3 | -1.4                  |

**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.

**California Hazardous Waste Status** This product contains one or more substances that are listed with the State of California as a hazardous waste.

## 14. Transport information

### DOT

UN number or ID number UN2922  
UN proper shipping name Corrosive liquids, toxic, n.o.s. (Nitric Acid, hydrofluoric acid)  
Transport hazard class(es) 8  
Subsidiary hazard class 6.1  
Packing group III  
Reportable Quantity (RQ) (Nitric Acid: RQ (kg)= 454.00, hydrofluoric acid: RQ (kg)= 45.40) Nitric Acid: RQ (lb)= 1000.00, hydrofluoric acid: RQ (lb)= 100.00  
DOT reportable quantity kg Nitric Acid: RQ (kg)= 11350.00, hydrofluoric acid: RQ (kg)= 6486.00  
(calculated)  
DOT Reportable Quantity lbs. Nitric Acid: RQ (lb)= 25000.00, hydrofluoric acid: RQ (lb)= 14286.00  
(calculated)  
Special Provisions IB3, T7, TP1, TP28



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|                                 |                                                                                         |
|---------------------------------|-----------------------------------------------------------------------------------------|
| DOT Marine Pollutant            | NP                                                                                      |
| Description                     | UN2922, Corrosive liquids, toxic, n.o.s. (Nitric Acid, hydrofluoric acid), 8 (6.1), III |
| Emergency Response Guide Number | 154                                                                                     |

## TDG

|                            |                                                                                        |
|----------------------------|----------------------------------------------------------------------------------------|
| UN number or ID number     | UN2922                                                                                 |
| UN proper shipping name    | Corrosive liquid, toxic, n.o.s. (Nitric Acid, hydrofluoric acid)                       |
| Transport hazard class(es) | 8                                                                                      |
| Subsidiary hazard class    | 6.1                                                                                    |
| Packing group              | III                                                                                    |
| Special Provisions         | 16                                                                                     |
| Marine pollutant           | NP                                                                                     |
| Description                | UN2922, Corrosive liquid, toxic, n.o.s. (Nitric Acid, hydrofluoric acid), 8 (6.1), III |

## MEX

|                            |                                                                                        |
|----------------------------|----------------------------------------------------------------------------------------|
| UN number or ID number     | UN2922                                                                                 |
| UN proper shipping name    | Corrosive liquid, toxic, n.o.s. (Nitric Acid, hydrofluoric acid)                       |
| Transport hazard class(es) | 8                                                                                      |
| Subsidiary hazard class    | 6.1                                                                                    |
| Packing group              | III                                                                                    |
| Technical Name             | Nitric Acid, hydrofluoric acid                                                         |
| Description                | UN2922, Corrosive liquid, toxic, n.o.s. (Nitric Acid, hydrofluoric acid), 8 (6.1), III |
| Special Provisions         | 223, 274                                                                               |

## IATA

|                            |                                                                                        |
|----------------------------|----------------------------------------------------------------------------------------|
| UN number or ID number     | UN2922                                                                                 |
| UN proper shipping name    | Corrosive liquid, toxic, n.o.s. (Nitric Acid, hydrofluoric acid)                       |
| Transport hazard class(es) | 8                                                                                      |
| Subsidiary hazard class    | 6.1                                                                                    |
| Packing group              | III                                                                                    |
| Technical Name             | Nitric Acid, hydrofluoric acid                                                         |
| Description                | UN2922, Corrosive liquid, toxic, n.o.s. (Nitric Acid, hydrofluoric acid), 8 (6.1), III |
| Special Provisions         | A3, A803                                                                               |
| ERG Code                   | 8P                                                                                     |

## IMDG

|                            |                                                                                        |
|----------------------------|----------------------------------------------------------------------------------------|
| UN number or ID number     | UN2922                                                                                 |
| UN proper shipping name    | Corrosive liquid, toxic, n.o.s. (Nitric Acid, hydrofluoric acid)                       |
| Transport hazard class(es) | 8                                                                                      |
| Subsidiary hazard class    | 6.1                                                                                    |
| Packing group              | III                                                                                    |
| EmS-No                     | F-A, S-B                                                                               |
| Special Provisions         | 223, 274                                                                               |
| Marine pollutant           | NP                                                                                     |
| Description                | UN2922, Corrosive liquid, toxic, n.o.s. (Nitric Acid, hydrofluoric acid), 8 (6.1), III |

## 15. Regulatory information



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:

VHG-Z22-W000060 - Co, Li, Mo, Ni, Se, Sn, Sr  
@1000µg/mL in 4% HNO<sub>3</sub>; 0.7% HF

Revision date 08-Feb-2022

## International Inventories

### TSCA

Contact supplier for inventory compliance status.

| Chemical name     | CAS No     | US TSCA Inventory listing | US TSCA inactive/active designation |
|-------------------|------------|---------------------------|-------------------------------------|
| Water             | 7732-18-5  | Present                   | Active                              |
| Nitric Acid       | 7697-37-2  | Present                   | Active                              |
| hydrofluoric acid | 7664-39-3  | Present                   | Active                              |
| Selenium          | 7782-49-2  | Present                   | Active                              |
| Strontium nitrate | 10042-76-9 | Present                   | Active                              |
| Lithium carbonate | 554-13-2   | Present                   | Active                              |
| Molybdenum        | 7439-98-7  | Present                   | Active                              |
| nickel            | 7440-02-0  | Present                   | Active                              |
| Tin               | 7440-31-5  | Present                   | Active                              |
| Cobalt            | 7440-48-4  | Present                   | Active                              |

### DSL/NDSL

Contact supplier for inventory compliance status.

### EINECS/ELINCS

Contact supplier for inventory compliance status.

### ENCS

Contact supplier for inventory compliance status.

### IECSC

Contact supplier for inventory compliance status.

### KECL

Contact supplier for inventory compliance status.

### PICCS

Contact supplier for inventory compliance status.

### AICS

Contact supplier for inventory compliance status.

### Legend:

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

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

**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

**AICS** - Australian Inventory of Chemical Substances

## 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 - 7697-37-2        | 1.0                           |
| hydrofluoric acid - 7664-39-3  | 1.0                           |
| Strontium nitrate - 10042-76-9 | 1.0                           |



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|                      |     |
|----------------------|-----|
| Selenium - 7782-49-2 | 1.0 |
| nickel - 7440-02-0   | 0.1 |
| Cobalt - 7440-48-4   | 0.1 |

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

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

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

This product contains the following substances which are regulated 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                          |
| hydrofluoric acid<br>7664-39-3 | 100 lb                      | -                      | -                         | X                          |
| Selenium<br>7782-49-2          | -                           | X                      | X                         | -                          |
| nickel<br>7440-02-0            | -                           | X                      | X                         | -                          |

## **CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

| Chemical name                  | Hazardous Substances RQs | Extremely Hazardous Substances RQs | Reportable Quantity (RQ)                  |
|--------------------------------|--------------------------|------------------------------------|-------------------------------------------|
| Nitric Acid<br>7697-37-2       | 1000 lb                  | 1000 lb                            | RQ 1000 lb final RQ<br>RQ 454 kg final RQ |
| hydrofluoric acid<br>7664-39-3 | 100 lb                   | 100 lb                             | RQ 100 lb final RQ<br>RQ 45.4 kg final RQ |
| Selenium<br>7782-49-2          | 100 lb                   | -                                  | RQ 100 lb final RQ<br>RQ 45.4 kg final RQ |
| nickel<br>7440-02-0            | 100 lb                   | -                                  | RQ 100 lb final RQ<br>RQ 45.4 kg final RQ |

## **US State Regulations**

### **California Proposition 65**

This product contains the following Proposition 65 chemicals:

| Chemical name                | California Proposition 65 |
|------------------------------|---------------------------|
| Lithium carbonate - 554-13-2 | Developmental             |
| nickel - 7440-02-0           | Carcinogen                |
| Cobalt - 7440-48-4           | Carcinogen                |

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



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| Chemical name                   | New Jersey | Massachusetts | Pennsylvania |
|---------------------------------|------------|---------------|--------------|
| Water<br>7732-18-5              | -          | -             | X            |
| Nitric Acid<br>7697-37-2        | X          | X             | X            |
| hydrofluoric acid<br>7664-39-3  | X          | X             | X            |
| Selenium<br>7782-49-2           | X          | X             | X            |
| Strontium nitrate<br>10042-76-9 | X          | X             | X            |
| Lithium carbonate<br>554-13-2   | X          | X             | -            |
| Molybdenum<br>7439-98-7         | X          | X             | X            |
| nickel<br>7440-02-0             | X          | X             | X            |
| Tin<br>7440-31-5                | X          | X             | X            |
| Cobalt<br>7440-48-4             | X          | X             | X            |

## U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

## 16. Other information

|             |                           |                       |                           |                              |
|-------------|---------------------------|-----------------------|---------------------------|------------------------------|
| <b>NFPA</b> | <b>Health hazards</b> 3   | <b>Flammability</b> 0 | <b>Instability</b> 0      | <b>Special hazards</b> -     |
| <b>HMIS</b> | <b>Health hazards</b> 2 * | <b>Flammability</b> 0 | <b>Physical hazards</b> 0 | <b>Personal protection</b> X |

Chronic Hazard Star Legend \* = Chronic Health Hazard

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

#### Legend Section 8: Exposure controls/personal protection

|         |                             |      |                                  |
|---------|-----------------------------|------|----------------------------------|
| TWA     | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value         | *    | Skin designation                 |

### Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AEGL(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals



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Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
Organization for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

**Revision date** 08-Feb-2022  
**Revision Note** No information available.

## Disclaimer

The information in this Safety Data Sheet meets the requirements of the United States OCCUPATIONAL SAFETY AND HEALTH ACT and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) This document is intended only as a guide to the appropriate precautionary handling of the material by a person trained in, or supervised by a person trained in, chemical handling. The user is responsible for determining the application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, we cannot warn of all of the potential dangers of use or interaction with other chemicals or materials. We warrant that the chemical meets the specifications set forth on the label. We (LGC/VHG/ARMI) disclaim any other warranties, expressed or implied with regard to the product supplied hereunder, its merchantability or its fitness for a particular purpose. The user should recognize that this product can cause severe injury and even death, especially if improperly handled or the known dangers of use are not heeded. Read all precautionary information.

**End of Safety Data Sheet**