1. Product and Company Identification

Material name: Anticoagulant sodium citrate solution, USP
Version #: 01
Revision date: 06-16-2010
CAS #: Mixture
Product use: Anticoagulant.

Synonym(s): Anticoagulant Citrate Solution, USP, Anticoagulant Citrate Solution, 4% Sodium Citrate, Anticoagulant, 4% Sodium Citrate Solution, AC Solution, Sodium Citrate Solution, USP, Anticoagulant Sodium Citrate Solution

Supplier: Fenwal Inc.
Three Corporate Drive
Lake Zurich
IL
60047
US

Contact person: Arlene Farrar, Fenwal, Inc., Environmental Health and Safety.

General Information: 1-847 550-2300

2. Hazards Identification

Physical state: Liquid.
Emergency overview: No special precautionary health measures should be needed under anticipated conditions of use.
OSHA regulatory status: This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects:

- **Routes of exposure**
  - Skin contact. Eye contact.
  - Eyes: May cause temporary eye irritation. May cause redness and pain.
  - Skin: Prolonged contact may cause dryness of the skin.
  - Inhalation: Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
  - Ingestion: May cause discomfort if swallowed.

Target organs: No specific target organs noted.
Chronic effects: None known.
Signs and symptoms: May cause redness and pain.

Potential environmental effects: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium citrate, dihydrate, EP</td>
<td>6132-04-3</td>
<td>4</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>Approx. 95</td>
</tr>
</tbody>
</table>

Composition comments: All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures:

- **Eye contact**: Rinse with water. Get medical attention if irritation persists after washing.
- **Skin contact**: Rinse skin with water/shower. Get medical attention if irritation persists after washing.
- **Inhalation**: No specific first aid measures noted.
- **Ingestion**: Rinse mouth. Large quantities: Get medical attention if symptoms occur.

Notes to physician: No specific indications.
General advice: No recommendation given.
5. Fire Fighting Measures

Flammable properties
The product is non-combustible. During fire, gases hazardous to health may be formed.

Extinguishing media

Suitable extinguishing media
Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media
None.

Protection of firefighters

Protective equipment and precautions for firefighters
Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

Hazardous combustion products
Carbon Dioxide. Carbon monoxide.

6. Accidental Release Measures

Personal precautions
Avoid prolonged or repeated contact with skin. See Section 8 of the MSDS for Personal Protective Equipment.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

Methods for containment
Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.

Methods for cleaning up
Absorb spillage with suitable absorbent material. For waste disposal, see section 13 of the MSDS.

7. Handling and Storage

Handling
Avoid prolonged or repeated contact with skin. Observe good industrial hygiene practices.

Storage
Store in closed original container in a dry place. Store away from incompatible materials.

8. Exposure Controls / Personal Protection

Occupational exposure limits
No exposure limits noted for ingredient(s).

Engineering controls
Provide adequate ventilation.

Personal protective equipment

Eye / face protection

Skin protection
For prolonged or repeated skin contact use suitable protective gloves. Suitable gloves can be recommended by the glove supplier. Risk of splashes: Use skin protection.

Respiratory protection
No personal respiratory protective equipment normally required.

General hygiene considerations
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Color
Not available.

Odor
Not available.

Odor threshold
Not available.

Physical state
Liquid.

Form
Liquid.

pH
Not available.

Melting point
Not available.

Freezing point
Not available.

Boiling point
Not available.

Flash point
Not available.

Evaporation rate
Not available.

Flammability
Not available.

Flammability limits in air, upper, % by volume
Not available.

Flammability limits in air, lower, % by volume
Not available.
Vapor pressure: Not available.
Vapor density: Not available.
Specific gravity: 1.0247 (25°C)
Solubility (water): Not available.
Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature: Not available.
Decomposition temperature: Not available.

10. Chemical Stability & Reactivity Information
Chemical stability: Material is stable under normal conditions.
Conditions to avoid: Excessive heat. Freezing. Contact with incompatible materials.
Incompatible materials: Strong oxidizing agents.
Hazardous decomposition products: Carbon Dioxide. Carbon monoxide.
Possibility of hazardous reactions: Will not occur.

11. Toxicological Information
Acute effects: No additional adverse health effects noted.
Sensitization: Not a skin sensitizer.
Chronic effects: No additional adverse health effects noted.
Carcinogenicity: Not classified.
Mutagenicity: Not classified.
Reproductive effects: Not classified.
Teratogenicity: Not classified.

12. Ecological Information
Ecotoxicological data
Components
Sodium citrate, dihydrate, EP (6132-04-3) EC50 Water flea (Ceriodaphnia dubia): 655 - 825.9 mg/l 48 hours

Ecotoxicity: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability: No data available.
Bioaccumulation / Accumulation: No data available.
Partition coefficient (n-octanol/water): Not available.
Mobility in environmental media: No data available.

13. Disposal Considerations
Disposal instructions: This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.
Waste from residues / unused products: Dispose in accordance with all local, State and Federal regulations.

14. Transport Information
DOT: Not regulated as dangerous goods.
IATA
Not regulated as dangerous goods.
IMDG
Not regulated as dangerous goods.
TDG
Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. Regulated by FDA under Compassionate Use regulations.
CERCLA/SARA Hazardous Substances - Not applicable.
This material is not listed on the US TSCA 8(b) Inventory, therefore it may only be used for TSCA Exempt purposes such as R&D or Drug use.

CERCLA (Superfund) reportable quantity (lbs)

None

Supervision Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance
No

Section 311 hazardous chemical
No

Drug Enforcement Agency (DEA)
Not controlled

WHMIS status
Non-controlled

Inventory status

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
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<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
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<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
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<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
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<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

Further information
HMIS® is a registered trade and service mark of the NPCA.

Other information
For approved FDA drug use. Keep out of reach of children.

HMIS® ratings
Health: 0
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 0
Flammability: 0
Instability: 0
Disclaimer

The information in this MSDS was obtained for sources which we believe are reliable. However, the information is provided without any representation or warranty, express or implied, regarding its accuracy or correctness.

Issue date

06-16-2010