



# SAFETY DATA SHEET

Issuing Date 14-May-2025

Revision date 14-May-2025

Revision Number 1

## Section 1: Identification of the substance/mixture and of the company/undertaking

### Product identifier

**Product Code(s)** 5184-3566  
**Product Name** ICP-MS Tuning Sol 10 ug/L

### Other means of identification

**Synonyms** No information available

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

**Recommended use** Reagents and Standards for Analytical Chemical Laboratory Use  
**Uses advised against** No information available

### Supplier's details

#### Supplier

Agilent Technologies Deutschland GmbH  
Hewlett-Packard-Str. 8  
76337 Waldbronn  
Germany

0800 603 1000

For further information, please contact

### Emergency telephone number

**Emergency Telephone** CHEMTREC®: +60 3-9212 5794  
**E-mail address** pdl-msds\_author@agilent.com

## SECTION 2: Hazard identification

### Classification of the substance or mixture

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

### Label elements

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**Signal word**

Warning

**Hazard statements**

H290 - May be corrosive to metals

H315 - Causes skin irritation

H319 - Causes serious eye irritation

**Precautionary statements**

P264 - Wash face, hands and any exposed skin thoroughly after handling

P280 - Wear eye and face protection

P406 - Store in corrosive resistant aluminium container with a resistant inner liner

P234 - Keep only in original container

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337 + P313 - If eye irritation persists: Get medical advice/attention

**Other hazards which do not result in classification**

No information available.

**Section 3: Composition/information on ingredients****Substance**

Not applicable

**Mixture****Chemical nature** aqueous solution.

Chemical name	CAS No.	Weight-%
Nitric Acid	7697-37-2	1.9

**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.

**SECTION 4: First aid measures****Description of necessary 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.**Skin contact** Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

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<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>Ingestion</b>	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a doctor.
<b>Specific first aid facilities</b>	Have eye-wash facilities immediately available. Facilities for quickly drenching the body should be provided within the immediate work area for emergency use where there is a possibility of exposure.
<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 immediate medical attention and special treatment needed, if necessary

**Note to doctors** Treat symptomatically.

## **SECTION 5: Firefighting measures**

### Suitable (and unsuitable) extinguishing media

**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.

### Special protective equipment and precautions for fire-fighters

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

## **SECTION 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.

**For emergency responders** Use personal protection recommended in Section 8.

### Environmental precautions

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**Environmental precautions** Prevent further leakage or spillage if safe to do so.

## 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.

## Precautions to prevent secondary hazards

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

## SECTION 7: Handling and storage

### Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust/fume/gas/mist/vapours/spray. 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.

**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.

### 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.

**Incompatible materials** Oxidising agent. Strong acids. Strong bases.

## Section 8: Exposure controls and personal protection

### Control parameters

#### Exposure Limits

Chemical name	Malaysia	ACGIH TLV
Nitric Acid 7697-37-2	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup>	TWA: 2 ppm STEL: 4 ppm

#### Biological occupational exposure limits

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

### Appropriate engineering controls

**Engineering controls** Showers  
Eyewash stations

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Ventilation systems.

## Individual protection measures, such as personal protective equipment

<b>Eye/face protection</b>	Avoid contact with eyes. Wear safety glasses with side shields (or goggles). If splashes are likely to occur, wear safety glasses with side-shields.
<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>	No information available.

## **SECTION 9: Physical and chemical properties**

### Information on basic physical and chemical properties

<b>Appearance</b>	Liquid	<b>Colour</b>	colourless
<b>Physical state</b>	Liquid	<b>Odour threshold</b>	No information available
<b>Odour</b>	Odourless.		

<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>Upper/lower flammability or explosive limits</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(ies)</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	No data available	None known
<b>Decomposition temperature</b>	No data available	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>Molecular weight</b>	No information available
<b>VOC content</b>	No information available
<b>Particle characteristics</b>	

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## SECTION 10: Stability and reactivity

### Reactivity

**Reactivity** Contact with acids liberates very toxic gas.

### Chemical stability

**Stability** Stable under normal conditions.

### Explosion data

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

### Possibility of hazardous reactions

**Possibility of hazardous reactions** None under normal processing.

### Conditions to avoid

**Conditions to avoid** Exposure to air or moisture over prolonged periods. Exposure to air or moisture over prolonged periods.

### Incompatible materials

**Incompatible materials** Oxidising agent Strong acids Strong bases

### Hazardous decomposition products

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

## SECTION 11: Toxicological information

### Information on the likely routes of exposure

#### Product Information

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

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

**Symptoms** Redness. May cause redness and tearing of the eyes.

### Acute toxicity

#### Numerical measures of toxicity

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

**ATEmix (oral)** 99,999.00 mg/kg

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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) 157.90 mg/l

**Chronic (long-term) toxicity** No information available

## Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water	> 90 mL/kg ( Rat )		
Nitric Acid			= 2500 ppm ( Rat ) 1 h ATE (vapours) = 2.65 mg/L
Cerium(III) nitrate hexahydrate	= 4200 mg/kg ( Rat )		
Yttrium oxide	> 5g/kg (Rat)		> 5.09 mg/L (Rat) 4h
Lithium carbonate	= 525 mg/kg ( Rat )	> 3000 mg/kg ( Rabbit )	> 2 mg/L ( Rat ) 4 h
Cobalt	= 6171 mg/kg ( Rat )		< 0.05 mg/L ( Rat ) 4 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.

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

**Germ cell mutagenicity** No information available.

**Carcinogenicity** No information available.

**Reproductive toxicity** No information available.

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

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

**Aspiration hazard** No information available.

## SECTION 12: Ecological information

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## Ecotoxicity

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

## Persistence and degradability

**Persistence and degradability** No information available.

## Bioaccumulative potential

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

## Component Information

Chemical name	Partition coefficient
Nitric Acid	-2.3

## Mobility

**Mobility in soil** No information available.

**PBT and vPvB assessment** The product does not contain any substance(s) classified as PBT or vPvB above the threshold of declaration.

Chemical name	PBT and vPvB assessment
Nitric Acid	The substance is not PBT / vPvB.

## Other adverse effects

**Other adverse effects** No information available.

## Endocrine Disruptor Information

Chemical name	EU - REACH (1907/2006) - Article 59(1) - Candidate List of Substances of Very High Concern (SVHC) for Authorisation	EU - REACH (1907/2006) - Endocrine Disruptor Assessment List of Substances
Nitric Acid	-	-

## **SECTION 13: Disposal information**

### 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.

## **SECTION 14: Transportation information**

### IMDG

**UN number** UN3264

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<b>UN proper shipping name</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	III
<b>Description</b>	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III
<b>Marine pollutant</b>	Not applicable
<b>Environmental hazards</b>	No
<b>Special Provisions</b>	223, 274
<b>EmS-No.</b>	F-A S-B
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	No information available

## RID

<b>UN number</b>	UN3264
<b>UN proper shipping name</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	III
<b>Description</b>	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III
<b>Environmental hazards</b>	No
<b>Special Provisions</b>	274
<b>Classification code</b>	C1

## ADR

<b>UN number</b>	UN3264
<b>UN proper shipping name</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	III
<b>Description</b>	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III, (E)
<b>Environmental hazards</b>	No
<b>Special Provisions</b>	274
<b>Classification code</b>	C1
<b>Tunnel restriction code</b>	(E)

## IATA

<b>UN number</b>	UN3264
<b>UN proper shipping name</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	III
<b>Description</b>	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III
<b>Environmental hazards</b>	No
<b>Special Provisions</b>	A3, A803
<b>ERG Code</b>	8L

**Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**

<b>Special precautions for user</b>	Please refer to the applicable dangerous goods regulations for additional information
<b>Hazchem code</b>	2X

## **SECTION 15: Regulatory information**

### **Safety, health and environmental regulations specific for the product in question**

#### **National regulations**

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## Malaysia - Applicable regulations:

### OSHA (Occupational Safety and Health Act) 1994 and relevant regulations

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations  
Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations

An occupational medicine specialist familiar with national and regional regulations and standards must be consulted to establish a program of medical examinations for workers exposed to substances with biological limit values. See section 8 for national exposure control parameters.

Chemical name	Pre-employment screening and appropriate health surveillance
Nitric Acid - 7697-37-2	Listed

## Factories and Machinery Act 1967 and relevant regulations

### Environmental Quality Act 1974 and regulations

Road Transport (Construction and Use) (Dangerous Goods Vehicle) Rules 2015

## International Inventories

### TSCA

LGC, to the best of its ability, has confirmed that the chemical substances in this product are listed as "Active" in the EPA (Environmental Protection Agency) "TSCA Inventory Notification (Active-Inactive) Requirements Rule" ("the Final Rule") of Feb 2019, as amended Feb 2021."

### DSL/NDSL

Contact supplier for inventory compliance status.

### EINECS/ELINCS

Contact supplier for inventory compliance status.

### ENCS

Contact supplier for inventory compliance status.

### IECSC

Contact supplier for inventory compliance status.

### KECL

Contact supplier for inventory compliance status.

### PICCS

Contact supplier for inventory compliance status.

### AICS

Contact supplier for inventory compliance status.

### Legend:

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

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

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

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

**AICS** - Australian Inventory of Chemical Substances

## 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

## SECTION 16: Other information

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**Date of preparation of the SDS** 14-May-2025**Date of revision of the SDS** 14-May-2025**Revision Note** The symbol (\*) in the margin of this SDS indicates that this line has been revised.**Key or legend to abbreviations and acronyms used in the safety data sheet**

X - Listed

**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

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

**Disclaimer**

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**End of Safety Data Sheet**