



SAFETY DATA SHEET

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

Revision date 23-Apr-2026

Revision Number 2.02

1. Identification

Product identifier

Product Name ICH/USP Oral Target Elements Standard D

Other means of identification

Substance Name
Product Code(s) 5190-9769

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Reagents and Standards for Analytical Chemical Laboratory Use. This product is for research and development only.

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
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Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2
Hazardous to the aquatic environment - acute	Category 1
Hazardous to the aquatic environment - chronic	Category 1

Hazards not otherwise classified (HNOC)

Not applicable

Label elements



Environmental hazards

Danger

Hazard statements
 Classified according to OSHA.
 May be corrosive to metals.
 Causes skin irritation.
 Causes serious eye damage.
 Suspected of causing cancer.
 Very toxic to aquatic life with long lasting effects.

Precautionary Statements - Prevention

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

Precautionary Statements - Response

- IF exposed or concerned: Get medical advice/attention
- Specific treatment (see supplemental first aid instructions on this label)



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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
Collect spillage
Absorb spillage to prevent material damage

Precautionary Statements - Storage

Store in corrosion resistant container with a resistant inner liner

Precautionary Statements - Disposal

Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable

Hazards classified under paragraph (d)(1)(ii) of 1910.1200

No information available.

Other information

May be harmful if swallowed. May be harmful in contact with skin.

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	-
Chromium (III) nitrate nonahydrate	7789-02-8	1 - <3	-
Copper	7440-50-8	0.1 - 1	-
Barium nitrate	10022-31-8	0.1 - 1	-
Antimony	7440-36-0	0.1 - 1	-
hydrofluoric acid	7664-39-3	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



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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).

Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation. May cause blindness. May cause redness and tearing of the eyes. Erythema (skin redness).
Effects of Exposure	Suspected of causing cancer.

Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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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.
Hazardous combustion products	No information available.
Explosion data	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.



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Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protective 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 Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

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



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Control Parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Nitric Acid 7697-37-2	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm TWA: 5 mg/m ³ (vacated) TWA: 2 ppm (vacated) TWA: 5 mg/m ³ (vacated) STEL: 4 ppm (vacated) STEL: 10 mg/m ³	TWA: 2 ppm; TWA: 5 mg/m ³ ; STEL: 4 ppm STEL: 10 mg/m ³ IDLH: 25 ppm
Chromium (III) nitrate nonahydrate 7789-02-8	-	TWA: 0.5 mg/m ³ Cr (vacated) TWA: 0.5 mg/m ³ Cr	TWA: 0.5 mg/m ³ ; Cr IDLH: 25 mg/m ³ Cr(III)
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	TWA: 1 mg/m ³ ; dust and mist TWA: 0.1 mg/m ³ ; fume IDLH: 100 mg/m ³ dust, fume and mist
Barium nitrate 10022-31-8	TWA: 0.5 mg/m ³ Ba	TWA: 0.5 mg/m ³ Ba regulated under CAS 7440-39-3 (vacated) TWA: 0.5 mg/m ³ Ba	TWA: 0.5 mg/m ³ ; Ba IDLH: 50 mg/m ³ Ba
Antimony 7440-36-0	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³ (vacated) TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³ ; IDLH: 50 mg/m ³
hydrofluoric acid 7664-39-3	TWA: 0.5 ppm F Sk* Ceiling: 2 ppm F	TWA: 3 ppm F (vacated) TWA: 3 ppm F (vacated) STEL: 6 ppm F	TWA: 3 ppm; TWA: 2.5 mg/m ³ ; Ceiling: 6 ppm 15 min Ceiling: 5 mg/m ³ 15 min IDLH: 30 ppm

Note See section 16 for terms and abbreviations.

Other information on limit values Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Biological occupational exposure limits

Chemical name	ACGIH
hydrofluoric acid 7664-39-3	2 mg/L - urine (Fluoride) - prior to shift 3 mg/L - urine (Fluoride) - end of shift

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.



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Individual protection measures, such as personal protective equipment

Eye/face protection	Avoid contact with eyes. Wear safety glasses with side shields (or goggles). Face protection shield. Tight sealing safety goggles.
Hand protection	Wear protective Neoprene™ gloves. The protective gloves to be used must comply with the specifications of OSHA (29 CFR 1910.132),. Wear suitable 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.
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	colorless
Odor (includes odor threshold)	Odorless

<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
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
Evaporation rate	No data available	None known
Density and/or relative density	No data available	None known
Bulk density	No data available	



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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.
Hazardous polymerization	No information available.
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. May result in permanent damage including blindness. Causes serious eye damage.
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). May be harmful 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.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Redness. Burning. May cause blindness. May cause redness and tearing of the eyes.
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Acute toxicity

Numerical measures of toxicity

The following ATE values have been calculated for the mixture

ATEmix (oral)	4,608.60 mg/kg
ATEmix (dermal)	5,000.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-dust/mist)	50.10 mg/L
ATEmix (inhalation-vapor)	58.90 mg/L

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Nitric Acid 7697-37-2	-	-	= 2500 ppm (Rat) 1 h ATE (vapours) = 2.65 mg/L
Chromium (III) nitrate nonahydrate 7789-02-8	= 3250 mg/kg (Rat)	-	-
Copper 7440-50-8	-	-	> 5.11 mg/L (Rat) 4 h
Barium nitrate 10022-31-8	= 300 mg/kg (Rat)	-	> 1.1 mg/L (Rat) 243 min
Antimony 7440-36-0	= 7000 mg/kg (Rat)	-	-
hydrofluoric acid 7664-39-3	-	-	= 0.79 mg/L (Rat) 1 h

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	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Contains a known or suspected carcinogen. Classification based on data available for ingredients. Suspected of causing cancer.

Legend

IARC (International Agency for Research on Cancer)



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Group 3 - Not classifiable as to its carcinogenicity to humans
Occupational Safety and Health Administration of the US Department of Labor
X - Present

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

STOT - single exposure Based on available data, the classification criteria are not met.

STOT - repeated exposure Based on available data, the classification criteria are not met.

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

Other adverse effects No information available.

Interactive effects No information available.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Aquatic ecotoxicity

Component Information

Chemical name	Fish	Crustacea	Algae/aquatic plants	Toxicity to microorganisms
Copper	LC50: 0.0068 - 0.0156mg/L (96h, Pimephales promelas) LC50: <0.3mg/L (96h, Pimephales promelas) LC50: =0.2mg/L (96h, Pimephales promelas) LC50: =0.052mg/L (96h, Oncorhynchus mykiss) LC50: =1.25mg/L (96h, Lepomis macrochirus) LC50: =0.3mg/L (96h, Cyprinus carpio) LC50: =0.8mg/L (96h,	EC50: =0.03mg/L (48h, Daphnia magna)	EC50: 0.031 - 0.054mg/L (96h, Pseudokirchneriella subcapitata) EC50: 0.0426 - 0.0535mg/L (72h, Pseudokirchneriella subcapitata)	-



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	Cyprinus carpio) LC50: =0.112mg/L (96h, Poecilia reticulata)			
Antimony	LC50: >6.2 - 8.3mg/L (96h, Cyprinodon variegatus)	-	-	-
hydrofluoric acid	-	EC50: =270mg/L (48h, Daphnia species)	-	-

Persistence and degradability No information available.

Bioaccumulative potential

Chemical name	Partition coefficient	Bioconcentration factor (BCF)	Trophic magnification factor (TMF)
Nitric Acid	-2.3	-	-
hydrofluoric acid	-1.4	-	-

Mobility in soil No information available.

Other adverse effects No information available.

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, hydrofluoric acid)



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Transport hazard class(es) 8
Packing group III
Reportable quantity (kg) (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 M
Marine pollutant Copper
Description UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric 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, hydrofluoric acid)
Transport hazard class(es) 8
Packing group III
Special Provisions 16
Marine pollutant Copper.
Description UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid), 8, III

MEX

UN number or ID number UN3264
UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid)
Transport hazard class(es) 8
Packing group III
Technical Name Nitric Acid, hydrofluoric acid
Description UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid), 8, III
Special Provisions 223, 274

ICAO (air)

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

IATA

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



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IMDG

UN number or ID number UN3264
UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s.(Nitric Acid, hydrofluoric acid)
Transport hazard class(es) 8
Packing group III
EmS-No. F-A S-B
Special Provisions 223, 274
Marine pollutant indicator M
Marine pollutant name Copper
Description UN3264, Corrosive liquid, acidic, inorganic, n.o.s.(Nitric Acid, hydrofluoric acid), 8, III, Marine pollutant

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

TSCA

The supplier, 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 amended Feb 2021.

Chemical name	CAS No.	Inventory Listing Status	Commercial Activity Designation
Nitric Acid	7697-37-2	Present	Active
Chromium (III) nitrate nonahydrate	7789-02-8	Present	Active
Copper	7440-50-8	Present	Active
Barium nitrate	10022-31-8	Present	Active
Antimony	7440-36-0	Present	Active
hydrofluoric acid	7664-39-3	Present	Active

DSL/NDSL

EINECS/ELINCS

ENCS

IECSC

KECL

PICCS

AIIC

Contact supplier for inventory compliance status.
Contact supplier for inventory compliance status.
Contact supplier for inventory compliance status.
Contact supplier for inventory compliance status.
Contact supplier for inventory compliance status.
Contact supplier for inventory compliance status.
Contact supplier for inventory compliance status.



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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/NDL** - 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
Chromium (III) nitrate nonahydrate - 7789-02-8	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 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nitric Acid 7697-37-2	1000 lb	-	-	X
Chromium (III) nitrate nonahydrate 7789-02-8	-	X	-	-
Copper 7440-50-8	-	X	X	-
Antimony 7440-36-0	-	X	X	-
hydrofluoric acid 7664-39-3	100 lb	-	-	X

CAA (Clean Air Act)

This product contains the following substances which are regulated pollutants to the Clean Air Act (CAA).

Chemical name	Hazardous air pollutants (HAPs)	Ozone-depleting substances (ODS)
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Chemical name	Hazardous air pollutants (HAPs)	Ozone-depleting substances (ODS)
Chromium (III) nitrate nonahydrate 7789-02-8	Present	-
hydrofluoric acid 7664-39-3	Present	-

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 7697-37-2	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ
Copper 7440-50-8	5000 lb / kg (final RQ)	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Antimony 7440-36-0	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
hydrofluoric acid 7664-39-3	100 lb	100 lb	RQ 100 lb final RQ 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

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Water 7732-18-5	-	-	X
Nitric Acid 7697-37-2	X	X	X
Chromium (III) nitrate nonahydrate 7789-02-8	X	-	X
Tin 7440-31-5	X	X	X
Molybdenum 7439-98-7	X	X	X
Copper 7440-50-8	X	X	X
Barium nitrate 10022-31-8	X	X	X
Antimony 7440-36-0	X	X	X
hydrofluoric acid	X	X	X



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7664-39-3			
Lithium Carbonate 554-13-2	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

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	U.S. 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



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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
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

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



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U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan 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)
International Organization for Economic Co-operation and Development (OECD) Environment, Health, and Safety Publications
International Organization for Economic Co-operation and Development (OECD) High Production Volume Chemicals Program
International Organization for Economic Co-operation and Development (OECD) Screening Information Data Set
United Nations World Health Organization (WHO)

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End of Safety Data Sheet