1. IDENTIFICATION

Product identifier
Product Name: Cleaning Solution for Amtax sc Analyzer

Other means of identification
Product Code(s): 2894246

Safety data sheet number: M02429

UN/ID no: UN3265

Synonyms

Recommended use of the chemical and restrictions on use
Recommended Use: Cleaning solution.
Uses advised against: None.
Restrictions on use: None.

Details of the supplier of the safety data sheet

Manufacturer Address
Hach Company
P.O.Box 389 Loveland, CO 80539 USA
(970) 669-3050

Emergency telephone number
(303) 623-5716 - 24 Hour Service (515)232-2533 - 8am - 4pm CST

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals
Category 1
Skin corrosion/irritation
Category 2
Serious eye damage/eye irritation
Category 2A

Hazard not otherwise classified (HNOC)
Not applicable

Label elements

Signal word - Warning
Hazard statements
H290 - May be corrosive to metals
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P234 - Keep only in original container
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P390 - Absorb spillage to prevent material damage
P406 - Store in corrosive resistant stainless steel container with a resistant inliner

Other Information
Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance
Not applicable

Mixture

Synonyms

Percent ranges are used where confidential product information is applicable.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Percent Range</th>
<th>HMRIC #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>77-92-9</td>
<td>40 - 50%</td>
<td>-</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

Description of first aid measures

General advice
IF IN EYES: Flush eyes for at least 15 minutes. May cause skin irritation.

Eye contact
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Skin contact
For minor skin contact, avoid spreading material on unaffected skin. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Remove and isolate contaminated clothing and shoes. Call a POISON CENTER or doctor if you feel unwell. If skin irritation persists, call a physician.

Inhalation
IF INHALED: Remove person to fresh air and keep comfortable for breathing. If symptoms persist, call a physician.

Ingestion
IF SWALLOWED: Rinse Mouth. If symptoms persist, call a physician.

Self-protection of the first aider
Use personal protective equipment as required. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Most important symptoms and effects, both acute and delayed

Symptoms
See Section 11: TOXICOLOGICAL INFORMATION.

Indication of any immediate medical attention and special treatment needed

Note to physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
Caution: Use of water spray when fighting fire may be inefficient.

Flammable properties
Substance does not burn.

Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Hazardous combustion products
This material will not burn.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice
Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.
EC Notice
Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

WHMIS Notice
Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

Personal precautions, protective equipment and emergency procedures

Personal precautions
Evacuate personnel to safe areas. Do not touch or walk through spilled material. Ventilate affected area. Use personal protective equipment as required.

For emergency responders
Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions
Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Take necessary precautions in observance of pertinent physical hazards. Neutralize spill if necessary. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Dispose of in accordance with local, state and federal regulations or laws.

Emergency Response Guide Number
153

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Absorb spillage to prevent material damage.

Conditions for safe storage, including any incompatibilities

Storage Conditions
Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep/store only in original container.

Flammability class
Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Legend
See section 16 for terms and abbreviations

Appropriate engineering controls
Engineering Controls
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear tight sealing safety goggles and/or face protection shield. Avoid contact with eyes.

Skin and body protection
Wear protective gloves and protective clothing.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment.

General Hygiene Considerations
Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear suitable gloves and eye/face protection. Wash face, hands and any exposed skin thoroughly after handling. Regular cleaning of equipment, work area and clothing is recommended. Handle in accordance with good industrial hygiene and safety practice. Avoid prolonged or repeated contact with skin. Take off all contaminated clothing and wash it before reuse. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feeding stuffs.

Environmental exposure controls
Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state
Liquid

Gas Under Pressure
Not classified according to GHS criteria

Appearance
aqueous solution

Color
Colorless to light yellow

Odor
None

Odor threshold
No data available

Property
Values
Remarks • Method
Molecular weight
No data available

pH
No data available

Melting point/freezing point
~ -7 °C / 19 °F
Estimation based on theoretical calculation

Boiling point / boiling range
~ 102 °C / 216 °F
Estimation based on theoretical calculation

Evaporation rate
1.29 (water = 1)
Estimation based on theoretical calculation

Vapor pressure
22.277 mm Hg / 2.97 kPa at 25 °C / 77 °F
Estimation based on theoretical calculation

Vapor density (air = 1)
0.62 (air = 1)

Specific gravity (water = 1 / air = 1)
1.2006

Partition Coefficient (n-octanol/water)
Not applicable


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Soil Organic Carbon-Water Partition Coefficient
Autoignition temperature
Decomposition temperature
Dynamic viscosity
Kinematic viscosity
Not applicable
No data available
No data available
No data available
No data available

Solubility(ies)

Water solubility

<table>
<thead>
<tr>
<th>Water solubility classification</th>
<th>Water solubility</th>
<th>Water Solubility Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soluble</td>
<td>&gt; 1000 mg/L</td>
<td>25 °C / 77 °F</td>
</tr>
</tbody>
</table>

Solubility in other solvents

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Solubility classification</th>
<th>Solubility</th>
<th>Solubility Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid</td>
<td>Soluble</td>
<td>&gt; 1000 mg/L</td>
<td>25 °C / 77 °F</td>
</tr>
</tbody>
</table>

Other Information

Metal Corrosivity
GHS Metal Corrosivity Classification
Steel Corrosion Rate
Aluminum Corrosion Rate
Classified as corrosive to metal according to GHS criteria
Category 1, H290
No data available
No data available

Bulk density
Explosive properties
Explosion data
Upper explosion limit
Lower explosion limit
No data available
No data available
No data available

Flammable properties
Flammability Limit in Air
Upper flammability limit:
Lower flammability limit:
No data available
No data available

Flash point
Method
Oxidizing properties
No data available
No data available
No information available

Reactivity properties
Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.
10. STABILITY AND REACTIVITY

Reactivity properties
Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

Chemical stability
Stable under recommended storage conditions.

Special dangers of the product
None reported

Possibility of Hazardous Reactions
None under normal processing.

Hazards polymerization
Hazardous polymerization does not occur.

Conditions to avoid
Extremes of temperature and direct sunlight. Incompatible materials.

Incompatible materials

Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosive properties
Not classified according to GHS criteria.

Upper explosion limit
No data available

Lower explosion limit
No data available

Autoignition temperature
No data available

Sensitivity to Static Discharge
None reported

Sensitivity to Mechanical Impact
None reported

11. TOXICOLOGICAL INFORMATION

NIOSH (RTECS) Number
None reported

Information on Likely Routes of Exposure

<table>
<thead>
<tr>
<th>Product Information</th>
<th>Causes skin irritation. Causes serious eye irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>No known effect based on information supplied.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Severely irritating to eyes.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Ingestion may cause irritation to mucous membranes.</td>
</tr>
<tr>
<td>Aggravated Medical Conditions</td>
<td>Skin disorders. Eye disorders.</td>
</tr>
<tr>
<td>Toxically synergistic products</td>
<td>None known.</td>
</tr>
<tr>
<td>Toxicokinetics, metabolism and distribution</td>
<td>See ingredients information below.</td>
</tr>
</tbody>
</table>
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Product Acute Toxicity Data

Oral Exposure Route

No data available

Dermal Exposure Route

No data available

Inhalation (Dust/Mist) Exposure Route

No data available

Inhalation (Vapor) Exposure Route

No data available

Inhalation (Gas) Exposure Route

No data available

The following values are calculated based on chapter 3.1 of the GHS document

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEmix (oral)</td>
<td>7.203.00 mg/kg</td>
</tr>
<tr>
<td>ATEmix (dermal)</td>
<td>6.002.00 mg/kg</td>
</tr>
</tbody>
</table>

Ingredient Acute Toxicity Data

Oral Exposure Route

If available, see data below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid (40 - 50%) CAS#: 77-92-9</td>
<td>Rat LD₅₀</td>
<td>3000 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
</tbody>
</table>

Dermal Exposure Route

If available, see data below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid (40 - 50%) CAS#: 77-92-9</td>
<td>Rat LD₅₀</td>
<td>&gt; 2000 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
</tbody>
</table>

Inhalation (Dust/Mist) Exposure Route

If available, see data below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid (40 - 50%) CAS#: 77-92-9</td>
<td>Rat LD₅₀</td>
<td>0.180 mg/L</td>
<td>None reported</td>
<td>Lungs, Thorax, or Respiration Other changes Liver Impaired liver function tests Biochemical Enzyme inhibition, induction, or change in blood or tissue levels (dehydrogenases)</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

Inhalation (Vapor) Exposure Route

If available, see data below

Inhalation (Gas) Exposure Route

No data available

Product Skin Corrosion/Irritation Data

No data available.

Ingredient Skin Corrosion/Irritation Data

If available, see data below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Test method</th>
<th>Species</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Results</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
</table>
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Issue Date: 10-Jun-2016
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Product Name: Cleaning Solution for Amtax sc Analyzer
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<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Test method</th>
<th>Species</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Results</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>Standard Draize Test</td>
<td>Rabbit</td>
<td>500 mg</td>
<td>24 hours</td>
<td>Mild skin irritant</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>(40 - 50%) CAS#: 77-92-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Product Serious Eye Damage/Eye Irritation Data
No data available.

Ingredient Eye Damage/Eye Irritation Data
If available, see data below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Test method</th>
<th>Species</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Results</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>Standard Draize Test</td>
<td>Rabbit</td>
<td>0.750 mg</td>
<td>24 hours</td>
<td>Eye irritant</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>(40 - 50%) CAS#: 77-92-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sensitization Information

Product Sensitization Data

Skin Sensitization Exposure Route
No data available.

Respiratory Sensitization Exposure Route
No data available.

Ingredient Sensitization Data

Skin Sensitization Exposure Route
No data available.

Respiratory Sensitization Exposure Route
No data available.

Chronic Toxicity Information

Product Repeat Dose Toxicity Data

Oral Exposure Route
No data available.

Dermal Exposure Route
No data available.

Inhalation (Dust/Mist) Exposure Route
No data available.

Inhalation (Vapor) Exposure Route
No data available.

Inhalation (Gas) Exposure Route
No data available.

Ingredient Repeat Dose Toxicity Data

Oral Exposure Route
If available, see data below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
</table>
| Citric acid   | Rat TD_{50}  | 930 mg/kg | 15 days | Biochemical
Enzyme inhibition, induction, or change in blood or tissue levels (dehydrogenases)
**Blood**
Changes in serum composition (e.g. TP, bilirubin, cholesterol) | RTECS (Registry of Toxic Effects of Chemical Substances) |
| (40 - 50%) CAS#: 77-92-9 | | | | | |

Dermal Exposure Route
No data available

Inhalation (Dust/Mist) Exposure Route
If available, see data below
### Chemical Name

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid (40 - 50%)</td>
<td>Rat TD₅₀</td>
<td>0.180 mg/L</td>
<td>None reported</td>
<td>Lungs, Thorax, or Respiration Other changes Liver Impaired liver function tests Biochemical Enzyme inhibition, induction, or change in blood or tissue levels (dehydrogenases)</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

#### Inhalation (Vapor) Exposure Route
No data available

#### Inhalation (Gas) Exposure Route
No data available

### Chemical Name

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>77-92-9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Legend

<table>
<thead>
<tr>
<th>ACGIH (American Conference of Governmental Industrial Hygienists)</th>
<th>Does not apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>IARC (International Agency for Research on Cancer)</td>
<td>Does not apply</td>
</tr>
<tr>
<td>NTP (National Toxicology Program)</td>
<td>Does not apply</td>
</tr>
<tr>
<td>OSHA (Occupational Safety and Health Administration of the US Department of Labor)</td>
<td>Does not apply</td>
</tr>
</tbody>
</table>

#### Product Carcinogenicity Data
No data available

#### Oral Exposure Route
No data available

#### Dermal Exposure Route
No data available

#### Inhalation (Dust/Mist) Exposure Route
No data available

#### Inhalation (Vapor) Exposure Route
No data available

#### Inhalation (Gas) Exposure Route
No data available

#### Ingredient Carcinogenicity Data
No data available

#### Oral Exposure Route
No data available

#### Dermal Exposure Route
No data available

#### Inhalation (Dust/Mist) Exposure Route
No data available

#### Inhalation (Vapor) Exposure Route
No data available

#### Inhalation (Gas) Exposure Route
No data available

### Product Germ Cell Mutagenicity

#### invitroData
No data available

#### Ingredient Germ Cell Mutagenicity

#### invitroData
No data available

#### Oral Exposure Route
No data available

#### Dermal Exposure Route
No data available
### 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Based on the classification principles, not classified as hazardous to the environment.

**Product Ecological Data**

**Aquatic toxicity**

- Fish: No data available
- Crustacea: No data available
- Algae: No data available
- Terrestrial toxicity:
  - Soil: No data available
  - Vertebrates: No data available
Invertebrates

**Ingredient Ecological Data**

**Aquatic toxicity**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Exposure time</th>
<th>Species</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>96 hours</td>
<td><em>Lepomis macrochirus</em></td>
<td>LC$_{50}$</td>
<td>1516 mg/L</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
<tr>
<td>Citric acid</td>
<td>48 hours</td>
<td><em>Leuciscus idus Melanotus</em></td>
<td>LC$_{50}$</td>
<td>440 mg/L</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
</tbody>
</table>

**Crustacea**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Exposure time</th>
<th>Species</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>72 hours</td>
<td><em>Daphina magna</em></td>
<td>EC$_{50}$</td>
<td>120 mg/L</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
</tbody>
</table>

**Algae**

No data available

**Terrestrial toxicity**

- **Soil**
  - No data available

**Vertebrates**

- No data available

**Invertebrates**

- No data available

**Other Information**

**Persistence and degradability**

None known.

**Product Biodegradability Data**

If available, see ingredient data below.

**Ingredient Biodegradability Data**

Test data reported below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Test method</th>
<th>Biodegradation</th>
<th>Exposure time</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>None reported</td>
<td>None reported</td>
<td>None reported</td>
<td>Readily biodegradable</td>
</tr>
<tr>
<td>(40 - 50%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS#: 77-92-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bioaccumulation**

Has the potential to bioaccumulate according to GHS criteria.

**Product Bioaccumulation Data**

If available, see ingredient data below.

**Ingredient Bioaccumulation Data**

No data available
### Chemical Name: Citric acid (40 - 50%) CAS#: 77-92-9

<table>
<thead>
<tr>
<th>Test method</th>
<th>Exposure time</th>
<th>Species</th>
<th>Bioconcentration factor (BCF)</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>None reported</td>
<td>None reported</td>
<td>None reported</td>
<td>None reported</td>
<td>Does not have the potential to bioaccumulate</td>
</tr>
</tbody>
</table>

### Additional Information

#### Product Information

**Partition Coefficient (n-octanol/water)**

Not applicable

#### Ingredient Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition Coefficient (n-octanol/water)</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid (40 - 50%) CAS#: 77-92-9</td>
<td>log $K_{ow}$ = -1.64</td>
<td>No information available</td>
</tr>
</tbody>
</table>

#### Mobility

Mobility in soil: High mobility. If available, see ingredient data below.

#### Product Information

**Soil Organic Carbon-Water Partition Coefficient**

Not applicable

#### Ingredient Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Soil Organic Carbon-Water Partition Coefficient</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid (40 - 50%) CAS#: 77-92-9</td>
<td>log $K_{oc}$ = -1.16</td>
<td>No information available</td>
</tr>
</tbody>
</table>

### Additional Information

#### Water solubility

**Product Information**

<table>
<thead>
<tr>
<th>Water solubility classification</th>
<th>Water solubility</th>
<th>Water Solubility Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soluble</td>
<td>&gt; 1000 mg/L</td>
<td>25 °C / 77 °F</td>
</tr>
</tbody>
</table>

#### Ingredient Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Water solubility classification</th>
<th>Water solubility</th>
<th>Water solubility temperature °C</th>
<th>Water solubility temperature °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid CAS#: 77-92-9</td>
<td>Completely soluble</td>
<td>750000 mg/L</td>
<td>25 °C</td>
<td>77 °F</td>
</tr>
</tbody>
</table>

### Other adverse effects

No information available.
13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Contaminated packaging Do not reuse container.

US EPA Waste Number D002

Special instructions for disposal Dilute material with excess water making a weaker than 5% solution. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system.

14. TRANSPORT INFORMATION

DOT

UN/ID no UN3265
Proper shipping name Corrosive liquid, acidic, organic, n.o.s
DOT Technical Name (Citric Acid Solution)
Hazard Class 8
Packing Group III
Emergency Response Guide Number 153

TDG

UN/ID no UN3265
Proper shipping name Corrosive liquid, acidic, organic, n.o.s
TDG Technical Name (Citric Acid Solution)
Hazard Class 8
Packing Group III

IATA

UN/ID no UN3265
Proper shipping name Corrosive liquid, acidic, organic, n.o.s
IATA Technical Name (Citric Acid Solution)
Hazard Class 8
Packing Group III
ERG Code 153

IMDG

UN/ID no UN3265
IMDG Technical Name (Citric Acid Solution)
Hazard Class 8
Packing Group III

Note: No special precautions necessary.

Additional information
There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.
If the item is part of a reagent set or kit the classification would change to the following:
UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.
If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories
Product Name: Cleaning Solution for Amtax sc Analyzer

Issue Date: 10-Jun-2016
Revision Date: 17-Jan-2017
Page: 15 / 17

TSCA
Complies

DSL/NDSL
Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS
Complies

ENCS
Complies

IECSC
Complies

KECL
Complies

PICCS
Complies

TCSC
Complies

AICS
Complies

NZIoC
Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSC - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories
Acute health hazard
Yes
Chronic Health Hazard
Yes
Fire hazard
No
Sudden release of pressure hazard
No
Reactive Hazard
No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations
16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Additional Information

Global Automotive Declarable Substance List (GADSL)
Not applicable

Special Comments
None

NFPA and HMIS Classifications

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards - 2</th>
<th>Flammability - 0</th>
<th>Instability - 0</th>
<th>Physical and Chemical Properties -</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health hazards - 2</th>
<th>Flammability - 0</th>
<th>Physical hazards - 0</th>
<th>Personal protection - X</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key or legend to abbreviations and acronyms used in the safety data sheet

NIOSH IDLH  Immediately Dangerous to Life or Health
ACGIH     ACGIH (American Conference of Governmental Industrial Hygienists)
NDF       no data

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA     TWA (time-weighted average)  STEL
MAC   Maximum Allowable Concentration  Ceiling
X     Listed  Vacated

SKN+ Skin designation  SKN+ Skin sensitization
RSP+ Respiratory sensitization  **
C     Carcinogen  R Hazard Designation
M     Mutagen  Reproductive toxicant

Prepared By  Hach Product Compliance Department
Issue Date    10-Jun-2016
Revision Date 17-Jan-2017
Revision Note None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site
safety programs in accordance with applicable hazard communication standards and regulations.

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End of Safety Data Sheet