

**SAFETY DATA SHEET**  
for  
**Additive Solution Formula 3**

**1. Identification**

**Product Identifier:** Additive Solution Formula 3 (typically offered in volumes of 100, 200, and 350 mL)

**Synonyms:** AS-3

**Product Use:** Red blood cell preservative solution

**Manufacturers:** Terumo BCT  
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Lakewood, CO 80215  
USA  
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**General Use:** Safety Data Sheets are designed to protect the health and safety of people in the workplace by providing information on the hazards of drug products and how they should be safely used, stored, transported, and disposed of.

**2. Hazard Identification**

Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200); Regulation (EC) No 1272/2008 - Classification, Labelling and Packaging of Substances and Mixtures (CLP); and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

**GHS Classification:**

Health	Environmental	Physical
Not Classified	Could Not Classify	Could Not Classify

**GHS Label:**

Symbols: None Signal word: Not applicable	
<u>Hazard Statements</u> None	<u>Precautionary Statements</u> None

**Other Hazards:** No other hazards were identified. Personal protective equipment for the safe handling of this compound can be found in Section 8 – Exposure Controls/Personal Protection.

### 3. Composition / Information on Ingredients

Component	CAS Number	EINECS Number	Amount (%)	GHS Classification
Dextrose Monohydrate	14431-43-7	604-408-5	1.10 g/100 mL	Not Classified
Sodium Citrate Dihydrate	6132-04-3	200-675-3	0.588 g/100 mL	Not Classified
Sodium Chloride	7647-14-5	231-598-3	0.410 g/100 mL	Not Classified
Monobasic Sodium Phosphate Monohydrate	10049-21-5	231-449-2	0.276 g/100 mL	Not Classified
Citric Acid Monohydrate	5949-29-1	201-069-1	0.042 g/100 mL	Causes serious eye irritation (Category 2), H319  May cause respiratory irritation (Category 3), H335
Adenine	73-24-5	200-796-1	0.030 g/100 mL	Toxic if swallowed (Category 3), H301
Water for Injection (Purified water)	7732-18-5	231-791-2	As required	Not Classified

### 4. First Aid Measures

**Description of First Aid Measures, Immediate Medical Attention, and Special Treatment, if Necessary:**

**Eye:** If easy to do, remove contact lenses, if worn. Immediately flush eyes with copious quantities of water for at least 15 minutes. If irritation occurs or persists, notify medical personnel and supervisor.

**Skin:** Wash exposed area with soap and water and remove contaminated clothing/shoes. If irritation occurs or persists, notify medical personnel and supervisor.

**Inhalation:** Immediately move exposed subject to fresh air. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Immediately notify medical personnel and supervisor.

**Ingestion:** If swallowed, call a physician immediately. Do not induce vomiting unless directed by medical personnel. Do not give anything to drink unless directed by medical personnel. Never give anything by mouth to an unconscious person. Notify medical personnel and supervisor.

<b>Most Important Symptom/Effects:</b>	Medical conditions aggravated by exposure: None known or reported. Treat symptomatically and supportively.
<b>Effects, Acute and Delayed:</b>	Known symptoms or effects (if any) are described in Section 11 – Toxicological Information.

### 5. Fire Fighting Measures

<b>Suitable Extinguishing Media:</b>	Use water spray (fog), foam, dry powder, or carbon dioxide as appropriate for surrounding fire and materials.
<b>Special Hazards Arising from the Chemical:</b>	No information identified. May emit carbon monoxide, carbon dioxide, oxides of nitrogen, and other nitrogen-containing compounds.
<b>Fire and Explosion Hazards:</b>	No information identified.
<b>Special Protective Measures for Firefighters:</b>	In case of fire in the surroundings, use the appropriate extinguishing agent. Wear full protective clothing and an approved, positive pressure, self-contained breathing apparatus. Decontaminate all equipment after use.

### 6. Accidental Release Measures

<b>Personal Precautions, Protective Equipment and Emergency Procedures:</b>	No specific protective equipment is required; follow general hygiene and safety practices.
<b>Environmental Precautions:</b>	Do not empty into drains. Avoid release to the environment.
<b>Methods and Materials for Containment:</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
<b>Cleaning up:</b>	Contain and collect the spill using absorbent materials such as sand, earth, or inert material. Transfer the absorbed material into suitable containers for disposal. Prevent the material from entering drains or watercourses.
<b>Other Information:</b>	See Sections 8 and 13 for more information.

### 7. Handling and Storage

<b>Precautions for Safe Handling:</b>	Avoid contact with skin and eyes. Use appropriate personal protective equipment when handling. Handle in accordance with good industrial hygiene and safety practices. Keep away from incompatible materials, sparks, open flames, and sources of heat. Prevent spills and leaks.
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**Storage Conditions:** Store between 2°C to 25°C. Avoid excessive heat and protect from freezing.

**8. Exposure Controls / Personal Protection**

**Control Parameters/Occupational Exposure Limits:**

Exposure Limits Component Name	OSHA PEL (TWA)	ACGIH TLV (TWA)	NIOSH REL (TWA)
Dextrose Monohydrate	Not Established	Not Established	Not Established
Sodium Citrate Dihydrate	Not Established	Not Established	Not Established
Sodium Chloride	Not Established	Not Established	Not Established
Monobasic Sodium Phosphate Monohydrate	Not Established	Not Established	Not Established
Citric Acid Monohydrate	Not Established	Not Established	Not Established
Adenine	Not Established	Not Established	Not Established
Water for Injection	Not Established	Not Established	Not Established

**Appropriate Engineering Controls:** No special engineering controls are required. General ventilation is recommended to maintain good workplace hygiene practices.

**Respiratory Protection:** No specific respiratory protection is required for this product in its final form, except in case of aerosol formation. Use in well-ventilated areas.

**Hand Protection:** Wear nitrile or other impervious gloves if skin contact is possible.

**Eye Protection:** Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

**Skin and Body Protection:** Wear proper gowning appropriate to the task. Protective garments (coveralls, disposable coveralls, lab coats) are not to be worn in common areas (such as cafeterias) or out-of-doors. Employees must be trained in proper gowning and degowning practices.

**Other Protective Measures:** Wash hands in the event of contact with this substance, especially before eating, drinking, or smoking. Protective equipment is not to be worn outside the work area (such as in common areas or out-of-doors).

**Environmental Exposure Control:** Avoid release to the environment and operate within closed systems wherever practicable. Liquid emissions should be directed to appropriate pollution control devices. In case of spill, do not release to drains. Implement appropriate and effective emergency response procedure.

## 9. Physical and Chemical Properties

<b>Physical Form/Appearance:</b>	Clear, colorless solution
<b>Formula:</b>	Mixture
<b>Molecular Mass:</b>	No data available
<b>Odor:</b>	Odorless
<b>Odor Threshold:</b>	No data available
<b>pH:</b>	5.2 to 6.2
<b>Melting Point:</b>	No data available
<b>Freezing Point:</b>	0°C
<b>Boiling Point:</b>	100°C
<b>Flash Point:</b>	No data available
<b>Relative Evaporation Rate (butyl acetate=1):</b>	No data available
<b>Vapor Pressure:</b>	No data available
<b>Relative Vapor Density:</b>	No data available
<b>Relative Density:</b>	No data available
<b>Solubility:</b>	No data available
<b>Partition Coefficient (n-octanol/water):</b>	No data available
<b>Auto-Ignition Temperature:</b>	No data available
<b>Decomposition Temperature:</b>	No data available
<b>Viscosity, Kinematic</b>	No data available
<b>Viscosity, Dynamic</b>	No data available
<b>Explosion Limits:</b>	No data available
<b>Explosive Properties:</b>	No data available
<b>Oxidizing Properties:</b>	No data available

## 10. Stability and Reactivity

<b>Reactivity:</b>	Contact with incompatible materials. Exposure to heat.
<b>Chemical Stability:</b>	Stable under normal storage conditions.
<b>Possibility of Hazardous Reactions:</b>	None known.
<b>Conditions to Avoid:</b>	Contact with incompatible materials and exposure to heat.
<b>Incompatible Materials:</b>	Acids, bases, and oxidizers.
<b>Hazardous Decomposition Products:</b>	Not available.

## 11. Toxicology Information

### Signs and Symptoms of Overexposure:

Dextrose Monohydrate: Nausea, vomiting, shortness of breath.

Sodium Citrate Dihydrate: May cause cough, sore throat, redness to eye.

Purified Water: No acute data available.

**Likely Routes of Exposure:** All the formulation components may be absorbed by inhalation, ingestion, and skin and eye contact.

**Acute Toxicity:**

AS-3: ATE<sub>mix</sub>: 4034 mg/kg

Dextrose Monohydrate: Rat – oral median lethal dose (LD<sub>50</sub>) of 25.800 mg/kg (anhydrous substance).

Sodium Citrate Dihydrate: Rat – oral LD<sub>50</sub> of > 2280 mg/kg, mouse – oral LD<sub>50</sub> of 6150 mg/kg, and rat – dermal LD<sub>50</sub> of > 2000 mg/kg.

Sodium Chloride: Human – oral lowest toxic dose (TD<sub>Lo</sub>) of 12357 mg/kg, man – oral lowest lethal dose (LD<sub>Lo</sub>) of 1000 mg/kg, rat – oral LD<sub>50</sub> of 3000 mg/kg, rat – inhalation median lethal concentration (LC<sub>50</sub>) of > 42000 mg/m<sup>3</sup>/1 hour (h), rat – subcutaneous (SC) LD<sub>Lo</sub> of 3500 mg/kg, mouse – oral LD<sub>50</sub> of 4000 mg/kg, mouse – intraperitoneal (IP) LD<sub>50</sub> of 2602 mg/kg, mouse – SC LD<sub>50</sub> of 3000 mg/kg, mouse – intravenous (IV) LD<sub>50</sub> of 645 mg/kg, mouse – intracervical LD<sub>50</sub> of 131 mg/kg, dog – IV LD<sub>Lo</sub> of 2000 mg/kg, rabbit – oral LD<sub>Lo</sub> of 8000 mg/kg, rabbit – skin LD<sub>50</sub> of > 10000 mg/kg, rabbit – IV LD<sub>Lo</sub> of 1100 mg/kg, guinea pig – SC LD<sub>Lo</sub> of 2160 mg/kg, guinea pig – IV LD<sub>Lo</sub> of 300 mg/kg, guinea pig – parenteral LD<sub>Lo</sub> of 300 mg/kg, and guinea pig – intraarterial LD<sub>Lo</sub> of 300 mg/kg.

Monobasic Sodium Phosphate Monohydrate: Rat – oral LD<sub>50</sub> of 8290 mg/kg, rabbit – dermal LD<sub>50</sub> of > 7940 mg/kg, and rat – inhalation LC<sub>50</sub> of > 0.83 mg/L.

Citric Acid Monohydrate: Rat – oral LD<sub>50</sub> of 11700 mg/kg, rat – IP LD<sub>50</sub> of 375 mg/kg, and mouse – oral LD<sub>50</sub> of 5790 mg/kg.

Adenine: Rat – IP LD<sub>50</sub> of 198 mg/kg, mouse – oral LD<sub>50</sub> of 783 mg/kg, mouse – IP LD<sub>50</sub> of 100 mg/kg, mouse – SC LD<sub>Lo</sub> of 1000 mg/kg, mouse – IV LD<sub>50</sub> of > 30 mg/kg, and rat – oral LD<sub>50</sub> of 227 mg/kg.

Purified Water: Rat – oral LD<sub>50</sub> of > 90000 mL/kg, mouse – IP LD<sub>50</sub> of 190000 mg/kg, mouse – IV LD<sub>50</sub> of 25000 mg/kg, dog – oral LD<sub>Lo</sub> of 629000 mg/kg, cat – oral LD<sub>Lo</sub> of 320000 mg/kg, rabbit – oral LD<sub>Lo</sub> of 368000 mg/kg, rabbit – IV LD<sub>Lo</sub> of 13000 mg/kg, rabbit – rectal LD<sub>Lo</sub> of 450000 mg/kg, guinea pig – oral LD<sub>Lo</sub> of 429000 mg/kg, man – oral TD<sub>Lo</sub> of 42860 mg/kg, women – rectal LD<sub>Lo</sub> of 180000 mg/kg, and infant – oral TD<sub>Lo</sub> of 333000 mg/kg.

**Skin Corrosion/Irritation:**

Dextrose Monohydrate: No information is available for this compound.

Sodium Citrate Dihydrate: No skin irritation (OECD Test Guideline 404).

Sodium Chloride: Based on available data, the classification criteria are not met.

Monobasic Sodium Phosphate Monohydrate: Based on available data, the classification criteria are not met.

Citric Acid Monohydrate: Causes severe skin irritation.

Adenine: No skin irritation in reconstructed human epidermis (RhE) (OECD Test Guideline 439).

Purified Water: No information is available for this compound.

#### **Serious Eye Damage/Irritation:**

Dextrose Monohydrate: No information is available for this compound.

Sodium Citrate Dihydrate: No eye irritation – 72 hours (OECD Test Guideline 405).

Sodium Chloride: No information is available for this compound.

Monobasic Sodium Phosphate Monohydrate: Based on available data, the classification criteria are not met.

Citric Acid Monohydrate: Causes severe eye irritation.

Adenine: Based on available data, the classification criteria are not met.

Purified Water: No information is available for this compound.

#### **Skin Sensitization:**

Dextrose Monohydrate: No information is available for this compound.

Sodium Chloride: No information is available for this compound.

Citric Acid Monohydrate: Based on available data, the classification criteria are not met.

Adenine: No skin sensitization information is available for this compound.

Purified Water: No skin sensitization information is available for this compound.

#### **Germ Cell Mutagenicity:**

Dextrose Monohydrate: No information is available for this compound.

Sodium Citrate Dihydrate: No information is available for this compound.

Sodium Chloride: Based on available data, the classification criteria are not met.

Monobasic Sodium Phosphate Monohydrate: No information is available for this compound.

Citric Acid Monohydrate: Based on available data, the classification criteria are not met.

Adenine: No information is available for this compound.

Purified Water: No cell mutagenicity information is available for this compound.

**Carcinogenicity:**

Dextrose Monohydrate: No information is available for this compound.

Sodium Citrate Dihydrate: No information is available for this compound.

Sodium Chloride: Not classified.

Monobasic Sodium Phosphate Monohydrate: Based on available data, the classification criteria are not met. Not listed in NTP Report on Carcinogens or in IARC Monographs (latest editions) or US OSHA reports on potential carcinogens.

Citric Acid Monohydrate: No information is available for this compound.

Adenine: No carcinogenicity information is available for this compound. Not listed in NTP Report on Carcinogens or in IARC Monographs (latest editions) or US OSHA reports on potential carcinogens.

Purified Water: No carcinogenicity information is available for this compound. Not listed in NTP Report on Carcinogens or in IARC Monographs (latest editions) or US OSHA reports on potential carcinogens.

**Reproductive/Developmental Effects:**

Dextrose Monohydrate: No information is available for this compound.

Sodium Citrate Dihydrate: No information is available for this compound.

Sodium Chloride: Based on available data, the classification criteria are not met.

Monobasic Sodium Phosphate Monohydrate: Based on available data, the classification criteria are not met.

Citric Acid Monohydrate: Based on available data, the classification criteria are not met.

Adenine: No information is available for this compound.

Purified Water: No information is available for this compound.

**Aspiration Hazard:**

Dextrose Monohydrate: No information is available for this compound.

Sodium Citrate Dihydrate: No information is available for this compound.



Sodium Chloride: Based on available data, the classification criteria are not met.

Monobasic Sodium Phosphate Monohydrate: Based on available data, the classification criteria are not met.

Citric Acid Monohydrate: Based on available data, the classification criteria are not met.

Adenine: No information is available for this compound.

Purified Water: Aspiration studies are not available for this compound.

**Specific target organ toxicity – single exposure**

Dextrose Monohydrate: No information is available for this compound.

Sodium Citrate Dihydrate: No information is available for this compound.

Sodium Chloride: No information is available for this compound.

Monobasic Sodium Phosphate Monohydrate: No information is available for this compound.

Citric Acid Monohydrate: Respiratory system.

Adenine: No information is available for this compound.

Purified Water: Aspiration studies are not available for this compound.

**Specific target organ toxicity – repeated exposure:**

Dextrose Monohydrate: No information is available for this compound.

Sodium Citrate Dihydrate: No information is available for this compound.

Sodium Chloride: No information is available for this compound.

Monobasic Sodium Phosphate Monohydrate: Based on available data, the classification criteria are not met.

Citric Acid Monohydrate: No information is available for this compound.

Adenine: No information is available for this compound.

Purified Water: Aspiration studies are not available for this compound.

## 12. Ecological Information

<b>Toxicity</b>	Dextrose Monohydrate: No data available.
	Sodium Citrate Dihydrate: <i>Ceriodaphnia dubia</i> (water flea) – EC <sub>50</sub> (48 h) of 655 mg/L, <i>Poecilia reticulata</i> (guppy) – LC <sub>50</sub> of > 18.000 to 32.000 mg/L (96 h) (anhydrous substance).
	Sodium Chloride: <i>Lepomis macrochirus</i> (Bluegill) – LC <sub>50</sub> of 5.840 mg/L (96 h), <i>Daphnia magna</i> (water flea) – static test EC <sub>50</sub> of 874 mg/L (48 h), <i>Daphnia magna</i> (water flea) – static test LC <sub>50</sub> of 4.136 mg/L (48 h), <i>Nitzschia</i> species – static test EC <sub>50</sub> 2.430 mg/L (120 h), <i>Pimephales promelas</i> (fathead minnow) – flow-through test NOEC of 252 mg/L (33 days), <i>Daphnia pulex</i> (water flea) – semi-static test NOEC of 314 mg/L (21 days).
	Monobasic Sodium Phosphate Monohydrate: <i>Oncorhynchus mykiss</i> – LC <sub>50</sub> of > 100 mg/L (96 h), <i>Daphnia magna</i> – EC <sub>50</sub> of > 100 mg/L (48 h), <i>Desmodesmus subspicatus</i> – EC <sub>50</sub> of > 100 mg/L.
	Citric Acid Monohydrate: <i>Leuciscus idus</i> – LC <sub>50</sub> of 440 to 760 mg/L (96 h), <i>Photobacterium phosphoreum</i> – EC <sub>50</sub> of 14 mg/L/15 minutes, water flea – EC <sub>50</sub> of 120 mg/L (72 h), <i>Scenedesmus quadricauda</i> (green algae) – static test NOEC of 425 mg/L (8 h).
	Adenine: <i>Daphnia magna</i> – EC <sub>50</sub> of > 100 mg/L (nominal) (48 h), <i>Raphidocelis subcapitata</i> – ErC <sub>50</sub> of 4.33 mg/L (nominal) (72 h), <i>Raphidocelis subcapitata</i> – aquatic long-term (chronic) toxicity ErC <sub>10</sub> of 2.82 mg/L (nominal) (72 h).
<b>Persistence and Degradability:</b>	Purified Water: No data available.
	Dextrose Monohydrate: Readily biodegradable.
	Sodium Citrate Dihydrate: No data available.
	Sodium Chloride: PNEC aqua (freshwater) – 5 mg/L.
	Monobasic Sodium Phosphate Monohydrate: Soluble in water, persistence is unlikely, based on information available. Citric Acid Monohydrate: Persistence is unlikely, readily biodegradable (OECD Test Guideline 301B).
	Adenine: Persistence is unlikely, based on information available.
Purified Water: No data available.	

**Bioaccumulative Potential:**

Dextrose Monohydrate: Does not significantly accumulate in organisms.

Sodium Citrate Dihydrate: No data available.

Sodium Chloride: No data available.

Monobasic Sodium Phosphate Monohydrate: Bioaccumulation is unlikely.

Citric Acid Monohydrate: Bioaccumulation is unlikely, Log P<sub>ow</sub> of -1.72.

Adenine: Bioaccumulation is unlikely, Log P<sub>ow</sub> of -0.1.

Purified Water: No data available.

**Mobility in Soil:**

Dextrose Monohydrate: No data available.

Sodium Citrate Dihydrate: No data available.

Sodium Chloride: No data available.

Monobasic Sodium Phosphate Monohydrate: Will likely be mobile in the environment due to its water solubility, highly mobile in soils.

Citric Acid Monohydrate: Will likely be mobile in the environment due to its water solubility.

Adenine: Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

Purified Water: No data available.

**Results of PBT and vPvB Assessment:**

Dextrose Monohydrate: No data available.

Sodium Citrate Dihydrate: No data available.

Sodium Chloride: No data available.

Monobasic Sodium Phosphate Monohydrate: No data available.

Citric Acid Monohydrate: No data available.

Adenine: No data available.

Purified Water: No data available.

**Other Adverse Effects:**

Dextrose Monohydrate: No data available.

Sodium Citrate Dihydrate: No data available.

Sodium Chloride: No data available.

Monobasic Sodium Phosphate Monohydrate: No data available.

Citric Acid Monohydrate: No data available.

Adenine: No data available.

Purified Water: No data available.

### 13. Disposal Considerations

**Waste Treatment Methods:** Dispose of any cleanup materials and waste residue according to prescribed federal, state, and local regulations.

### 14. Transportation Information

<b>Transport:</b>	Based on the available data, this substance is not regulated as a hazardous material/dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG.
<b>UN Number:</b>	None assigned
<b>UN Proper Shipping Name:</b>	None assigned
<b>DOT Hazard Class:</b>	None assigned
<b>Packing Group:</b>	None assigned
<b>Marine Pollutant:</b>	Based on the available data, this substance is not regulated as an environmental hazard or a marine pollutant.
<b>Special Transport Precautions: Transport in Bulk According to Annex II of Marpol and the IBC Code:</b>	Avoid release to the environment. Not applicable

### 15. Regulatory Information

<b>Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture</b>	This SDS generally complies with the requirements listed under current guidelines in the US, EU, and Canada. Consult your local or regional authorities for more information.
<b>Chemical Safety Assessment:</b>	No chemical safety assessment has been carried out.
<b>TSCA:</b>	Dextrose Monohydrate, Sodium Citrate Dihydrate, Sodium Chloride, Monobasic Sodium Phosphate Monohydrate, Citric Acid Monohydrate, and Adenine are listed under the TSCA.
<b>Canada DSL/NDSL:</b>	Dextrose Monohydrate, Sodium Citrate Dihydrate, Sodium Chloride, Monobasic Sodium Phosphate Monohydrate, Citric Acid

**SARA Section 313:** Monohydrate, and Adenine are listed under Domestic Substances List. This substance is not known to contain a toxic chemical or chemicals in excess of the applicable *de minimis* concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

**California Proposition 65:** California Proposition 65 - This substance is not known to the state of California to cause cancer or developmental and/or reproductive harm.

**Additional Information:** No additional information available.

**16. Other Information**

**Full Text of H Phrases and GHS Classification:** Not classified

**Abbreviations and Acronyms:** ACGIH - American Conference of Governmental Industrial Hygienists; ADR/RID - European Agreement Concerning the International Carriage of Dangerous Goods by Road/Rail; AIHA - American Industrial Hygiene Association; ATEmix - Acute Toxicity Estimate for mixture; API - Active Pharmaceutical Ingredient; CAS# - Chemical Abstract Services Number; CHO - Chinese Hamster Ovary cells; CHO-K1 - CHO K1 line cells; CLP - Classification, Labelling, and Packaging of Substances and Mixtures; CNC - Could Not Classify; DNEL - Derived No Effect Level; DOT - Department of Transportation; DPRA - Direct Peptide Reactivity Assay; EINECS - European Inventory of New and Existing Chemical Substances; ELINCS - European List of Notified Chemical Substances; EU - European Union; GHS - Globally Harmonized System of Classification and Labeling of Chemicals; HEPA - High Efficiency Particulate Air; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IARC - International Agency for Research on Cancer; IBC - Institutional Biosafety Committee; IMDG - International Maritime Dangerous Goods; IP – Intraperitoneal (IP); IV - Intravenous; LD<sub>50</sub> - median lethal dose; LD<sub>Lo</sub> - lowest lethal dose; LC<sub>50</sub> – median lethal concentration; EC<sub>50</sub> - median effective concentration; EL50 -median effective loading

Rate; LL<sub>50</sub> – median lethal loading rate; NC – Not classified; NIOSH - The National Institute for Occupational Safety and Health; NOEL - No Observed Effect Level; NOAEL - No Observed Adverse Effect Level; NTP - National Toxicology Program; OEL - Occupational Exposure Limit; OSHA - Occupational Safety and Health Administration; PBT - Persistent, Bioaccumulative, and Toxic; PEL - Permissible Exposure Limit; PNEC - Predicted No Effect Concentration; REL - Recommended Exposure Limit; SAR - structure-activity relationship; SARA - Superfund Amendments and Reauthorization Act; SC – Subcutaneous; STEL - Short Term Exposure Limit; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; vPvB - Very Persistent and Very Bioaccumulative; UN - United Nations; US WEELs – United States Workplace Environmental Exposure Levels US - United States and WHMIS - Workplace Hazardous Materials Information System.

11 November 2024

**Issue Date:**

**Current Revision:**

D0000105012, Revision A

**Disclaimer:**

This document provides available information relevant to the handling of the experimental substance identified above. The above information is offered in good faith and with the belief that it is accurate. This information should only be used as a guidance and in the event of an adverse event is not intended to be a substitute for consultation with appropriately trained personnel. Terumo BCT disclaims any express or implied warranty as to the accuracy of the information contained herein and shall not be held liable for any direct, incidental, or consequential damages resulting from reliance on the information.