1. Product and Company Identification

Material name: Anticoagulant Citrate Phosphate Dextrose Solution USP

Version #: 01

Revision date: 01-14-2011

Chemical description: Anticoagulant

CAS #: Mixture

MSDS Number: 1087899

Product use: Pharmaceutical

Synonym(s): Anticoagulant Citrate Phosphate Dextrose Adenine Solution, USP, Anticoagulant Citrate Phosphate Dextrose Adenine Solution, EP, Anticoagulant Citrate Phosphate Dextrose Adenine Solution, CPDA Solution, CPDA-1 Solution, CPDA, Anticoagulant Citrate Dextrose Adenine Solution (CPDA)

Manufacturer information:
Fenwal Inc
Three Corporate Drive
Lake Zurich
IL 60047
United States
General Assistance: 1-847 550-2300
Contact person: Arlene Farrar, Fenwal, Inc., Environmental Health & Safety

2. Hazards Identification

Physical state: Liquid

Appearance: Aqueous solution

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.

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>Water</td>
<td>7732-18-5</td>
<td>&gt; 94</td>
</tr>
<tr>
<td>Dextrose, Monohydrate, EP</td>
<td>14431-43-7</td>
<td>1-5</td>
</tr>
<tr>
<td>Sodium citrate, dihydrate, EP</td>
<td>6132-04-3</td>
<td>1-5</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.
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
Specific hazards arising from the chemical
None known.

Protective equipment and precautions for firefighters
Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
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 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 unless allowed by local regulations.

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
Risk of splashes: Wear approved safety goggles.

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

Appearance
Aqueous solution.

Color
Clear.

Odor
None.

Odor threshold
Not available.

Physical state
Liquid.

Form
Liquid.

pH
5 - 6
Melting point: Similar to water
Freezing point: Similar to water
Boiling point: Similar to water
Flash point: Not flammable
Evaporation rate: Similar to water
Flammability: Not flammable
Flammability limits in air, upper, % by volume: Not flammable
Flammability limits in air, lower, % by volume: Not flammable
Vapor pressure: Similar to water
Vapor density: Similar to water
Specific gravity: Similar to water
Solubility (water): Not applicable
Partition coefficient (n-octanol/water): Not applicable
Auto-ignition temperature: Not applicable
Decomposition temperature: Not applicable

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: None noted.
Hazardous decomposition products: Carbon monoxide. Chlorine. Sodium oxides.
Possibility of hazardous reactions: Will not occur.

11. Toxicological Information

Toxicological data
Components: Dextrose, Monohydrate, EP (14431-43-7)
Test Results: Acute Other LD Rabbit: 35 g/kg
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.
Symptoms and target organs: May cause redness and pain.

12. Ecological Information

Ecotoxicological data
Components: Sodium citrate, dihydrate, EP (6132-04-3)
Test Results: 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 applicable
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. 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. Regulated by FDA under Compassionate Use regulations. CERCLA/SARA Hazardous Substances - Not applicable.

CERCLA (Superfund) reportable quantity (lbs)
None

Superfund 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>
</tr>
<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>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
</tbody>
</table>
Country(s) or region | Inventory name                                                                 | On inventory (yes/no) |
---------------------|---------------------------------------------------------------------------------|-----------------------|
Japan               | Inventory of Existing and New Chemical Substances (ENCS)                        | No                    |
Korea               | Existing Chemicals List (ECL)                                                   | No                    |
New Zealand         | New Zealand Inventory                                                           | Yes                   |
Philippines         | Philippine Inventory of Chemicals and Chemical Substances (PICCS)               | Yes                   |
United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                                    | Yes                   |

*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 drug use in countries where registered. 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**

01-14-2011

**This data sheet contains changes from the previous version in section(s):**

- Fire Fighting Measures: Hazardous combustion products
- Fire Fighting Measures: Protective equipment and precautions for firefighters
- Fire Fighting Measures: Specific hazards arising from the chemical
- Accidental Release Measures: Environmental precautions
- Physical & Chemical Properties: Odor
- Chemical Stability & Reactivity Information: Incompatible materials
- Chemical Stability & Reactivity Information: Hazardous decomposition products
- Toxicological Information: Symptoms and target organs
- Other Information: Other information