



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

**Material name** Anticoagulant citrate dextrose solution formula B, USP  
**Version #** 02  
**Revision date** 01-14-2011  
**CAS #** Mixture  
**Product use** Anticoagulant.  
**Synonym(s)** Anticoagulant Citrate Dextrose Solution, Formula B, EP, ACD-B Solution, ACD-B, ACD Solution, USP, formula B  
**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** 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). This preparation is not classified as dangerous according to Directive 1999/45/EC and its amendments.  
**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

Components	CAS #	Percent
Dextrose, anhydrous, EP	50-99-7	1-5
Sodium citrate, dihydrate, EP	6132-04-3	1-5
Water	7732-18-5	Approx. 97

**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** Liquid.

**Color** None.

**Odor** None.

**Odor threshold** Not available.

**Physical state** Liquid.

**Form** Liquid.

**pH** Not available.

**Melting point** Similar to water

**Freezing point** Similar to water

**Boiling point** Similar to water

<b>Flash point</b>	Not flammable
<b>Evaporation rate</b>	Similar to water
<b>Flammability</b>	Not flammable
<b>Flammability limits in air, upper, % by volume</b>	Not flammable
<b>Flammability limits in air, lower, % by volume</b>	Not flammable
<b>Vapor pressure</b>	Similar to water
<b>Vapor density</b>	Similar to water
<b>Specific gravity</b>	Similar to water
<b>Solubility (water)</b>	Not applicable
<b>Partition coefficient (n-octanol/water)</b>	Not applicable
<b>Auto-ignition temperature</b>	Not applicable
<b>Decomposition temperature</b>	Not applicable

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Conditions to avoid</b>	Excessive heat. Freezing. Contact with incompatible materials.
<b>Incompatible materials</b>	None noted.
<b>Hazardous decomposition products</b>	Carbon monoxide. Chlorine. Sodium oxides.
<b>Possibility of hazardous reactions</b>	Will not occur.

## 11. Toxicological Information

### Toxicological data

<b>Components</b>	<b>Test Results</b>
Dextrose, anhydrous, EP (50-99-7)	Acute Other LD Rabbit: 35 g/kg
<b>Acute effects</b>	No additional adverse health effects noted.
<b>Sensitization</b>	Not a skin sensitizer.
<b>Chronic effects</b>	No additional adverse health effects noted.
<b>Carcinogenicity</b>	Not classified.
<b>Mutagenicity</b>	Not classified.
<b>Reproductive effects</b>	Not classified.
<b>Teratogenicity</b>	Not classified.
<b>Symptoms and target organs</b>	May cause redness and pain.

## 12. Ecological Information

### Ecotoxicological data

<b>Components</b>	<b>Test Results</b>
Sodium citrate, dihydrate, EP (6132-04-3)	EC50 Water flea (Ceriodaphnia dubia): 655 - 825.9 mg/l 48 hours
<b>Ecotoxicity</b>	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.
<b>Persistence and degradability</b>	No data available.
<b>Bioaccumulation / Accumulation</b>	No data available.
<b>Partition coefficient (n-octanol/water)</b>	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

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
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: Appearance  
Physical & Chemical Properties: Color  
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