Safety Data Sheet
acc. to OSHA HCS

Revision date: 09/26/2025

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1 Identification

· **Product identifier**

· **Product Name: Cadmium Standard**

· **Part no. :** ICP-148, ICP-148-25, ICP-148-L
· **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Agilent Technologies, Inc.
5301 Stevens Creek Blvd.
Santa Clara, CA 95051 USA

· **Information department:**
Telephone: 800-227-9770
e-mail: pdl-msds_author@agilent.com
· **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

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2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS05 Corrosion

Corrosive to Metals 1 H290 May be corrosive to metals.

GHS07

Skin Irritation 2	H315 Causes skin irritation.
Eye Irritation 2A	H319 Causes serious eye irritation.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS05

· **Signal word** Warning
· **Hazard statements**
H290 May be corrosive to metals.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
· **Precautionary statements**

P280	Wear protective gloves / eye protection / face protection.
P234	Keep only in original container.
P264	Wash thoroughly after handling.
P321	Specific treatment (see on this label).
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P302+P352	If on skin: Wash with plenty of water.

(Contd. on page 2)

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P390	Absorb spillage to prevent material damage.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P362+P364	Take off contaminated clothing and wash it before reuse.
P406	Store in corrosive resistant container with a resistant inner liner.

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

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3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

10022-68-1	Nitric acid, cadmium salt, tetrahydrate	2.7442%
7697-37-2	nitric acid	1.4%

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

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5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

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· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to section 13.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
10022-68-1	Nitric acid, cadmium salt, tetrahydrate	1.2 mg/m3
7697-37-2	nitric acid	0.16 ppm

· **PAC-2:**		
10022-68-1	Nitric acid, cadmium salt, tetrahydrate	13 mg/m3
7697-37-2	nitric acid	24 ppm

· **PAC-3:**		
10022-68-1	Nitric acid, cadmium salt, tetrahydrate	78 mg/m3
7697-37-2	nitric acid	92 ppm

7 Handling and storage

· **Handling:**
· **Precautions for safe handling** No special precautions are necessary if used correctly.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

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· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
10022-68-1 Nitric acid, cadmium salt, tetrahydrate	
PEL	Long-term value: 0.005 mg/m³ as Cd; see 29 CFR 1910.1027
REL	See Pocket Guide App. A
TLV	Long-term value: 0.01 0.002* mg/m³ as Cd; A2; *respirable fraction; BEI
7697-37-2 nitric acid	
PEL	Long-term value: 5 mg/m³, 2 ppm
REL	Short-term value: 10 mg/m³, 4 ppm Long-term value: 5 mg/m³, 2 ppm
TLV	Short-term value: 10 mg/m³, 4 ppm Long-term value: 5.2 mg/m³, 2 ppm

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.
· **Protection of hands:**
Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.
· **Material of gloves**
For normal use: nitrile rubber, 11-13 mil thickness
For direct contact with the chemical: butyl rubber, 12-15 mil thickness
· **Penetration time of glove material**
For normal use: nitrile rubber: 1 hour
For direct contact with the chemical: butyl rubber: >4 hours
· **Eye protection:**

Tightly sealed goggles

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Fluid
Color:	Colorless
· **Odor:**	Odorless
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	0 °C (32 °F)
Boiling point/Boiling range:	100 °C (212 °F)
· **Flash point:**	Not applicable.
· **Flammability:**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **Ignition temperature:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure at 20 °C (68 °F):**	23 hPa (17.3 mm Hg)
· **Density at 20 °C (68 °F):**	1.04455 g/cm³ (8.71677 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Water:	95.9 %
VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal
Solids content:	2.7 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.

(Contd. on page 6)

(Contd. of page 5)

· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

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11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
ATE (Acute Toxicity Estimate)		
Oral	LD50	10,932 mg/kg (rat)
Dermal	LD50	40,085 mg/kg
Inhalative	LC50/4 h	54.7 mg/L

10022-68-1 Nitric acid, cadmium salt, tetrahydrate		
Oral	LD50	300 mg/kg (rat)
7697-37-2 nitric acid		
Inhalative	LC50/4 h	67 mg/L (rat)

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
10022-68-1	Nitric acid, cadmium salt, tetrahydrate	1

· **NTP (National Toxicology Program)**		
10022-68-1	Nitric acid, cadmium salt, tetrahydrate	K

· **OSHA-Ca (Occupational Safety & Health Administration)**	
10022-68-1	Nitric acid, cadmium salt, tetrahydrate

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12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.

(Contd. on page 7)

(Contd. of page 6)

· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

· **UN-Number**	
· **DOT, IMDG, IATA**	UN3264
· **UN proper shipping name**	
· **DOT**	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)
· **IMDG**	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, Nitric acid, cadmium salt, tetrahydrate), MARINE POLLUTANT
· **IATA**	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
· **Transport hazard class(es)**	
· **DOT**	

· **Class**	8 Corrosive substances
· **Label**	8
· **IMDG**	

· **Class**	8 Corrosive substances

(Contd. on page 8)

(Contd. of page 7)

· **Label**	8
· **IATA**	
· **Class**	8 Corrosive substances
· **Label**	8
· **Packing group**	
· **DOT, IMDG, IATA**	III
· **Environmental hazards:**	Product contains environmentally hazardous substances: Nitric acid, cadmium salt, tetrahydrate
· **Marine pollutant:**	Symbol (fish and tree)
· **Special precautions for user**	Warning: Corrosive substances
· **Hazard identification number (Kemler code):**	80
· **EMS Number:**	F-A,S-B
· **Segregation groups**	(SGG1) Acids
· **Stowage Category**	A
· **Stowage Code**	SW2 Clear of living quarters.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **DOT**	
· **Quantity limitations**	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
· **IMDG**	
· **Limited quantities (LQ)**	5L
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· **UN "Model Regulation":**	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, III, ENVIRONMENTALLY HAZARDOUS

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15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

· **Sara**

· **Section 355 (extremely hazardous substances):**	
7697-37-2	nitric acid

· **Section 313 (Specific toxic chemical listings):**	
10022-68-1	Nitric acid, cadmium salt, tetrahydrate

(Contd. on page 9)

(Contd. of page 8)

7697-37-2	nitric acid

· **TSCA (Toxic Substances Control Act):**

7732-18-5	water	ACTIVE
7697-37-2	nitric acid	ACTIVE

· **Hazardous Air Pollutants**

10022-68-1	Nitric acid, cadmium salt, tetrahydrate

· **Proposition 65**

· **Chemicals known to cause cancer:**

10022-68-1	Nitric acid, cadmium salt, tetrahydrate

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

10022-68-1	Nitric acid, cadmium salt, tetrahydrate

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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16 Other information

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.

· **Department issuing SDS:** Document Control / Regulatory
· **Contact:** pdl-acg-regulatory-cq@agilent.com
· **Date of preparation / last revision** 09/26/2025 / 5
· **Abbreviations and acronyms:**
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety

(Contd. on page 10)

(Contd. of page 9)

OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Corrosive to Metals 1: Corrosive to metals – Category 1
Skin Irritation 2: Skin corrosion/irritation – Category 2
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

· *** Data compared to the previous version altered.**