



# Agilent Technologies

**Kit Name:** ICH Q3D & USP 232 Orals Kit\_v2

**Kit PN:** 5191-4553

This product is a kit, composed of the following individual chemical components:

## Kit Components

Component Part Number	Component Name	Volume or mass/ container and unit	No. of component containers/ kit
5190-9766	ICH/USP Target Elements Standard A	100 mL	1
5190-9767	ICH/USP Oral Target Elements Standard B	100 mL	1
5191-4555	ICH/USP Oral Target Elements Std C_v2	100 mL	1
5190-9769	ICH/USP Oral Target Elements Standard D	100 mL	1
5190-9770	Pharma Internal Standard 1	100 mL	1

SDSs for each component follow this cover sheet.

## Transportation Information for the Kit:

### Proper Shipping Names:

DOT	IATA/ICAO	China
UN3316, Chemical Kit, 9, II	UN3316, Chemical Kit, 9, II	UN3316, Chemical Kit, 9, II



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
HPR, Schedule 1

Revision date 01-Sep-2023

Revision Number 1

## 1. Identification

### Product identifier

**Product Name** ICH/USP Target Elements Standard A

### Other means of identification

**Product Code(s)** 5190-9766

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

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

### Restrictions on use

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

#### Initial supplier identifier

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 identification

### Classification

Classification according to WHIMIS

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Chronic aquatic toxicity	Category 3
Corrosive to metals	Category 1

### Label elements

**Warning**

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## Hazard statements

Classification according to WHIMIS  
Causes skin irritation  
Causes serious eye irritation  
Harmful to aquatic life with long lasting effects  
May be corrosive to metals



## Precautionary Statements - Prevention

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 and face protection

## Precautionary Statements - Response

### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice and attention

### Skin

IF ON SKIN: Wash with plenty of water and soap  
If skin irritation occurs: Get medical advice and attention  
Take off all contaminated clothing and wash it before reuse

### Spill

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 to an approved waste disposal plant

## Other information

Harmful to aquatic life.

## 3. Composition/information on ingredients

### Substance

Not applicable.



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## Mixture

**Chemical nature** aqueous solution.

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Nitric Acid	7697-37-2	0 - 10%	-	

## **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.
- 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 medical attention if irritation develops and persists.
- 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 doctor.
- 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** May cause redness and tearing of the eyes. Burning sensation.

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

**Note to doctors** Treat symptomatically.

## **5. Fire-fighting measures**

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.



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<b>Large Fire</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Unsuitable extinguishing media</b>	Do not scatter spilled material with high pressure water streams.
<b>Specific hazards arising from the chemical</b>	No information available.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Special protective equipment and precautions for fire-fighters</b>	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

<b>Personal precautions</b>	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.
<b>Other information</b>	Refer to protective measures listed in Sections 7 and 8.

### Methods and material for containment and cleaning up

<b>Methods for containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up</b>	Pick up and transfer to properly labelled containers.

## 7. Handling and storage

### Precautions for safe handling

<b>Advice on safe handling</b>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse.
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### Conditions for safe storage, including any incompatibilities

<b>Storage Conditions</b>	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
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materials.

## 8. Exposure controls/personal protection

### Control parameters

#### Exposure Limits

Chemical name	Alberta	British Columbia	Ontario	Quebec
Nitric Acid 7697-37-2	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>

### 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). If splashes are likely to occur, wear safety glasses with side-shields.

**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** No protective equipment is needed under normal use conditions. 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.

**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.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

**Physical state** Liquid  
**Appearance** Liquid  
**Colour** colourless  
**Odour** Odourless  
**Odour threshold** No information available



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<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	0 °C / 32 °F	None known
Initial boiling point and boiling range	100 °C / 212 °F	None known
Flash point	No data available	None known
Evaporation rate	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	
Vapour pressure	23 hPa	@ 20°C
Relative vapour density	No data available	None known
Relative density	0.99821 g/cm <sup>3</sup> at 20 °C	None known
Water solubility	No data available	None known
Solubility in other solvents	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	100 °C / 212 °F	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
<u>Other information</u>		
Explosive properties	No information available.	
Oxidising 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

Oxidising agent. Strong acids. Strong bases.

**Hazardous decomposition products** None known based on information supplied.

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## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

<b>Inhalation</b>	Specific test data for the substance or mixture is not available.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

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

<b>Symptoms</b>	Redness. May cause redness and tearing of the eyes.
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### Acute toxicity

#### Numerical measures of toxicity

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

<b>ATEmix (oral)</b>	99,999.00 mg/kg
<b>ATEmix (dermal)</b>	99,999.00 mg/kg
<b>ATEmix (inhalation-gas)</b>	99,999.00 ppm
<b>ATEmix (inhalation-dust/mist)</b>	99,999.00 mg/l
<b>ATEmix (inhalation-vapour)</b>	139.50 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

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

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes skin irritation.
<b>Serious eye damage/eye irritation</b>	Classification based on data available for ingredients. Causes serious eye irritation.
<b>Respiratory or skin sensitisation</b>	No information available.



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<b>Germ cell mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	The table below indicates whether each agency has listed any ingredient as a carcinogen.
<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Target organ effects</b>	Respiratory system, Eyes, Skin, Teeth.
<b>Aspiration hazard</b>	No information available.

## 12. Ecological information

<b>Ecotoxicity</b>	Harmful to aquatic life with long lasting effects.
<b>Persistence and degradability</b>	No information available.
<b>Bioaccumulation</b>	There is no data for this product.

### Component Information

Chemical name	Partition coefficient
Nitric Acid 7697-37-2	-2.3

<b>Other adverse effects</b>	No information available.
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## 13. Disposal considerations

### Disposal methods

<b>Waste from residues/unused products</b>	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
<b>Contaminated packaging</b>	Do not reuse empty containers.



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## 14. Transport information

### 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
Marine pollutant	NP.
Description	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III

### DOT

#### Notes

**RQ status of the product cannot be determined. At least one component in this product has an associated DOT RQ. The net quantity of the product in the package as shipped is not available. If the net quantity of the component in the package (as shipped) exceeds the RQ Value, then the "RQ" phrase and the component name(s) may need to be added to the Shipping Description.**

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)	(Mercury: RQ (kg)= 0.45) Mercury: RQ (lb)= 1.00
Reportable quantity (kg) (calculated)	Mercury: RQ (kg)= 15133.33
Reportable quantity (lbs) (calculated)	Mercury: RQ (lb)= 33333.00
DOT Marine Pollutant	NP.
Description	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III
Special Provisions	IB3, T7, TP1, TP28
Emergency Response Guide Number	154

### 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
Description	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III
Special Provisions	223, 274

### IATA

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
ERG Code	8L
Special Provisions	A3, A803
Description	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III



# SAFETY DATA SHEET

5190-9766 - ICH/USP Target Elements Standard A

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## IMDG

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
EmS-No.	F-A, S-B
Special Provisions	223, 274
Marine pollutant	NP
Description	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III

## 15. Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 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

#### International Inventories

TSCA	Complies.
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.
AIC	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

## 16. Other information

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

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



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**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  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australian 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)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

**Revision date** 01-Sep-2023

**Revision Note** No information available.

**Disclaimer**

**The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.**

**End of Safety Data Sheet**



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
HPR, Schedule 1

Revision date 01-Sep-2023

Revision Number 1

## 1. Identification

### Product identifier

**Product Name** ICH/USP Oral Target Elements Standard B

### Other means of identification

**Product Code(s)** 5190-9767

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

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

**Restrictions on use** No information available

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

#### Initial supplier identifier

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 identification

### Classification

Classification according to WHIMIS

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Chronic aquatic toxicity	Category 2
Corrosive to metals	Category 1

### Label elements

**Warning**

# SAFETY DATA SHEET

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## Hazard statements

Classification according to WHIMIS  
Causes skin irritation  
Causes serious eye irritation  
Toxic to aquatic life with long lasting effects  
May be corrosive to metals



## Precautionary Statements - Prevention

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 and face protection

## Precautionary Statements - Response

### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice and attention

### Skin

IF ON SKIN: Wash with plenty of water and soap  
If skin irritation occurs: Get medical advice and attention  
Take off all contaminated clothing and wash it before reuse

### Spill

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 to an approved waste disposal plant

## Other information

Toxic to aquatic life.

## 3. Composition/information on ingredients

### Substance

Not applicable.



# SAFETY DATA SHEET

5190-9767 - ICH/USP Oral Target Elements Standard B

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## Mixture

**Chemical nature** aqueous solution.

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Nitric Acid	7697-37-2	0 - 10%	-	

## **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.

**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 medical attention if irritation develops and persists.

**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 doctor.

**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** May cause redness and tearing of the eyes. Burning sensation.

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

**Note to doctors** Treat symptomatically.

## **5. Fire-fighting measures**

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.



# SAFETY DATA SHEET

5190-9767 - ICH/USP Oral Target Elements Standard B

Revision date 01-Sep-2023

<b>Large Fire</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Unsuitable extinguishing media</b>	Do not scatter spilled material with high pressure water streams.
<b>Specific hazards arising from the chemical</b>	No information available.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Special protective equipment and precautions for fire-fighters</b>	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

<b>Personal precautions</b>	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.
<b>Other information</b>	Refer to protective measures listed in Sections 7 and 8.

### Methods and material for containment and cleaning up

<b>Methods for containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up</b>	Pick up and transfer to properly labelled containers.

## 7. Handling and storage

### Precautions for safe handling

<b>Advice on safe handling</b>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse.
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### Conditions for safe storage, including any incompatibilities

<b>Storage Conditions</b>	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
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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	Alberta	British Columbia	Ontario	Quebec
Nitric Acid 7697-37-2	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>

### 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). If splashes are likely to occur, wear safety glasses with side-shields.

**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** No protective equipment is needed under normal use conditions. 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.

**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.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

**Physical state** Liquid  
**Appearance** Liquid  
**Colour** colourless  
**Odour** Odourless



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5190-9767 - ICH/USP Oral Target Elements Standard B

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Odour threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	0 °C / 32 °F	None known
Initial boiling point and boiling range	100 °C / 212 °F	None known
Flash point	No data available	None known
Evaporation rate	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	
Vapour pressure	23 hPa	@ 20°C
Relative vapour density	No data available	None known
Relative density	0.99821 g/cm <sup>3</sup> at 20 °C	None known
Water solubility	No data available	None known
Solubility in other solvents	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	100 °C / 212 °F	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

## Other information

Explosive properties	No information available.
Oxidising 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

Oxidising agent. Strong acids. Strong bases.

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**Hazardous decomposition products** None known based on information supplied.

## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

<b>Inhalation</b>	Specific test data for the substance or mixture is not available.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

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

<b>Symptoms</b>	Redness. May cause redness and tearing of the eyes.
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### Acute toxicity

#### Numerical measures of toxicity

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

<b>ATEmix (oral)</b>	99,999.00 mg/kg
<b>ATEmix (dermal)</b>	99,999.00 mg/kg
<b>ATEmix (inhalation-gas)</b>	99,999.00 ppm
<b>ATEmix (inhalation-dust/mist)</b>	99,999.0000 mg/l
<b>ATEmix (inhalation-vapour)</b>	139.50 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

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

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes skin irritation.
<b>Serious eye damage/eye irritation</b>	Classification based on data available for ingredients. Causes serious eye irritation.
<b>Respiratory or skin sensitisation</b>	No information available.



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<b>Germ cell mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	The table below indicates whether each agency has listed any ingredient as a carcinogen.
<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Target organ effects</b>	Respiratory system, Eyes, Skin, Teeth.
<b>Aspiration hazard</b>	No information available.

## 12. Ecological information

<b>Ecotoxicity</b>	Toxic to aquatic life with long lasting effects.
<b>Persistence and degradability</b>	No information available.
<b>Bioaccumulation</b>	There is no data for this product.

### Component Information

Chemical name	Partition coefficient
Nitric Acid 7697-37-2	-2.3

<b>Other adverse effects</b>	No information available.
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## 13. Disposal considerations

### Disposal methods

<b>Waste from residues/unused products</b>	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
<b>Contaminated packaging</b>	Do not reuse empty containers.



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## 14. Transport information

### 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  
**Marine pollutant** P.  
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III

### 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  
**DOT Marine Pollutant** P.  
**Marine pollutant** Silver  
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III, Marine pollutant (Silver)  
**Special Provisions** IB3, T7, TP1, TP28  
**Emergency Response Guide Number** 154

### 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  
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III  
**Special Provisions** 223, 274

### IATA

**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  
**ERG Code** 8L  
**Special Provisions** A3, A803  
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III

### IMDG

**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  
**EmS-No.** F-A, S-B  
**Special Provisions** 223, 274



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**Marine pollutant**  
**Description**

P  
UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III, Marine pollutant

## 15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

### 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>	Complies.
<b>DSL/NDSL</b>	Contact supplier for inventory compliance status.
<b>EINECS/ELINCS</b>	Contact supplier for inventory compliance status.
<b>ENCS</b>	Contact supplier for inventory compliance status.
<b>IECSC</b>	Contact supplier for inventory compliance status.
<b>KECL</b>	Contact supplier for inventory compliance status.
<b>PICCS</b>	Contact supplier for inventory compliance status.
<b>AICS</b>	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

## 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> 3	<b>Flammability</b> 0	<b>Physical hazards</b> 0	<b>Personal protection</b> X

### 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)



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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  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australian 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)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

**Revision date** 01-Sep-2023

**Revision Note** No information available.

**Disclaimer**

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

**End of Safety Data Sheet**



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
HPR, Schedule 1

Revision date 28-Aug-2023

Revision Number 1

## 1. Identification

### Product identifier

**Product Name** ICH/USP Oral Target Elements Std C\_v2

### Other means of identification

**Product Code(s)** 5191-4555

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

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

### Restrictions on use

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

#### Initial supplier identifier

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 identification

### Classification

Classification according to WHIMIS

Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

### Label elements

**Danger**

**Hazard statements**

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Classification according to WHIMIS  
Causes severe skin burns and eye damage  
May be corrosive to metals



### Precautionary Statements - Prevention

Do not breathe dust, fume, gas, mist, vapors and spray  
Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves, protective clothing, eye protection and face protection  
Keep only in original packaging

### Precautionary Statements - Response

Immediately call a POISON CENTRE or doctor

#### Eyes

Immediately call a POISON CENTRE or doctor

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

#### Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]

Wash contaminated clothing before reuse

#### Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing

Immediately call a POISON CENTRE or doctor

#### Ingestion

IF SWALLOWED: rinse mouth. Do NOT induce vomiting

#### Spill

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 and container to an approved waste disposal plant

### Other information

No information available.

## 3. Composition/information on ingredients

### Substance



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Not applicable.

## Mixture

The product contains no substances which at their given concentration, are considered to be hazardous to health

**Chemical nature** aqueous solution.

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Hydrochloric acid	7647-01-0	0 - 10%	-	

## 4. First-aid measures

### Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Inhalation</b>	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.
<b>Ingestion</b>	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention.
<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

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

**Symptoms** Burning sensation.

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

**Note to doctors** Product is a corrosive material. Use of gastric lavage or emesis is contra-indicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical



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antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Large Fire</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Unsuitable extinguishing media</b>	Do not scatter spilled material with high pressure water streams.
<b>Specific hazards arising from the chemical</b>	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Special protective equipment and precautions for fire-fighters</b>	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

<b>Personal precautions</b>	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
<b>Other information</b>	Refer to protective measures listed in Sections 7 and 8.

### Methods and material for containment and cleaning up

<b>Methods for containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up</b>	Pick up and transfer to properly labelled containers.

## 7. Handling and storage

### Precautions for safe handling



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

**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	Alberta	British Columbia	Ontario	Quebec
Hydrochloric acid 7647-01-0	Ceiling: 2 ppm Ceiling: 3 mg/m <sup>3</sup>	Ceiling: 2 ppm	CEV: 2 ppm	Ceiling: 2 ppm

**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. Face protection shield.

**Hand protection** Wear protective nitrile rubber 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. Chemical resistant apron.

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

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

**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

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protection. Regular cleaning of equipment, work area and clothing is recommended. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Liquid
Colour	colourless
Odour	Odourless
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	No data available	None known
Initial boiling point and boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	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	
Vapour pressure	No data available	None known
Relative vapour density	No data available	None known
Relative density	No data available	None known
Water solubility	No data available	None known
Solubility in other solvents	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
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.
Oxidising 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



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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

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

##### Eye contact

Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.

##### Skin contact

Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns.

##### Ingestion

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

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

#### Symptoms

Redness. Burning. May cause blindness. Coughing and/ or wheezing.

### Acute toxicity

#### Numerical measures of toxicity

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

ATEmix (oral)	99,999.00 mg/kg
ATEmix (dermal)	99,999.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-dust/mist)	99,999.00 mg/l
ATEmix (inhalation-vapour)	99,999.00 mg/l

### Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Hydrochloric acid 7647-01-0	238 - 277 mg/kg ( Rat )	> 5010 mg/kg ( Rabbit )	= 1.68 mg/L ( Rat ) 1 h

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

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes severe skin burns and eye damage.
<b>Serious eye damage/eye irritation</b>	Classification based on data available for ingredients. Causes serious eye damage. Causes burns.
<b>Respiratory or skin sensitisation</b>	No information available.
<b>Germ cell mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	No information available.
<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Target organ effects</b>	Respiratory system, Eyes, Skin, Lungs, Nasal Cavities.
<b>Aspiration hazard</b>	No information available.

### 12. Ecological information

<b>Ecotoxicity</b>	The environmental impact of this product has not been fully investigated.
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**Persistence and degradability** No information available.

**Bioaccumulation** 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.

## 14. Transport information

### TDG

**UN number or ID number** UN1789  
**UN proper shipping name** Hydrochloric acid solution  
**Transport hazard class(es)** 8  
**Packing group** II  
**Marine pollutant** NP.  
**Description** UN1789, Hydrochloric acid solution, 8, II

### DOT

**UN number or ID number** UN1789  
**Extended proper shipping name** Hydrochloric acid solution  
**Transport hazard class(es)** 8  
**Packing group** II  
**DOT Marine Pollutant** NP.  
**Description** UN1789, Hydrochloric acid solution, 8, II  
**Special Provisions** 386, A3, B3, B15, B133, IB2, N41, T8, TP2  
**Emergency Response Guide Number** 157

### MEX

**UN number or ID number** UN1789  
**UN proper shipping name** Hydrochloric acid solution  
**Transport hazard class(es)** 8  
**Packing group** II



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<b>Description</b>	UN1789, Hydrochloric acid solution, 8, II
<b>IATA</b>	
<b>UN number or ID number</b>	UN1789
<b>UN proper shipping name</b>	Hydrochloric acid solution
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	II
<b>ERG Code</b>	8L
<b>Special Provisions</b>	A3, A803
<b>Description</b>	UN1789, Hydrochloric acid solution, 8, II
<b>IMDG</b>	
<b>UN number or ID number</b>	UN1789
<b>UN proper shipping name</b>	Hydrochloric acid solution
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	II
<b>EmS-No.</b>	F-A, S-B
<b>Marine pollutant</b>	NP
<b>Description</b>	UN1789, Hydrochloric acid solution, 8, II

## 15. Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 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>	Complies under research and development exemption or is regulated by a different government agency.
<b>DSL/NDSL</b>	Contact supplier for inventory compliance status.
<b>EINECS/ELINCS</b>	Contact supplier for inventory compliance status.
<b>ENCS</b>	Contact supplier for inventory compliance status.
<b>IECSC</b>	Contact supplier for inventory compliance status.
<b>KECL</b>	Contact supplier for inventory compliance status.
<b>PICCS</b>	Contact supplier for inventory compliance status.
<b>AIIIC</b>	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



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

**AICS** - Australian Inventory of Chemical Substances

## 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> 3	<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  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australian 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)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

**Revision date** 28-Aug-2023

**Revision Note** No information available.

#### **Disclaimer**

**The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.**

**End of Safety Data Sheet**



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
HPR, Schedule 1

Revision date 01-Sep-2023

Revision Number 1

## 1. Identification

### Product identifier

**Product Name** ICH/USP Oral Target Elements Standard D

### Other means of identification

**Product Code(s)** 5190-9769

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

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

### Restrictions on use

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

#### Initial supplier identifier

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 identification

### Classification

Classification according to WHIMIS

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 1B
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1
Corrosive to metals	Category 1

### Label elements

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## Danger

### Hazard statements

Classification according to WHIMIS  
Causes skin irritation  
Causes serious eye damage  
May cause cancer  
Very toxic to aquatic life with long lasting effects  
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 and face protection  
Wash face, hands and any exposed skin thoroughly after handling  
Avoid release to the environment  
Keep only in original packaging

### Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

#### Eyes

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 CENTRE or doctor

#### Skin

IF ON SKIN: Wash with plenty of water and soap  
If skin irritation occurs: Get medical advice and attention  
Take off all contaminated clothing and wash it before reuse

#### Spill

Collect spillage  
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 and container to an approved waste disposal plant

### Other information

Very toxic to aquatic life.



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## 3. Composition/information on ingredients

### Substance

Not applicable.

### Mixture

Chemical nature aqueous solution.

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Nitric Acid	7697-37-2	0 - 10%	-	
Chromium (III) nitrate nonahydrate	7789-02-8	0 - 10%	-	
Copper	7440-50-8	0 - 10%	-	
Barium nitrate	10022-31-8	0 - 10%	-	
Antimony	7440-36-0	0 - 10%	-	
hydrofluoric acid	7664-39-3	0 - 10%	-	

### 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 advice/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 doctor.

#### 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



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**Symptoms** Burning sensation.

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

**Note to doctors** 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 labelled containers.

## 7. Handling and storage

**Precautions for safe handling**



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**Advice on safe handling**

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse.

**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	Alberta	British Columbia	Ontario	Quebec
Nitric Acid 7697-37-2	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>
Chromium (III) nitrate nonahydrate 7789-02-8	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
Copper 7440-50-8	TWA: 0.2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>
Barium nitrate 10022-31-8	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
Antimony 7440-36-0	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
hydrofluoric acid 7664-39-3	Ceiling: 2 ppm Ceiling: 1.6 mg/m <sup>3</sup> TWA: 0.5 ppm TWA: 0.4 mg/m <sup>3</sup>	TWA: 2.5 mg/m <sup>3</sup> Ceiling: 2 ppm Skin	TWA: 0.5 ppm CEV: 2 ppm Skin	TWA: 2.5 mg/m <sup>3</sup> Ceiling: 3 ppm Ceiling: 2.6 mg/m <sup>3</sup>

**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.



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<b>Hand protection</b>	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.
<b>Skin and body protection</b>	Wear suitable protective clothing. Long sleeved 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>	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.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

<b>Physical state</b>	Liquid
<b>Appearance</b>	Liquid
<b>Colour</b>	colourless
<b>Odour</b>	Odourless
<b>Odour 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>Initial boiling point and 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</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Vapour pressure</b>	No data available	None known
<b>Relative vapour 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 in other solvents</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	No data available	None known
<b>Decomposition temperature</b>		None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known

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## Other information

<b>Explosive properties</b>	No information available.
<b>Oxidising properties</b>	No information available.
<b>Softening point</b>	No information available
<b>Molecular weight</b>	No information available
<b>VOC content</b>	No information available
<b>Liquid Density</b>	No information available
<b>Bulk density</b>	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

Oxidising 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

<b>Inhalation</b>	Specific test data for the substance or mixture is not available.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

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

<b>Symptoms</b>	Redness. Burning. May cause blindness. May cause redness and tearing of the eyes.
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### Acute toxicity



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## Numerical measures of toxicity

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

ATEmix (oral)	99,999.00 mg/kg
ATEmix (dermal)	99,999.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-dust/mist)	99,999.00 mg/l
ATEmix (inhalation-vapour)	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	= 355 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

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes skin irritation.
<b>Serious eye damage/eye irritation</b>	Classification based on data available for ingredients. Causes burns. Causes serious eye damage.
<b>Respiratory or skin sensitisation</b>	No information available.
<b>Germ cell mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	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
Chromium (III) nitrate nonahydrate	-	Group 3	-	X



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7789-02-8				
Barium nitrate 10022-31-8	-	-	-	X

**Legend**

**IARC (International Agency for Research on Cancer)**

Group 3 - Not Classifiable as to Carcinogenicity in Humans

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

X - Present

**Reproductive toxicity** No information available.

**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.

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Copper 7440-50-8	EC50: 0.031 - 0.054mg/L (96h, Pseudokirchneriella subcapitata) EC50: 0.0426 - 0.0535mg/L (72h, Pseudokirchneriella subcapitata)	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, Cyprinus carpio) LC50: =0.112mg/L (96h, Poecilia reticulata)	-	EC50: =0.03mg/L (48h, Daphnia magna)
Antimony 7440-36-0	-	LC50: >6.2 - 8.3mg/L (96h, Cyprinodon variegatus)	-	-



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hydrofluoric acid 7664-39-3	-	-	-	EC50: =270mg/L (48h, Daphnia species)
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**Persistence and degradability** No information available.

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

### Component Information

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

**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.

## 14. Transport information

### TDG

#### Notes

**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** II  
**Special Provisions** 16  
**Marine pollutant** P.  
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid), 8, II

**No components found suitable for Marine Pollutant Name.**

### DOT

**UN number or ID number** UN3264  
**Extended proper shipping name** Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid)  
**Transport hazard class(es)** 8  
**Packing group** II  
**Reportable Quantity (RQ)** (Nitric Acid: RQ (kg)= 454.00) Nitric Acid: RQ (lb)= 1000.00



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<b>Reportable quantity (kg) (calculated)</b>	Nitric Acid: RQ (kg)= 7566.67
<b>Reportable quantity (lbs) (calculated)</b>	Nitric Acid: RQ (lb)= 16667.00
<b>DOT Marine Pollutant</b>	P.
<b>Marine pollutant</b>	Copper
<b>Description</b>	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid), 8, II, Marine pollutant (Copper)
<b>Special Provisions</b>	386, B2, IB2, T11, TP2, TP27
<b>Emergency Response Guide Number</b>	154
<b>MEX</b>	
<b>UN number or ID number</b>	UN3264
<b>UN proper shipping name</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid)
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	II
<b>Description</b>	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid), 8, II
<b>Special Provisions</b>	274
<b>IATA</b>	
<b>UN number or ID number</b>	UN3264
<b>UN proper shipping name</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid)
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	III
<b>ERG Code</b>	8L
<b>Special Provisions</b>	A3, A803
<b>Description</b>	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid), 8, II
<b>IMDG</b>	
<b>UN number or ID number</b>	UN3264
<b>UN proper shipping name</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid)
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	II
<b>EmS-No.</b>	F-A, S-B
<b>Special Provisions</b>	274
<b>Marine pollutant</b>	P
<b>Description</b>	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid), 8, II, Marine pollutant

## 15. Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable



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The Rotterdam Convention Not applicable

## International Inventories

TSCA	Complies.
DSL/NDL	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.
AIC	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 and Evaluated Chemical Substances
- PICCS - Philippines Inventory of Chemicals and Chemical Substances
- AICS - Australian Inventory of Chemical Substances

## 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> 3 *	<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  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australian 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)



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National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

**Revision date** 01-Sep-2023

**Revision Note** No information available.

**Disclaimer**

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

**End of Safety Data Sheet**



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
HPR, Schedule 1

Revision date 01-Sep-2023

Revision Number 1

## 1. Identification

### Product identifier

**Product Name** Pharma Internal Standard 1

### Other means of identification

**Product Code(s)** 5190-9770

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

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

**Restrictions on use** No information available

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

#### Initial supplier identifier

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 identification

### Classification

Classification according to WHIMIS

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Corrosive to metals	Category 1

### Label elements

**Warning**

**Hazard statements**

# SAFETY DATA SHEET

5190-9770 - Pharma Internal Standard 1

Revision date 01-Sep-2023

Classification according to WHIMIS  
Causes skin irritation  
Causes serious eye irritation  
May be corrosive to metals



#### Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling  
Keep only in original packaging  
Wear protective gloves, protective clothing, eye protection and face protection

#### Precautionary Statements - Response

##### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice and attention

##### Skin

IF ON SKIN: Wash with plenty of water and soap  
If skin irritation occurs: Get medical advice and attention  
Take off all contaminated clothing and wash it before reuse

##### Spill

Absorb spillage to prevent material damage

#### Precautionary Statements - Storage

Store in corrosion resistant container with a resistant inner liner

#### Other information

No information available.

### 3. Composition/information on ingredients

#### Substance

Not applicable.

#### Mixture

**Chemical nature** aqueous solution.

Chemical name	CAS No.	Weight-%	Hazardous Material	Date HMIRA filed and
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# SAFETY DATA SHEET

5190-9770 - Pharma Internal Standard 1

Revision date 01-Sep-2023

			Information Review Act registry number (HMIRA registry #)	date exemption granted (if applicable)
Nitric Acid	7697-37-2	0 - 10%	-	
hydrofluoric acid	7664-39-3	0 - 10%	-	

## 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

<b>General advice</b>	Show this safety data sheet to the doctor in attendance.
<b>Inhalation</b>	Remove to fresh air. Get medical attention immediately if symptoms occur.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a doctor.
<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

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

**Symptoms** May cause redness and tearing of the eyes. Burning sensation.

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

**Note to doctors** Treat symptomatically.

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Large Fire</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Unsuitable extinguishing media</b>	Do not scatter spilled material with high pressure water streams.



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**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 labelled 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. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse.

**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.

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## 8. Exposure controls/personal protection

### Control parameters

#### Exposure Limits

Chemical name	Alberta	British Columbia	Ontario	Quebec
Nitric Acid 7697-37-2	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>
hydrofluoric acid 7664-39-3	Ceiling: 2 ppm Ceiling: 1.6 mg/m <sup>3</sup> TWA: 0.5 ppm TWA: 0.4 mg/m <sup>3</sup>	TWA: 2.5 mg/m <sup>3</sup> Ceiling: 2 ppm Skin	TWA: 0.5 ppm CEV: 2 ppm Skin	TWA: 2.5 mg/m <sup>3</sup> Ceiling: 3 ppm Ceiling: 2.6 mg/m <sup>3</sup>

### 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). If splashes are likely to occur, wear safety glasses with side-shields.

**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** No protective equipment is needed under normal use conditions. 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.

**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.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

**Physical state** Liquid  
**Appearance** Liquid  
**Colour** colourless  
**Odour** Odourless



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**Odour threshold** 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>Initial boiling point and 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</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Vapour pressure</b>	No data available	None known
<b>Relative vapour 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 in other solvents</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	No data available	None known
<b>Decomposition temperature</b>		None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known

## Other information

<b>Explosive properties</b>	No information available.
<b>Oxidising properties</b>	No information available.
<b>Softening point</b>	No information available
<b>Molecular weight</b>	No information available
<b>VOC content</b>	No information available
<b>Liquid Density</b>	No information available
<b>Bulk density</b>	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**

Oxidising agent. Strong acids. Strong bases.

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**Hazardous decomposition products** None known based on information supplied.

## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

<b>Inhalation</b>	Specific test data for the substance or mixture is not available.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

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

<b>Symptoms</b>	Redness. May cause redness and tearing of the eyes.
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### Acute toxicity

#### Numerical measures of toxicity

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

<b>ATEmix (oral)</b>	99,999.00 mg/kg
<b>ATEmix (dermal)</b>	99,999.00 mg/kg
<b>ATEmix (inhalation-gas)</b>	99,999.00 ppm
<b>ATEmix (inhalation-dust/mist)</b>	99,999.00 mg/l
<b>ATEmix (inhalation-vapour)</b>	139.50 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
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 serious eye irritation.



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<b>Respiratory or skin sensitisation</b>	No information available.
<b>Germ cell mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	No information available.
<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Target organ effects</b>	Respiratory system, Eyes, Skin, Teeth.
<b>Aspiration hazard</b>	No information available.

## 12. Ecological information

### Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
hydrofluoric acid 7664-39-3	-	-	-	EC50: =270mg/L (48h, Daphnia species)

**Persistence and degradability** No information available.

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

### Component Information

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

**Other adverse effects** No information available.

## 13. Disposal considerations



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## 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.

## 14. Transport information

### 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** NP.  
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid), 8, III

### DOT

**UN number or ID number** UN3264  
**Extended proper shipping name** Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid)  
**Transport hazard class(es)** 8  
**Packing group** III  
**DOT Marine Pollutant** NP.  
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid), 8, III  
**Special Provisions** IB3, T7, TP1, TP28  
**Emergency Response Guide Number** 154

### 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  
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid), 8, III  
**Special Provisions** 223, 274

### 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  
**ERG Code** 8L  
**Special Provisions** A3, A803  
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid), 8, III

### IMDG



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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	NP
Description	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluoric acid), 8, III

## 15. Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 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	Complies.
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.
AIC	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

## 16. Other information

<u>NFPA</u>	Health hazards 3	Flammability 0	Instability 0	Special hazards -
<u>HMIS</u>	Health hazards 3	Flammability 0	Physical hazards 0	Personal protection X

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



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## 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  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australian 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)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

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Revision Note No information available.

### Disclaimer

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**End of Safety Data Sheet**