1 Identification

· Product identifier
· Trade name: Arsenic as As+3 1000μg/mL in 2% HCl
· Article number: 10003-6
· Details of the supplier of the safety data sheet
· Manufacturer/Supplier:
High-Purity Standards
P.O. Box 41727
Charleston, SC 29423
Telephone: (843) 767-7900
FAX: (843) 767-7906
· Information department: Product safety department
· Emergency telephone number:
INFOTRAC
Emergency telephone numbers 1-800-535-5053
Other emergency telephone numbers 1-352-323-3500

2 Hazard(s) identification

· Classification of the substance or mixture
GHS08 Health hazard
Carc. 1A     H350  May cause cancer.

GHS05 Corrosion
Skin Corr. 1A     H314  Causes severe skin burns and eye damage.

· Label elements
· GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
· Hazard pictograms
GHS05  GHS08

· Signal word Danger

· Hazard-determining components of labeling:
  hydrochloric acid
diarsenic trioxide

· Hazard statements
H314 Causes severe skin burns and eye damage.
H350 May cause cancer.

· Precautionary statements
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dusts or mists.
Trade name: Arsenic as As+3 1000μg/mL in 2% HCl

Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
IF exposed or concerned: Get medical advice/attention.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:
- NFPA ratings (scale 0 - 4)
  - Health = 3
  - Fire = 0
  - Reactivity = 0

- HMIS-ratings (scale 0 - 4)
  - Health = *3
  - 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: Mixture of the substances listed below with nonhazardous additions.
- Dangerous components:
  - 7647-01-0 hydrochloric acid 2.0%
  - 1327-53-3 diarsenic trioxide 0.1%
- Chemical identification of the substance/preparation
  - 7732-18-5 water, distilled, conductivity or of similar purity 97.9%

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. Then consult a doctor.
- After swallowing: Drink copious amounts of water and provide fresh air. Immediately call a doctor.
Trade name: Arsenic as As+3 1000μg/mL in 2% HCl

· 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: Use fire fighting measures that suit the environment.

· Special hazards arising from the substance or mixture
  During heating or in case of fire poisonous gases are produced.

· Advice for firefighters
  · Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures
  Mount respiratory protective device.
  Wear protective equipment. Keep unprotected persons away.

· Environmental precautions: 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 item 13.
  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.

· Protective Action Criteria for Chemicals

  · PAC-1:
    7647-01-0 hydrochloric acid 1.8 ppm
    1327-53-3 diarsenic trioxide 0.27 mg/m³

  · PAC-2:
    7647-01-0 hydrochloric acid 22 ppm
    1327-53-3 diarsenic trioxide 3.0 mg/m³

  · PAC-3:
    7647-01-0 hydrochloric acid 100 ppm
    1327-53-3 diarsenic trioxide 9.1 mg/m³

7 Handling and storage

· Handling:
  · Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Open and handle receptacle with care.
Prevent formation of aerosols.

- **Information about protection against explosions and fires:** Keep respiratory protective device available.

- **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.

### 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:**

    | Component                  | PEL Ceiling limit | REL Ceiling limit | TLV Ceiling limit |
    |---------------------------|-------------------|-------------------|-------------------|
    | 7647-01-0 hydrochloric acid | 7 mg/m³, 5 ppm    | 7 mg/m³, 5 ppm    | 2.98 mg/m³, 2 ppm |

    | 1327-53-3 diarsenic trioxide |
    | PEL Long-term value: 0.01 mg/m³ as As; 29CFR1910.1018 |
    | REL Ceiling limit value: 0.002 mg/m³ as As; 15min; See Pocket Guide App. A |
    | TLV Long-term value: 0.01 mg/m³ |

- **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.
      - Store protective clothing separately.
      - 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:**

    | Protective gloves |
    |-------------------|
    | The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation |

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

<table>
<thead>
<tr>
<th>Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information</td>
</tr>
<tr>
<td>Appearance:</td>
</tr>
<tr>
<td>Form: Liquid</td>
</tr>
<tr>
<td>Color: Colorless</td>
</tr>
<tr>
<td>Odor: Characteristic</td>
</tr>
<tr>
<td>Odor threshold: Not determined.</td>
</tr>
<tr>
<td>pH-value: Not determined.</td>
</tr>
<tr>
<td>Change in condition</td>
</tr>
<tr>
<td>Melting point/Melting range: Undetermined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range: 100 °C (212 °F)</td>
</tr>
<tr>
<td>Flash point: Not applicable.</td>
</tr>
<tr>
<td>Flammability (solid, gaseous): Not applicable.</td>
</tr>
<tr>
<td>Decomposition temperature: Not determined.</td>
</tr>
<tr>
<td>Auto igniting: Product is not selfigniting.</td>
</tr>
<tr>
<td>Danger of explosion: Product does not present an explosion hazard.</td>
</tr>
<tr>
<td>Explosion limits:</td>
</tr>
<tr>
<td>Lower: Not determined.</td>
</tr>
<tr>
<td>Upper: Not determined.</td>
</tr>
<tr>
<td>Vapor pressure at 20 °C (68 °F): 23 hPa (17.3 mm Hg)</td>
</tr>
<tr>
<td>Density at 20 °C (68 °F): 1.00574 g/cm³ (8.3929 lbs/gal)</td>
</tr>
<tr>
<td>Bulk density: 1,004 kg/m³</td>
</tr>
<tr>
<td>Relative density Not determined.</td>
</tr>
<tr>
<td>Vapor density Not determined.</td>
</tr>
<tr>
<td>Evaporation rate Not determined.</td>
</tr>
<tr>
<td>Solubility in / Miscibility with Water: Not miscible or difficult to mix.</td>
</tr>
</tbody>
</table>
Trade name: Arsenic as As+3 1000μg/mL in 2% HCl

- Partition coefficient (n-octanol/water): Not determined.
- Viscosity:
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- Solvent content:
  - Water: 97.9 %
  - VOC content: 0.00 %
    0.0 g/l / 0.00 lb/gal
- Solids content: 0.1 %
- Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity: No further relevant information available.
- 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.

11 Toxicological information

- Information on toxicological effects
  - LD/LC50 values that are relevant for classification:
    7647-01-0 hydrochloric acid
      Oral LD50 900 mg/kg (rabbit)
    1327-53-3 diarsenic trioxide
      Oral LD50 15.1 mg/kg (rat)
  - Primary irritant effect:
    - on the skin: Strong caustic effect on skin and mucous membranes.
    - on the eye: Strong caustic effect.
    - Sensitization: No sensitizing effects known.
  - Additional toxicological information:
    The product shows the following dangers according to internally approved calculation methods for preparations: Corrosive
    Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    7647-01-0 hydrochloric acid
      3
    1327-53-3 diarsenic trioxide
      1
Safety Data Sheet  
acc. to OSHA HCS

Printing date 04/11/2019  
Reviewed on 04/11/2019

Trade name: Arsenic as As+3 1000μg/mL in 2% HCl

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 3 (Self-assessment): extremely hazardous for water
      Do not allow product to reach ground water, water course or sewage system, even in small quantities.
      Must not reach bodies of water or drainage ditch undiluted or unneutralized.
      Danger to drinking water if even extremely 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.

14 Transport information

- **UN-Number**
  - **DOT, ADR, IMDG, IATA** UN1789

- **UN proper shipping name**
  - **DOT** Hydrochloric acid
  - **ADR** 1789 Hydrochloric acid
  - **IMDG, IATA** HYDROCHLORIC ACID
<table>
<thead>
<tr>
<th><strong>Transport hazard class(es)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOT</strong></td>
<td></td>
</tr>
</tbody>
</table>

| **Class** | 8 Corrosive substances |
| **Label** | 8 |

<table>
<thead>
<tr>
<th><strong>ADR, IMDG, IATA</strong></th>
<th></th>
</tr>
</thead>
</table>

| **Class** | 8 Corrosive substances |
| **Label** | 8 |

| **Packing group** |  |
| **DOT, ADR, IMDG, IATA** | III |

| **Environmental hazards**: | Not applicable. |

| **Special precautions for user** | Warning: Corrosive substances |
| **Danger code (Kemler)**: | 80 |
| **EMS Number**: | F-A,S-B |
| **Segregation groups** | Acids |
| **Stowage Category** | E |

| **Transport in bulk according to Annex II of** | Not applicable. |
| **MARPOL73/78 and the IBC Code** |  |

| **Transport/Additional information**: |  |
| **DOT** |  |

| **Quantity limitations** | On passenger aircraft/rail: 5 L  On cargo aircraft only: 60 L |

| **ADR** |  |

| **Excepted quantities (EQ)** | Code: E1 |
| Maximum net quantity per inner packaging: 30 ml  Maximum net quantity per outer packaging: 1000 ml |

| **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 1789 HYDROCHLORIC ACID, 8, III |

(Contd. on page 9)
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
      1327-53-3 diarsenic trioxide
    · Section 313 (Specific toxic chemical listings):
      7647-01-0 hydrochloric acid
      1327-53-3 diarsenic trioxide
  · TSCA (Toxic Substances Control Act):
    All ingredients are listed.
  · Proposition 65
    · Chemicals known to cause cancer:
      1327-53-3 diarsenic trioxide
    · 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:
      1327-53-3 diarsenic trioxide
  · Carcinogenic categories
    · EPA (Environmental Protection Agency) (Substances not listed)
      7647-01-0 hydrochloric acid
      7732-18-5 water, distilled, conductivity or of similar purity
    · TLV (Threshold Limit Value established by ACGIH)
      7647-01-0 hydrochloric acid A4
      1327-53-3 diarsenic trioxide A1
    · 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).
  · Hazard pictograms
    GHS05  GHS08
  · Signal word Danger
  · Hazard-determining components of labeling:
    hydrochloric acid
diarsenic trioxide

(Contd. on page 10)
Trade name: Arsenic as As+3 1000μg/mL in 2% HCl

· Hazard statements
  
  H314 Causes severe skin burns and eye damage.
  
  H350 May cause cancer.

· Precautionary statements

  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Do not breathe dusts or mists.
  Wash thoroughly after handling.
  Wear protective gloves/protective clothing/eye protection/face protection.
  If swallowed: Rinse mouth. Do NOT induce vomiting.
  If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  Immediately call a poison center/doctor.
  IF exposed or concerned: Get medical advice/attention.
  Specific treatment (see on this label).
  Wash contaminated clothing before reuse.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

· National regulations:

  · Additional classification according to Decree on Hazardous Materials:
    
    Carcinogenic hazardous material group III (dangerous).

· Information about limitation of use:

  Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.
  Exceptions can be made by the authorities in certain cases.

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

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Department issuing SDS: Environment protection department.

· Contact:

  High-Purity Standards
  
  Tel:  843-767-7900
  Fax:  843-767-7906

· Date of preparation / last revision 04/11/2019 / -

· 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)
  
  VOC: Volatile Organic Compounds (USA, EU)
  
  LC50: Lethal concentration, 50 percent
Trade name: Arsenic as As+3 1000μg/mL in 2% HCl

LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Carc. 1A: Carcinogenicity – Category 1A

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