



# SAFETY DATA SHEET

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

Revision date 31-Jul-2025

Revision Number 2

## 1. Identification

### Product identifier

**Product Name** Thorium Standard: 1000 µg/mL Th in 5% HNO<sub>3</sub> [100ml bottle]

### Other means of identification

**Product Code(s)** 5190-8539

**Synonyms** None

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

**Recommended use** Reagents and Standards for Analytical Chemical Laboratory Use

**Restrictions on use** Do not use outside of recommended applications

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

#### Supplier Address

Agilent Technologies, Inc.  
5301 Stevens Creek Blvd  
Santa Clara, CA 95051, USA

800-227-9770

**E-mail** pdl-msds\_author@agilent.com

### Emergency telephone number

**Emergency Telephone**  
CHEMTREC®: 1-800-424-9300

## 2. Hazard(s) identification

### Classification

Classified according to OSHA.

|                                   |             |
|-----------------------------------|-------------|
| Corrosive to metals               | Category 1  |
| Skin corrosion/irritation         | Category 2  |
| Serious eye damage/eye irritation | Category 1  |
| Carcinogenicity                   | Category 1B |

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### Hazards not otherwise classified (HNOC)

Not applicable

### Label elements



Danger

### Hazard statements

Classified according to OSHA.  
May be corrosive to metals.  
Causes skin irritation.  
Causes serious eye damage.  
May cause cancer.

### **Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wear protective gloves/clothing and eye/face protection  
Wash face, hands and any exposed skin thoroughly after handling  
Keep only in original packaging

### **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  
If skin irritation occurs: Get medical advice/attention  
Take off contaminated clothing and wash it before reuse  
Absorb spillage to prevent material damage

### **Precautionary Statements - Storage**

Store locked up  
Store in corrosion resistant container with a resistant inner liner

### **Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards classified under paragraph (d)(1)(i)(B) of 1910.1200**

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No information available.

## 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   | -            |
| thorium dioxide | 1314-20-1 | 0.1 - 1  | -            |

### Additional information

The concentration of the acid stated in this SDS is calculated as an absolute mass concentration (%w/v). This is less than the acid concentration stated on the product label and COA, which reflects a percent value of the commercially available concentrated aqueous form of the acid.

## 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. Get medical attention immediately if symptoms occur.                                                                                                                                                                                 |
| 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 attention. |
| Skin contact                       | Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.                                                                                                                    |
| Ingestion                          | Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.                                                                                                                                             |
| Self-protection of the first aider | Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).                                                                                                                                                             |



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

Symptoms Burning sensation.

Effects of Exposure May cause cancer.

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

Note to physicians 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 No information available.

### Explosion data

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.

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.

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

## 7. Handling and storage

### Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

**General hygiene considerations** 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. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** 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. 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.

## 8. Exposure controls/personal protection

### Control parameters

#### Exposure Limits

| Chemical name            | ACGIH TLV                 | OSHA PEL                                                                                                                                                              | NIOSH                                                                                               |
|--------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Nitric Acid<br>7697-37-2 | TWA: 2 ppm<br>STEL: 4 ppm | TWA: 2 ppm<br>TWA: 5 mg/m <sup>3</sup><br>(vacated) TWA: 2 ppm<br>(vacated) TWA: 5 mg/m <sup>3</sup><br>(vacated) STEL: 4 ppm<br>(vacated) STEL: 10 mg/m <sup>3</sup> | IDLH: 25 ppm<br>TWA: 2 ppm<br>TWA: 5 mg/m <sup>3</sup><br>STEL: 4 ppm<br>STEL: 10 mg/m <sup>3</sup> |

#### Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.



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## Appropriate engineering controls

Engineering controls                      Showers  
                                                         Eyewash stations  
                                                         Ventilation systems.

## Individual protection measures, such as personal protective equipment

Eye/face protection                      Avoid contact with eyes. Wear safety glasses with side shields (or goggles). Tight sealing safety goggles.

Hand protection                              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. Wear suitable gloves. Impervious gloves.

Skin and body protection                      Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection                      Appropriate respiratory protection should be selected and used according to the chemical nature, hazards and use of this product and safety requirements of the local jurisdiction. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Environmental exposure controls              Do not allow into any sewer, on the ground or into any body of water.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

Appearance                                      Liquid  
Physical state                                      Liquid  
Color                                                  No information available  
Odor (includes odor threshold)                  No information available

| <u>Property</u>                                           | <u>Values</u>     | <u>Remarks • Method</u> |
|-----------------------------------------------------------|-------------------|-------------------------|
| Melting point / freezing point                            | No data available | None known              |
| Boiling point (or initial boiling point or boiling range) | No data available | None known              |
| Flammability                                              | No data available | None known              |
| Flammability Limit in Air                                 |                   | None known              |
| Upper flammability or explosive limits                    | No data available |                         |
| Lower flammability or explosive limits                    | No data available |                         |
| Flash point                                               | No data available | None known              |
| Autoignition temperature                                  | No data available | None known              |
| Decomposition temperature                                 | No data available | None known              |
| SADT (°C)                                                 | No data available | None known              |



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|                                                   |                   |            |
|---------------------------------------------------|-------------------|------------|
| pH                                                | No data available | None known |
| pH (as aqueous solution)                          | No data available | None known |
| Kinematic viscosity                               | No data available | None known |
| Dynamic viscosity                                 | No data available | None known |
| Solubility                                        | No data available | None known |
| Water solubility                                  | No data available | None known |
| Partition coefficient n-octanol/water (log value) | No data available | None known |
| Vapor pressure (includes evaporation rate)        | No data available | None known |
| Density and/or relative density                   | No data available | None known |
| Bulk density                                      | No data available |            |
| Liquid Density                                    | No data available |            |
| Relative vapor density                            | No data available | None known |
| Particle characteristics                          |                   | None known |
| Particle Size                                     | No data available |            |
| Particle Size Distribution                        | No data available |            |

## Other information

### Information with regard to physical hazard classes

#### 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.                                                                   |
| Eye contact | Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes. |



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**Skin contact** Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).

**Ingestion** Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

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

**Symptoms** Redness. Burning. May cause blindness. 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 (oral)                 | 100,000.00 mg/kg |
| ATEmix (dermal)               | 300,000.00 mg/kg |
| ATEmix (inhalation-gas)       | 99,999.00 ppm    |
| ATEmix (inhalation-dust/mist) | 501.000 mg/l     |
| ATEmix (inhalation-vapor)     | 58.90 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 |

### 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. Causes skin irritation.

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes burns. Causes serious eye damage.

**Respiratory or skin sensitization** No information available.

**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.



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| Chemical name                | ACGIH | IARC | NTP   | OSHA |
|------------------------------|-------|------|-------|------|
| thorium dioxide<br>1314-20-1 | -     | -    | Known | X    |

## Legend

**NTP (National Toxicology Program)**

Known - Known Carcinogen

**Occupational Safety and Health Administration of the US Department of Labor**

X - Present

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

**Other adverse effects** No information available.

**Interactive effects** No information available.

## 12. Ecological information

**Ecotoxicity** The environmental impact of this product has not been fully investigated.

**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                  |

**Other adverse effects** No information available.



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### 13. Disposal considerations

#### Disposal 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                 | UN3264                                                                    |
| Extended proper shipping name          | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)                 |
| Transport hazard class(es)             | 8                                                                         |
| Packing group                          | III                                                                       |
| Reportable Quantity (RQ)               | (Nitric Acid: RQ (kg)= 454.00) Nitric Acid: RQ (lb)= 1000.00              |
| Reportable quantity (kg) (calculated)  | Nitric Acid: RQ (kg)= 10088.89                                            |
| Reportable quantity (lbs) (calculated) | Nitric Acid: RQ (lb)= 22222.00                                            |
| Special Provisions                     | IB3, T7, TP1, TP28                                                        |
| DOT Marine Pollutant                   | NP                                                                        |
| Description                            | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III |
| Emergency Response Guide Number        | 154                                                                       |

#### TDG

|                            |                                                                           |
|----------------------------|---------------------------------------------------------------------------|
| UN number or ID number     | UN3264                                                                    |
| UN proper shipping name    | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)                 |
| Transport hazard class(es) | 8                                                                         |
| Packing group              | III                                                                       |
| Special Provisions         | 16                                                                        |
| Description                | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III |

#### MEX

|                            |                                                           |
|----------------------------|-----------------------------------------------------------|
| UN number or ID number     | UN3264                                                    |
| UN proper shipping name    | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid) |
| Transport hazard class(es) | 8                                                         |
| Packing group              | III                                                       |



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|                           |                                                                           |
|---------------------------|---------------------------------------------------------------------------|
| <b>Technical Name</b>     | Nitric Acid                                                               |
| <b>Description</b>        | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III |
| <b>Special Provisions</b> | 223, 274                                                                  |

### ICAO (air)

|                                   |                                                                           |
|-----------------------------------|---------------------------------------------------------------------------|
| <b>UN number or ID number</b>     | UN3264                                                                    |
| <b>UN proper shipping name</b>    | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)                 |
| <b>Transport hazard class(es)</b> | 8                                                                         |
| <b>Packing group</b>              | III                                                                       |
| <b>Description</b>                | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III |
| <b>Special Provisions</b>         | A3                                                                        |

### IATA

|                                   |                                                                           |
|-----------------------------------|---------------------------------------------------------------------------|
| <b>UN number or ID number</b>     | UN3264                                                                    |
| <b>UN proper shipping name</b>    | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)                 |
| <b>Transport hazard class(es)</b> | 8                                                                         |
| <b>Packing group</b>              | III                                                                       |
| <b>Technical Name</b>             | Nitric Acid                                                               |
| <b>Description</b>                | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III |
| <b>Special Provisions</b>         | A3, A803                                                                  |
| <b>ERG Code</b>                   | 8L                                                                        |

### IMDG

|                                   |                                                                           |
|-----------------------------------|---------------------------------------------------------------------------|
| <b>UN number or ID number</b>     | UN3264                                                                    |
| <b>UN proper shipping name</b>    | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)                 |
| <b>Transport hazard class(es)</b> | 8                                                                         |
| <b>Packing group</b>              | III                                                                       |
| <b>EmS-No.</b>                    | F-A, S-B                                                                  |
| <b>Special Provisions</b>         | 223, 274                                                                  |
| <b>Marine pollutant</b>           | NP                                                                        |
| <b>Description</b>                | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III |

## 15. Regulatory information

### International Regulations

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

### International Inventories

|             |                                                                                                                                                                                                                                                                      |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TSCA</b> | LGC, to the best of its ability, has confirmed that the chemical substances in this product are listed as "Active" in the EPA (Environmental Protection Agency) "TSCA Inventory Notification (Active-Inactive) Requirements Rule" ("the Final Rule") of Feb 2019, as |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



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amended Feb 2021.”.

| Chemical name   | CAS No.   | Inventory Listing Status | Commercial Activity Designation |
|-----------------|-----------|--------------------------|---------------------------------|
| Water           | 7732-18-5 | Present                  | Active                          |
| Nitric Acid     | 7697-37-2 | Present                  | Active                          |
| thorium dioxide | 1314-20-1 | 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. |
| NZIoC         | Contact supplier for inventory compliance status. |
| TCSI          | 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 Chemicals Inventory  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances  
**NZIoC** - New Zealand Inventory of Chemicals  
**TCSI** - Taiwan Chemical Substance Inventory

## 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                           |

### 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



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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                          |

## CAA (Clean Air Act)

This product does not contain any substances regulated as pollutants pursuant to Clean Air Act (CAA).

## 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 |

## US State Regulations

### California Proposition 65

This product contains the following Proposition 65 chemicals:.

| Chemical name               | California Proposition 65 |
|-----------------------------|---------------------------|
| thorium dioxide - 1314-20-1 | Carcinogen                |

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

| Chemical name                | New Jersey | Massachusetts | Pennsylvania |
|------------------------------|------------|---------------|--------------|
| Water<br>7732-18-5           | -          | -             | X            |
| Nitric Acid<br>7697-37-2     | X          | X             | X            |
| thorium dioxide<br>1314-20-1 | X          | X             | X            |

## U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

## 16. Other information

NFPA Health hazards 3 Flammability 0 Instability 0 Special hazards -  
HMIS Health hazards 3 \* Flammability 0 Physical hazards 4 Personal protection -  
Chronic Hazard Star Legend \* = Chronic Health Hazard

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

### Legend

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|         |                                                                                                     |
|---------|-----------------------------------------------------------------------------------------------------|
| ACGIH   | American Conference of Governmental Industrial Hygienists                                           |
| ADN     | Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Europe)     |
| ADR     | Agreement concerning the International Carriage of Dangerous Goods by Road (Europe)                 |
| AIIC    | Australian Inventory of Industrial Chemicals                                                        |
| ATE     | Acute Toxicity Estimate                                                                             |
| ASTM    | American Society for the Testing of Materials                                                       |
| bar     | Biological Reference Values for Chemical Compounds in the Work Area                                 |
| BAT     | Biological tolerance values for occupational exposure                                               |
| BEL     | Biological exposure limits                                                                          |
| bw      | Body weight                                                                                         |
| Ceiling | Maximum limit value                                                                                 |
| CMR     | Carcinogen, Mutagen or Reproductive Toxicant                                                        |
| DOT     | Department of Transportation (United States)                                                        |
| DSL     | Domestic Substances List (Canada)                                                                   |
| EmS     | Emergency Schedule                                                                                  |
| ENCS    | Existing and New Chemical Substances (Japan)                                                        |
| EPA     | Environmental Protection Agency                                                                     |
| GHS     | Globally Harmonized System                                                                          |
| HMIS    | Hazardous Materials Identification System                                                           |
| IARC    | International Agency for Research on Cancer                                                         |
| IATA    | International Air Transport Association                                                             |
| IBC     | International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk |
| ICAO    | International Civil Aviation Organization                                                           |
| IECSC   | Inventory of Existing Chemical Substances in China                                                  |
| IMDG    | International Maritime Dangerous Goods                                                              |
| IMO     | International Maritime Organization                                                                 |
| ISO     | International Organization for Standardization                                                      |
| KECI    | Korean Existing Chemicals Inventory                                                                 |
| LC50    | Lethal Concentration to 50% of a test population                                                    |
| LD50    | Lethal Dose to 50% of a test population (Median Lethal Dose)                                        |
| MARPOL  | International Convention for the Prevention of Pollution from Ships                                 |
| NFPA    | National Fire Protection Association                                                                |
| NIOSH   | National Institute for Occupational Safety and Health                                               |
| n.o.s.  | Not Otherwise Specified                                                                             |
| NOAEC   | No Observed Adverse Effect Concentration                                                            |
| NOAEL   | No Observed Adverse Effect Level                                                                    |
| NOELR   | No Observable Effect Loading Rate                                                                   |
| NTP     | National Toxicology Program (United States)                                                         |
| NZIoC   | New Zealand Inventory of Chemicals                                                                  |
| OECD    | Organization for Economic Cooperation and Development                                               |
| OEL     | Occupational exposure limits                                                                        |
| OSHA    | Occupational Safety and Health Administration of the US Department of Labor                         |



## SAFETY DATA SHEET

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OSHA HCS2012

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HNO<sub>3</sub> [100ml bottle]**

**Revision date 31-Jul-2025**

|         |                                                                                     |
|---------|-------------------------------------------------------------------------------------|
| PBT     | Persistent, Bioaccumulative and Toxic substance                                     |
| PICCS   | Philippines Inventory of Chemicals and Chemical Substances                          |
| PMT     | Persistent, Mobile and Toxic                                                        |
| PPE     | Personal protective equipment                                                       |
| QSAR    | Quantitative Structure Activity Relationship                                        |
| RID     | Agreement concerning the International Carriage of Dangerous Goods by Rail (Europe) |
| SADT    | Self-Accelerating Decomposition Temperature                                         |
| SAR     | Structure-activity relationship                                                     |
| SARA    | Superfund Amendments and Reauthorization Act                                        |
| SDS     | Safety Data Sheet                                                                   |
| SL      | Surface Limit                                                                       |
| STEL    | Short Term Exposure Limit                                                           |
| STOT RE | Specific target organ toxicity - Repeated exposure                                  |
| STOT SE | Specific target organ toxicity - Single exposure                                    |
| TCSI    | Taiwan Chemical Substance Inventory                                                 |
| TDG     | Transport of Dangerous Goods (Canada)                                               |
| TSCA    | Toxic Substances Control Act (United States)                                        |
| TWA     | Time-Weighted Average                                                               |
| UN      | United Nations                                                                      |
| VOC     | Volatile organic compounds                                                          |
| vPvB    | Very Persistent and Very Bioaccumulative                                            |
| vPvM    | Very Persistent and Very Mobile                                                     |
| Sen+    | Sensitizer                                                                          |
| Sk*     | Skin designation                                                                    |
| **      | Hazard 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)  
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  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
National Institute of Technology and Evaluation (NITE)  
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)  
U.S. 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



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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

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**End of Safety Data Sheet**