Section 1. Identification

1.1 Product identifier
Product name : Schiff's Reagent
Part no. : AR165, AR169, AR172, AR178
Validation date : 7/6/2020

1.2 Relevant identified uses of the substance or mixture and uses advised against
Material uses : Laboratory use
Container type: Dispenser Pack
AR165 // Schiff's Reagent // Artisan Periodic Acid Schiff Stain Kit // 65 mL & 115 mL
AR169 // Schiff's Reagent // Artisan Alcian Blue-PAS Stain Kit // 65 mL & 115 mL
AR172 // Schiff's Reagent // Artisan PAS-Green Stain Kit // 65 mL & 115 mL
AR178 // Schiff's Reagent // Artisan Alcian Blue-PAS with Hematoxylin Stain Kit // 65 mL & 115 mL
Reference number: SDS050

1.3 Details of the supplier of the safety data sheet
Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
Tel: +1 800 227 9770
Agilent Technologies Singapore (International) Pte Ltd.
No. 1 Yishun Avenue 7
Singapore, 768923
Tel. (65) 6276 2622
Agilent Technologies Denmark ApS
Produktionsvej 42
2600 Glostrup,
Denmark
Tel. +45 44 85 95 00
www.Agilent.com

e-mail address of person responsible for this SDS : SDS@Agilent.com

1.4 Emergency telephone number
In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture
OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture
H290 CORROSIVE TO METALS - Category 1
H314 SKIN CORROSION - Category 1
H318 SERIOUS EYE DAMAGE - Category 1
H351 CARCINOGENICITY - Category 2

Date of issue : 07/06/2020
Section 2. Hazards identification

2.2 GHS label elements

Hazard pictograms:

- Flame
- Skull and crossbones

Signal word: Danger

Hazard statements:
- H290 - May be corrosive to metals.
- H314 - Causes severe skin burns and eye damage.
- H351 - Suspected of causing cancer.

Precautionary statements

Prevention:
- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
- P234 - Keep only in original container.
- P264 - Wash hands thoroughly after handling.

Response:
- P390 - Absorb spillage to prevent material damage.
- P308 + P313 - IF exposed or concerned: Get medical attention.
- P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician.
- P301 + P310 + P330 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 + P363 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician.
- P305 + P351 + P338 + P310 - 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 or physician.

Storage:
- P405 - Store locked up.
- P406 - Store in a corrosion resistant container with a resistant inner liner.

Disposal:
- P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements:
- Do not taste or swallow. Wash thoroughly after handling.

2.3 Other hazards

Hazards not otherwise classified:
- Causes digestive tract burns.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>≤5.1</td>
<td>7647-01-0</td>
</tr>
<tr>
<td>Dipotassium disulphite</td>
<td>≤3</td>
<td>16731-55-8</td>
</tr>
<tr>
<td>(4-(4-aminophenyl)(4-iminocyclohexa-2,5-dienylidene)methyl)-2-methylaniline hydrochloride</td>
<td>≤1</td>
<td>632-99-5</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Date of issue: 07/06/2020
Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact: Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation: Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact: Get medical attention immediately. Call a poison center or physician. Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: Causes serious eye damage.

Inhalation: No known significant effects or critical hazards.

Skin contact: Causes severe burns.

Ingestion: Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following:
- pain
- watering
- redness

Inhalation: No specific data.

Skin contact: Adverse symptoms may include the following:
- pain or irritation
- redness
- blistering may occur

Ingestion: Adverse symptoms may include the following:
- stomach pains

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments: No specific treatment.

Date of issue: 07/06/2020
Section 4. First aid measures

**Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 **Extinguishing media**

**Suitable extinguishing media**: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**: None known.

5.2 **Special hazards arising from the substance or mixture**

**Specific hazards arising from the chemical**: In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products**: Decomposition products may include the following materials:
- sulfur oxides
- halogenated compounds
- metal oxide/oxides
- Hydrogen chloride (HCl).

5.3 **Advice for firefighters**

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

6.1 **Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders**: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 **Environmental precautions**: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 **Methods and materials for containment and cleaning up**

**Methods for cleaning up**: Stop leak if without risk. Move containers from spill area. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.

**Date of issue**: 07/06/2020
Section 7. Handling and storage

7.1 Precautions for safe handling

**Protective measures**: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.

**Advice on general occupational hygiene**: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Specific storage conditions: Please consult the label. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store in a corrosion resistant container with a resistant inner liner. Store locked up. Separate from alkalis. Keep away from metals. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

**Recommendations**: Industrial applications, Professional applications.

**Industrial sector specific solutions**: Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>ACGIH TLV (United States, 3/2019).&lt;br&gt;C: 2 ppm&lt;br&gt;OSHA PEL 1989 (United States, 3/1989).&lt;br&gt;CEIL: 5 ppm&lt;br&gt;CEIL: 7 mg/m³&lt;br&gt;NIOSH REL (United States, 10/2016).&lt;br&gt;CEIL: 5 ppm&lt;br&gt;CEIL: 7 mg/m³&lt;br&gt;OSHA PEL (United States, 5/2018).&lt;br&gt;CEIL: 5 ppm&lt;br&gt;CEIL: 7 mg/m³</td>
</tr>
<tr>
<td>Dipotassium disulphite (4-(4-aminophenyl)(4-iminocyclohexa-2,5-dienylidene)methyl)-2-methylaniline hydrochloride</td>
<td>None. None.</td>
</tr>
</tbody>
</table>
### Section 8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Appropriate engineering controls</th>
</tr>
</thead>
</table>
If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

<table>
<thead>
<tr>
<th>Environmental exposure controls</th>
</tr>
</thead>
</table>
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

#### Individual protection measures

<table>
<thead>
<tr>
<th>Hygiene measures</th>
</tr>
</thead>
</table>
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

<table>
<thead>
<tr>
<th>Eye/face protection</th>
</tr>
</thead>
</table>
Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

<table>
<thead>
<tr>
<th>Skin protection</th>
</tr>
</thead>
</table>
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

<table>
<thead>
<tr>
<th>Hand protection</th>
</tr>
</thead>
</table>
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

<table>
<thead>
<tr>
<th>Other skin protection</th>
</tr>
</thead>
</table>
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

<table>
<thead>
<tr>
<th>Respiratory protection</th>
</tr>
</thead>
</table>
Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

### Section 9. Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
</tr>
<tr>
<td>Color</td>
</tr>
<tr>
<td>Odor</td>
</tr>
<tr>
<td>Odor threshold</td>
</tr>
<tr>
<td>pH</td>
</tr>
<tr>
<td>Melting point</td>
</tr>
<tr>
<td>Boiling point</td>
</tr>
<tr>
<td>Flash point</td>
</tr>
<tr>
<td>Evaporation rate</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
</tr>
</tbody>
</table>
Section 9. Physical and chemical properties

lower and upper explosive (flammable) limits: Not available.
Vapor pressure: 2.3 kPa (17 mm Hg) [room temperature]
Vapor density: Not available.
Relative density: Not available.
Density: 1.45 g/cm³ [20°C (68°F)]
Solubility: Soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water: Not available.
Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
Viscosity: Not available.

Section 10. Stability and reactivity

10.1 Reactivity: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability: The product is stable.
10.3 Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid: No specific data.
10.5 Incompatible materials: Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air.
Reactive or incompatible with the following materials: alkalis
metals
Reactive or incompatible with the following materials: oxidizing materials and reducing materials.
10.6 Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity: Not available.
Irritation/Corrosion: Not available.
Sensitization: Not available.
Mutagenicity
Conclusion/Summary: Not available.
Carcinogenicity
Conclusion/Summary: Not available.
Classification

Date of issue: 07/06/2020
Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Dipotassium disulphite</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>(4-(4-aminophenyl)</td>
<td>-</td>
<td>2B</td>
<td>-</td>
</tr>
<tr>
<td>(4-iminocyclohexa-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,5-dienylidene)methyl)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2-methylaniline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hydrochloride</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reproductive toxicity
Conclusion/Summary: Not available.

Teratogenicity
Conclusion/Summary: Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>Category 3</td>
<td>-</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure
Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact: Causes serious eye damage.
Inhalation: No known significant effects or critical hazards.
Skin contact: Causes severe burns.
Ingestion: Corrosive to the digestive tract. Causes burns.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: Adverse symptoms may include the following:
pain
watering
redness

Inhalation: No specific data.

Skin contact: Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion: Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Date of issue: 07/06/2020
Section 11. Toxicological information

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects:
- General: No known significant effects or critical hazards.
- Carcinogenicity: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity: No known significant effects or critical hazards.
- Teratogenicity: No known significant effects or critical hazards.
- Developmental effects: No known significant effects or critical hazards.
- Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Oral (mg/kg)</th>
<th>Dermal (mg/kg)</th>
<th>Inhalation (gases) (ppm)</th>
<th>Inhalation (vapors) (mg/l)</th>
<th>Inhalation (dusts and mists) (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schiff's Reagent</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>20.8</td>
<td>N/A</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>1.038</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Section 12. Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>Acute LC50 240000 µg/l Marine water</td>
<td>Crustaceans - Carcinus maenas - Adult</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 282 ppm Fresh water</td>
<td>Fish - Gambusia affinis - Adult</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 464 to 1000 mg/l Fresh water</td>
<td>Fish - Danio rerio</td>
<td>96 hours</td>
</tr>
<tr>
<td>Dipotassium disulphite</td>
<td>Chronic NOEC ≥326 mg/l Fresh water</td>
<td>Fish - Danio rerio</td>
<td>34 days</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipotassium disulphite</td>
<td>-4</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}): Not available.

12.5 Other adverse effects: No known significant effects or critical hazards.
Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional/local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers orliners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN1789</td>
<td>Hydrochloric acid solution</td>
<td>HYDROCHLORIC ACID solution</td>
<td>ACIDO CLORHIDRICO solution</td>
<td>HYDROCHLORIC ACID solution</td>
<td>Hydrochloric acid solution</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transport hazard class(es)</th>
<th>DOT</th>
<th>TDG</th>
<th>Mexico</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Packing group</th>
<th>DOT</th>
<th>TDG</th>
<th>Mexico</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td><img src="III" alt="III" /></td>
<td><img src="III" alt="III" /></td>
<td><img src="III" alt="III" /></td>
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<td><img src="III" alt="III" /></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental hazards</th>
<th>DOT</th>
<th>TDG</th>
<th>Mexico</th>
<th>IMDG</th>
<th>IATA</th>
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</thead>
<tbody>
<tr>
<td>No.</td>
<td><img src="No." alt="No." /></td>
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<td><img src="No." alt="No." /></td>
<td><img src="No." alt="No." /></td>
<td><img src="No." alt="No." /></td>
</tr>
</tbody>
</table>

**Additional information**

If shipped as part of a kit "UN3316 (Chemical kit), Class 9, PG II" can be used. Precondition: UN3316 must be allowed for the remaining vials in same kit too.

**DOT Classification**

- **Limited quantity**: Yes.
- **Quantity limitation**: Passenger aircraft/rail: 5 L. Cargo aircraft: 60 L.
- **Special provisions**: A3, IB3, T4, TP1

**TDG Classification**

- Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8).
- **Explosive Limit and Limited Quantity Index**: 5
- **Passenger Carrying Road or Rail Index**: 5

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Section 14. Transport information

Mexico Classification: Special provisions 223
IMDG: Emergency schedules F-A, S-B
          Special provisions 223
          Special provisions A3, A803

Special precautions for user: Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments: Not available.

Section 15. Regulatory information

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

U.S. Federal regulations: TSCA 8(a) CDR Exempt/Partial exemption: Not determined
          Clean Water Act (CWA) 311: Hydrochloric acid
          Clean Air Act (CAA) 112 regulated toxic substances: Hydrochloric acid
          Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Listed
          Clean Air Act Section 602 Class I Substances: Not listed
          Clean Air Act Section 602 Class II Substances: Not listed
          DEA List I Chemicals (Precursor Chemicals): Not listed
          DEA List II Chemicals (Essential Chemicals): Listed
          SARA 302/304
            Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>EHS</th>
<th>SARA 302 TPQ (lbs)</th>
<th>SARA 302 TPQ (gallons)</th>
<th>SARA 304 RQ (lbs)</th>
<th>SARA 304 RQ (gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>≤5.1</td>
<td>Yes.</td>
<td>500</td>
<td>-</td>
<td>5000</td>
<td>-</td>
</tr>
</tbody>
</table>

SARA 304 RQ: 100000 lbs / 45400 kg [8271.3 gal / 31310.3 L]

SARA 311/312
Classification: CORROSIVE TO METALS - Category 1
          SKIN CORROSION - Category 1
          SERIOUS EYE DAMAGE - Category 1
          CARCINOGENICITY - Category 2
          HNOC - Corrosive to digestive tract

Composition/information on ingredients
Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Classification</th>
</tr>
</thead>
</table>
| Hydrochloric acid | ≤5.1 | ACUTE TOXICITY (inhalation) - Category 2  
| | | SKIN CORROSION - Category 1B  
| | | SERIOUS EYE DAMAGE - Category 1  
| | | SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
| | | HNOC - Corrosive to digestive tract  
| | | SERIOUS EYE DAMAGE - Category 1  
| | | HNOC - Water-reactive (toxic gas)  
| | | CARCINOGENICITY - Category 2  
| Dipotassium disulphite | ≤3 |  
| (4-(4-aminophenyl)  
| (4-iminocyclohexa- 
| 2,5-dienylidene)methyl)  
| -2-methylaniline hydrochloride | ≤1 |  

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

**State regulations**

**Massachusetts**  
: The following components are listed: HYDROGEN CHLORIDE; HYDROCHLORIC ACID

**New York**  
: The following components are listed: Hydrochloric acid; Magenta

**New Jersey**  
: The following components are listed: HYDROGEN CHLORIDE; HYDROCHLORIC ACID

**Pennsylvania**  
: The following components are listed: HYDROCHLORIC ACID

**California Prop. 65**  
This product does not require a Safe Harbor warning under California Prop. 65.

**International regulations**

**Chemical Weapon Convention List Schedules I, II & III Chemicals**  
Not listed.

**Montreal Protocol**  
Not listed.

**Stockholm Convention on Persistent Organic Pollutants**  
Not listed.

**Rotterdam Convention on Prior Informed Consent (PIC)**  
Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**  
Not listed.

**Inventory list**

**Australia**  
: All components are listed or exempted.

**Canada**  
: Not determined.

**China**  
: All components are listed or exempted.

**Europe**  
: All components are listed or exempted.

**Japan**  
: **Japan inventory (ENCS)**: All components are listed or exempted.  
| **Japan inventory (ISHL)**: All components are listed or exempted.

**New Zealand**  
: All components are listed or exempted.

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Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Country</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philippines</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Taiwan</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Thailand</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Turkey</td>
<td>Not determined.</td>
</tr>
<tr>
<td>United States</td>
<td>All components are active or exempted.</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>All components are listed or exempted.</td>
</tr>
</tbody>
</table>

Section 16. Other information

History

<table>
<thead>
<tr>
<th>Date of issue</th>
<th>07/06/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of previous issue</td>
<td>03/14/2019</td>
</tr>
<tr>
<td>Version</td>
<td>5</td>
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</tbody>
</table>

Key to abbreviations

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- N/A = Not available
- UN = United Nations

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORROSIVE TO METALS - Category 1</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>SKIN CORROSION - Category 1</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>SERIOUS EYE DAMAGE - Category 1</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>CARCINOGENICITY - Category 2</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

Indicates information that has changed from previously issued version.

Notice to reader

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