SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **Product name:** Tantalum Standard: 10000 µg/mL Ta in 2% HF [500ml bottle]
- **Part number:** 5190-8212

**SECTION 2: Hazards identification**

- **Classification according to Regulation (EC) No 1272/2008**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 3</td>
<td>skull and crossbones</td>
<td>H311 Toxic in contact with skin.</td>
</tr>
<tr>
<td>Skin Corr. 1B</td>
<td>corrosion</td>
<td>H314 Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>!</td>
<td>H318 Causes serious eye damage.</td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td>!</td>
<td>H302 Harmful if swallowed.</td>
</tr>
</tbody>
</table>

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>Toxic</td>
<td>R24: Toxic in contact with skin.</td>
</tr>
<tr>
<td>Xi</td>
<td>Irritant</td>
<td>R38-41: Irritating to skin. Risk of serious damage to eyes.</td>
</tr>
</tbody>
</table>

**Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

**Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.

Hazard pictograms

GHs05  GHs06

Signal word Danger

Hazard-determining components of labelling:
Hydrofluoric acid -

Hazard statements
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.

Precautionary statements
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Information concerning particular hazards for human and environment:

Safety phrases:
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37/39 Wear suitable protective clothing, gloves and eyewear/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
60 This material and its container must be disposed of as hazardous waste.

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

SECTION 3: Composition/information on ingredients

3.2 Chemical characterisation: Mixtures

Description:
Aqueous solution.
Also contains substances at levels not considered to be hazardous.

Dangerous components:

<table>
<thead>
<tr>
<th>CAS</th>
<th>Hydrofluoric acid -</th>
</tr>
</thead>
<tbody>
<tr>
<td>7664-39-3</td>
<td></td>
</tr>
<tr>
<td>EINECS: 231-634-8</td>
<td>T+ R26/27/28; C R35</td>
</tr>
<tr>
<td>RTECS: MW 7875000</td>
<td>Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; Skin Corr. 1A, H314</td>
</tr>
</tbody>
</table>

< 2.0%

Additional information: For the wording of the listed risk phrases refer to section 16.
SECTION 4: First aid measures

4.1 Description of first aid measures

General information:
Immediately remove any clothing soiled by the product.
In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation: In case of unconsciousness place patient in recovery position for transport.

After skin contact:
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.

After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing:
Rinse mouth. Do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2 Special hazards arising from the substance or mixture
Formation of toxic gases is possible during heating or in case of fire.

5.3 Advice for firefighters

Protective equipment: Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear protective clothing.

6.2 Environmental precautions:
Dilate with plenty of water.
Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.

6.4 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.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Ensure good ventilation/extraction at the workplace.
Store in cool, dry place in tightly closed receptacles.
Prevent formation of aerosols.

Information about fire - and explosion protection: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles:
Store in a cool location.
Product name: Tantalum Standard: 10000 µg/mL Ta in 2% HF [500ml bottle]

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.
· 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

· Additional information about design of technical facilities: No further data; see item 7.
· 8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:
7664-39-3 Hydrofluoric acid -
Nes Peak limitation: 2.6 mg/m³, 3 ppm
· Additional information: Lists used were valid at the time of SDS preparation.
· 8.2 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.
  Store protective clothing separately.
  Avoid contact with the eyes and skin.
· Respiratory protection:
  In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
· Protection of hands:
  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

Protective gloves
· 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:

Tightly sealed goggles

(Contd. on page 5)
SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties
- General Information
  - Appearance:
    - Form: Liquid
    - Colour: Colourless
  - Odour: Odourless
  - Odour threshold: Not determined.
  - pH-value at 20 °C: < 4
  - Change in condition
    - Melting point/Melting range: Not determined.
    - Boiling point/Boiling range: 100 °C
  - Flash point: Not applicable.
  - Flammability (solid, gaseous): Not determined.
  - Ignition temperature: Not determined.
  - Decomposition temperature: Not determined.
  - Self-igniting: Product is not selfigniting.
  - Danger of explosion: Not determined.
  - Explosion limits:
    - Lower: Not determined.
    - Upper: Not determined.
  - Vapour pressure at 20 °C: 23 hPa
  - Density at 20 °C: 0.98002 g/cm³
  - 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.
- 9.2 Other information
  - No further relevant information available.

SECTION 10: Stability and reactivity

- 10.1 Reactivity Stable under normal conditions.
- 10.2 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.
- 10.3 Possibility of hazardous reactions No dangerous reactions known.
- 10.4 Conditions to avoid Heat.
- 10.5 Incompatible materials: Strong oxidizing agents.
Product name: Tantalum Standard: 10000 µg/mL Ta in 2% HF [500ml bottle]

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

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
  - **Acute toxicity:**
    - **LD/LC50 values relevant for classification:**
      - 7664-39-3 Hydrofluoric acid -
        - Oral LD50 1276 mg/kg (rat)
  - **Primary irritant effect:**
    - on the skin: Irritant to skin and mucous membranes.
    - on the eye: Strong irritant with the danger of severe eye injury.
  - **Sensitisation:** No sensitising effects known.
  - **Additional toxicological information:**
    The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
    - Toxic
    - Irritant

### SECTION 12: Ecological information

- **12.1 Toxicity**
  - Aquatic toxicity: No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
  - General notes:
    - Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
    - Do not allow undiluted product to reach ground water, water course or sewage system.
  - **12.5 Results of PBT and vPvB assessment**
    - PBT: Not applicable.
    - vPvB: Not applicable.
  - **12.6 Other adverse effects** No further relevant information available.

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
  - **Recommendation**
    - Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
  - **European waste catalogue**
    - Waste disposal key numbers from EWC have to be assigned depending on origin and processing.
  - **Uncleaned packaging:**
    - **Recommendation:** Dispose of in accordance with national regulations.
    - **Recommended cleansing agents:** Water, if necessary together with cleansing agents.
## SECTION 14: Transport information

### 14.1 UN-Number
- **ADG, IMDG, IATA**: UN2922
- **ADG**
  - 2922 CORROSIVE LIQUID, TOXIC, N.O.S. (HYDROFLUORIC ACID)
- **IMDG, IATA**
  - CORROSIVE LIQUID, TOXIC, N.O.S. (HYDROFLUORIC ACID)

### 14.3 Transport hazard class(es)
- **ADG**
  - **Class**: 8 Corrosive substances.
  - **Label**: 8+6.1
- **IMDG**
  - **Class**: 8 Corrosive substances.
  - **Label**: 8/6.1
- **IATA**
  - **Class**: 8 Corrosive substances.
  - **Label**: 8 (6.1)

### 14.4 Packing group
- **ADG, IMDG, IATA**: III

### 14.5 Environmental hazards:
- **Marine pollutant**: No

### 14.6 Special precautions for user
- **Danger code (Kemler)**: 86
- **EMS Number**: F-A.S-B
- **Segregation groups**: Acids

### 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
- **Transport/Additional information**:
  - **ADG**
    - **Limited quantities (LQ)**: 5L
    - **Transport category**: 3
    - **Tunnel restriction code**: E

(Contd. on page 8)
**Product name:** Tantalum Standard: 10000 µg/mL Ta in 2% HF [500ml bottle]

**SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Philippines Inventory of Chemicals and Chemical Substances**
    All ingredients are listed.
  - **Australian Inventory of Chemical Substances**
    All ingredients are listed.
  - **Standard for the Uniform Scheduling of Medicines and Poisons**
    7664-39-3 Hydrofluoric acid - S5, S6, S7

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

**SECTION 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.

- **Relevant phrases**
  - H300 Fatal if swallowed.
  - H310 Fatal in contact with skin.
  - H314 Causes severe skin burns and eye damage.
  - H330 Fatal if inhaled.
  - R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.
  - R35 Causes severe burns.

- **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
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - 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)
  - 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
  - Acute Tox. 3: Acute toxicity, Hazard Category 3
  - Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A
  - Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
  - Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

- **Sources**