1. Product and Company Identification

Material name Anticoagulant citrate phosphate dextrose solution, USP
Version # 02
Revision date 01-14-2011
Chemical description Anticoagulant.
CAS # Mixture
Product use Pharmaceutical.
Synonym(s) Anticoagulant Citrate Phosphate Dextrose Solution, EP, Anticoagulant Citrate Phosphate Dextrose Solution, CPD Solution, CPD
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>
<tr>
<td>Citric acid, anhydrous, EP</td>
<td>77-92-9</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Monobasic sodium phosphate, monohydrate</td>
<td>7558-80-7</td>
<td>&lt; 1</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
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  1.0278  
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  

<table>
<thead>
<tr>
<th>Toxicological data</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td></td>
</tr>
<tr>
<td>Anticoagulant citrate phosphate dextrose solution, USP (Mixture)</td>
<td>Acute Other LD Rabbit: 1404 g/kg estimated</td>
</tr>
<tr>
<td>Components</td>
<td>Test Results</td>
</tr>
<tr>
<td>Dextrose, Monohydrate, EP (14431-43-7)</td>
<td>Acute Other LD Rabbit: 35 g/kg</td>
</tr>
<tr>
<td>Citric acid, anhydrous, EP (77-92-9)</td>
<td>Acute Oral LD50 Rat: 6730 mg/kg</td>
</tr>
</tbody>
</table>

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  

<table>
<thead>
<tr>
<th>Components</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium citrate, dihydrate, EP (6132-04-3)</td>
<td>EC50 Water flea (Ceriodaphnia dubia): 655 - 825.9 mg/l 48 hours</td>
</tr>
</tbody>
</table>

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
Bioaccumulation / Accumulation
Partition coefficient (n-octanol/water)
Mobility in environmental media

No data available.
No data available.
Not applicable
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
Country(s) or region Inventory name On inventory (yes/no)*
Australia Australian Inventory of Chemical Substances (AICS) No
Canada Domestic Substances List (DSL) No
Canada Non-Domestic Substances List (NDSL) No
China Inventory of Existing Chemical Substances in China (IECSC) No
<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<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>
<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>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<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 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
- Other Information: Other information