



**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 05/22/2015

Reviewed on 05/22/2015

**1 Identification**

- **Product identifier**
- **Product name: Palladium AA Standard: 1000 µg/mL Pd in 20% HCl [500ml bottle]**
- **Part number: 5190-8301**
- **Application of the substance / the mixture** Reference material for laboratory use only
- **Manufacturer/Supplier:**  
Agilent Technologies, Inc. Tel: 800-227-9770  
5301 Stevens Creek Blvd.  
Santa Clara, CA 95051 USA
- **Information department:** e-mail: [pdl-msds\\_author@agilent.com](mailto:pdl-msds_author@agilent.com)
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

**2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS05 Corrosion

Met. Corr.1 H290 May be corrosive to metals.



GHS07

Skin Irrit. 2 H315 Causes skin 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.
- **Precautionary statements**  
P280 Wear protective gloves.  
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.  
P406 Store in corrosive resistant container with a resistant inner liner.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 1  
Fire = 0  
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

HEALTH	1	Health = 1
FIRE	0	Fire = 0
REACTIVITY	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.  
Mixture: consisting of the following components.

· **Dangerous components:**

CAS: 7647-01-0	hydrochloric acid	< 10%
RTECS: MW 9620000	⚠ Skin Corr. 1B, H314; ⚠ STOT SE 3, H335	
CAS: 7440-05-3	palladium	< 1.0%
RTECS: RT3480500	⚠ Flam. Sol. 2, H228	

**4 First-aid measures**

- **Description of first aid measures**
- **After inhalation:**  
In case of unconsciousness place patient stably in side position for transportation.  
Seek medical treatment in case of complaints.  
Take affected persons into fresh air and keep quiet.
- **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. If symptoms persist, consult a doctor.
- **After swallowing:**  
Rinse mouth. Do not induce vomiting.  
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.

**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.

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- **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.  
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).  
Ensure adequate ventilation.
- **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.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Store in cool, dry place in tightly closed receptacles.  
Prevent formation of aerosols.
- **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 manufacturers 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:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 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:**

**7647-01-0 hydrochloric acid**

PEL	Ceiling limit value: 7 mg/m <sup>3</sup> , 5 ppm
REL	Ceiling limit value: 7 mg/m <sup>3</sup> , 5 ppm
TLV	Ceiling limit value: 2.98 mg/m <sup>3</sup> , 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.

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*Immediately remove all soiled and contaminated clothing.*

*Wash hands before breaks and at the end of work.*

*Avoid contact with the skin.*

*Avoid contact with the eyes and skin.*

· **Breathing equipment:**

*In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.*

· **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:** Safety glasses

### 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

<b>Form:</b>	Liquid
<b>Color:</b>	Orange
<b>Odor:</b>	Odorless
<b>Odour threshold:</b>	Not determined.

· **pH-value at 20 °C (68 °F):** < 1.5

· **Change in condition**

<b>Melting point/Melting range:</b>	Not determined.
<b>Boiling point/Boiling range:</b>	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:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

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

· **Density at 20 °C (68 °F):** 1.04102 g/cm<sup>3</sup> (8.687 lbs/gal)

· **Relative density** Not determined.

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- **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:**
  - *Bases.*
  - *Strong oxidizing agents.*
- **Hazardous decomposition products:** *Formation of toxic gases is possible during heating or in case of fire.*

**11 Toxicological information**

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

· **LD/LC50 values that are relevant for classification:**

**7647-01-0 hydrochloric acid**

Oral LD50 900 mg/kg (rabbit)

· **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)**

7647-01-0 hydrochloric acid

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· **NTP (National Toxicology Program)**

*None of the ingredients is listed.*

· **OSHA-Ca (Occupational Safety & Health Administration)**

*None of the ingredients is listed.*

US

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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.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Self-assessment); slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **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.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN1789
- **DOT** Hydrochloric acid solution
- **ADR** 1789 Hydrochloric acid solution
- **IMDG, IATA** HYDROCHLORIC ACID solution

· **Transport hazard class(es)**

· **DOT**



- **Class** 8 Corrosive substances
- **Label** 8

· **ADR, IMDG, IATA**



- **Class** 8 Corrosive substances
- **Label** 8

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· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	II
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	Warning: Corrosive substances
· <b>Danger code (Kemler):</b>	80
· <b>EMS Number:</b>	F-A,S-B
· <b>Segregation groups</b>	Acids
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>UN "Model Regulation":</b>	UN1789, Hydrochloric acid solution, 8, II

**15 Regulatory information**

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

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

7647-01-0 | hydrochloric acid

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

7647-01-0 | hydrochloric 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.

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

7647-01-0 | hydrochloric acid

A4

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

None of the ingredients is listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

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**· Hazard pictograms**


GHS05

**· Signal word** Warning

**· Hazard statements**
*H290 May be corrosive to metals.*
*H315 Causes skin irritation.*
**· Precautionary statements**
*P280 Wear protective gloves.*
*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.*
*P406 Store in corrosive resistant container with a resistant inner liner.*
**· 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** 05/22/2015 / 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*
*Flam. Sol. 2: Flammable solids, Hazard Category 2*
*Met. Corr.1: Corrosive to metals, Hazard Category 1*
*Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B*
*Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2*
*STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3*
**· 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.*