



Safety Data Sheet
acc. to OSHA HCS

Printing date 04/14/2015

Reviewed on 04/14/2015

1 Identification

· **Product identifier**

· **Product name: Titanium Standard: 1000 µg/mL Ti in H2O [100ml bottle]**

· **Part number:** 5190-8545

· **Application of the substance / the mixture** Reference material for laboratory use only

· **Manufacturer/Supplier:**

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

Tel: 800-227-9770

· **Information department:** e-mail: pdl-msds_author@agilent.com

· **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

· **Classification of the substance or mixture**

The product is not classified according to the Globally Harmonized System (GHS).

· **Label elements**

· **GHS label elements** Not applicable

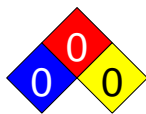
· **Hazard pictograms** Not applicable

· **Signal word** Not applicable

· **Hazard statements** Not applicable

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 0



Fire = 0



Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization:** Mixtures

· **Description:**

Aqueous solution.

Also contains substances at levels not considered to be hazardous.

· **Dangerous components:**

CAS: 16962-40-6	ammonium hexafluorotitanate ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	< 2.0%
CAS: 7664-39-3 RTECS: MW 7875000	Hydrofluoric acid - ⚠ Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; ⚠ Skin Corr. 1A, H314	< 0.1%

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4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** Rinse mouth. Do not induce vomiting.
- **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.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **Environmental precautions:** Dilute with plenty of water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Store in cool, dry place in tightly closed receptacles.
- **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:**
Store in a cool location.
Please refer to the manufacturer's certificate for specific storage and transport temperature conditions.
Store only in the original receptacle.
Keep container in a well-ventilated place. Keep away from sources of ignition and heat.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** None.
- **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 item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

7664-39-3 Hydrofluoric acid -

PEL	Long-term value: 3 ppm as F
REL	Long-term value: 2.5 mg/m ³ , 3 ppm Ceiling limit value: 5 mg/m ³ , 6 ppm 15-min, as F
TLV	Long-term value: 0.41 mg/m ³ , 0.5 ppm Ceiling limit value: 1.64 mg/m ³ , 2 ppm as F; Skin, BEI

· **Ingredients with biological limit values:**

7664-39-3 Hydrofluoric acid -

BEI	3 mg/g creatinine Medium: urine Time: prior to shift Parameter: Fluorides (background, nonspecific)
	10 mg/g creatinine Medium: urine Time: end of shift Parameter: Fluorides (background, nonspecific)

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

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

· **Breathing equipment:** Not required.

· **Protection of hands:**



Protective gloves

Chemical-resistant, impervious gloves with an approved standards should be worn at all times.

The selection of the glove material is based on the penetration times, rates of diffusion and its degradation

· **Material of gloves**

PVC gloves

Neoprene gloves

· **Penetration time of glove material**

The protection time of the gloves can not be accurately estimated for mixtures consisting of several substances.

Refer to and observe manufacturers break through times of the protective gloves.

· **Eye protection:** Safety glasses

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· **Form:** Liquid
 · **Color:** Colorless
 · **Odor:** Odorless
 · **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· **Melting point/Melting range:** Not determined.
 · **Boiling point/Boiling range:** 100 °C (212 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not determined.

· **Ignition temperature:**

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Not determined.

· **Explosion limits:**

· **Lower:** Not determined.
 · **Upper:** Not determined.

· **Vapor pressure at 20 °C (68 °F):** 23 hPa (17 mm Hg)

· **Density at 20 °C (68 °F):** 1.0224 g/cm³ (8.532 lbs/gal)

· **Relative density** Not determined.

· **Vapour 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.

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

10 Stability and reactivity

· **Reactivity** Stable under normal conditions.

· **Chemical stability** Stable under normal conditions.

· **Thermal decomposition / conditions to be avoided:**

Formation of toxic gases is possible during heating or in case of fire.

· **Possibility of hazardous reactions** No dangerous reactions known.

· **Conditions to avoid** Heat.

· **Incompatible materials:** Strong oxidizing agents.

· **Hazardous decomposition products:** Formation of toxic gases is possible during heating or in case of fire.

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11 Toxicological information

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

· LD/LC50 values that are relevant for classification:	
7664-39-3 Hydrofluoric acid -	
Oral	LD50 1276 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)
None of the ingredients is listed.

· NTP (National Toxicology Program)
None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

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.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **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:** Dispose in accordance with national regulations.

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· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **UN-Number**
- **DOT, ADR, ADN, IMDG, IATA** Not applicable
- **DOT, ADR, ADN, IMDG, IATA** Not applicable
- **Transport hazard class(es)**
- **DOT, ADR, ADN, IMDG, IATA**
- **Class** Not applicable
- **Packing group**
- **DOT, ADR, IMDG, IATA** Not applicable
- **Environmental hazards:**
- **Marine pollutant:** No
- **Special precautions for user** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
- **Transport/Additional information:** Not dangerous according to the above specifications.
- **UN "Model Regulation":** -

15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**

7664-39-3 Hydrofluoric acid -

· **Section 313 (Specific toxic chemical listings):**

7664-39-3 Hydrofluoric acid -

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

All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **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.

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· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **GHS label elements** Not applicable

· **Hazard pictograms** Not applicable

· **Signal word** Not applicable

· **Hazard statements** Not applicable

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

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.

· **Date of preparation / last revision** 04/14/2015 / 1

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport 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

ACGIH: American Conference of Governmental Industrial Hygienists

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 2: Acute toxicity, Hazard Category 2

Acute Tox. 4: Acute toxicity, Hazard Category 4

Acute Tox. 1: Acute toxicity, Hazard Category 1

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

· **Sources**

Tables 3.1 and 3.2 from Annex 6 of EC 1272/2008, EC 1907/2006, EH40/2005 as amended 2011, Registry of Toxic Effects of Chemical Substances (RTECS), The Dictionary of Substances and their Effects, 1st Edition, IUCLID.