

SAFETY DATA SHEETS

This SDS packet was issued with item:

078120780

The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).

078341074



Material Safety Data Sheet
acc. to ISO/DIS 11014

Page 1 of 6

Printing Date: 2005-Sep-27

Printing Date: Reviewed on

Product Name: BD Vacutainer® Brand Tube with Sodium Citrate Buffer Solution

1 Identification of substance:

- **Product Details:**
MSDS Number: VS60317-09
Issue Date: September 27, 2005
Supersedes: VS60317-08
ECO No.: ECO36115
- **Product Name:** BD Vacutainer® Brand Tube with Sodium Citrate Buffer Solution
- **Catalog Numbers:** 360007, 363047, 363048, 363066, 363079, 363080, 363083, 363086, 363093, 363095, 363097, 366065, 366351, 366392, 366393, 366394, 366395, 366415, 366418, 366465, 366560, 367691, 367706, 367716, 367746, 368026, 368051, 368126, 368926, 368927, 368931, 368932, 369714, 369741, Discontinued: 366466, 369704
- **Manufacturer/Supplier:**
BD Diagnostics, Preanalytical Systems
1 Becton Drive
Franklin Lakes, NJ, 07417-1885
- **Information Department:**
BD Diagnostics, Preanalytical Systems Technical Service, (800) 631-0174
- **Emergency Information:**
In case of a chemical emergency, spill, fire, exposure, contact ChemTrec at (800) 424-9300.

2 Composition/Data on components:

- **Description:**
Chemical name: Sodium citrate
Synonyms: 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, trisodium salt; Lithium citrate hydrate; Trisodium citrate
- **CAS No.:** 68-04-2
- **Quantity of substances:** 6.3 – 39 mg
- **Exposure limits:** Not established

3 Hazards identification:

- **Hazard description:**
EU: This product contains no hazardous constituents, or the concentration of all chemical constituents are below the regulatory threshold limits described by European Directive 91/155/EEC, and 93/112/EC.
U.S.: May cause eye and skin irritation. Inhalation of large amounts of dust may be irritating to the respiratory tract. May cause nausea and vomiting if ingested in large quantities. May also cause hypernoia and convulsing.
Primary route of entry: skin, eyes, inhalation and ingestion
- **Classification system:** The classification is according to the latest editions of the EU- list, and extended by company and literature data.
- **Acute Exposure Effects:**
Eyes: May cause eye irritation.
Skin: May cause skin irritation.

Print Date: 09/29/2005

Version: 9.0

Status: Released

Release Date: 09/29/2005

Releasing ECO: ECO36115

Obtained by Global Safety Management, www.globalsafety.net.com, (877) 683-7460



Material Safety Data Sheet

acc. to ISO/DIS 11014

Page 2 of 6

Printing Date: 2005-Sep-27

Printing Date: Reviewed on

Product Name: BD Vacutainer® Brand Tube with Sodium Citrate Buffer Solution

Inhalation: Inhalation of large amounts of dust may be irritating to the upper respiratory tract.
Ingestion: May cause nausea and vomiting if ingested in large quantities. May also cause hypernoia and convulsing..

- **Repeated Exposure Effects:**

Eyes: None identified.

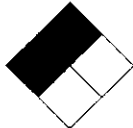
Skin: None identified.

Inhalation: None identified.

Ingestion: None identified.

- **Medical Conditions Which Might be Aggravated:** None identified.

- **NFPA ratings (scale 0-4):**



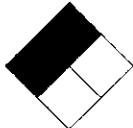
Health = 1

Fire = 0

Reactivity = 0

Specific Hazard = 0

- **HMIS ratings (scale 0-4):**



Health = 1

Flammability = 0

Reactivity = 0

Special = 0

4 First aid measures:

General information: No special measures required

After inhalation: Remove victim to fresh air. Seek immediate medical attention if breathing is difficult.

After skin contact: Wash affected area thoroughly with soap and water. Seek medical attention if irritation develops.

After eye contact: Rinse opened eye for 15 minutes under running water. Seek medical attention if irritation develops.

After Swallowing: Give 2 to 4 glasses of water to dilute. Seek immediate medical attention.

Information for doctor: Show this label

5 Fire fighting measures:

- **Suitable extinguishing agents:** Water spray, dry chemical, carbon dioxide, or alcohol foam.

- **Protective equipment:** Wear self-contained NIOSH approved breathing apparatus operated in positive pressure mode, and full protective clothing to prevent contact with skin and eyes. Keep containers cool by spraying with water.



Material Safety Data Sheet

acc. to ISO/DIS 11014

Page 3 of 6

Printing Date: 2005-Sep-27

Printing Date: Reviewed on

Product Name: BD Vacutainer® Brand Tube with Sodium Citrate Buffer Solution

6 Accidental release measures:

- **Person-related safety precautions:** Avoid overexposure. Wear protective equipment, including NIOSH approved respirator.
- **Measures for environmental protection:** Not applicable
- **Measures for cleaning/collecting:** Do not dry-sweep. Wet down to minimize airborne dust. Place in an appropriate disposal container. Flush area with water.
- **Additional information:** None

7 Handling and storage:

- **Handling:**
Information for safe handling: Do not breathe dust. Avoid dust generation or accumulation. Use adequate ventilation and dust collection.
Information about protection against explosions and fires: Not applicable.
- **Storage:**
Requirements to be met by storerooms and receptacles: Use suitable containers. Keep tightly closed when not in use. Store in a cool, dry, well-ventilated area.
Information about storage in one common storage facility: Store away from incompatible materials, such as strong bases and strong oxidizing agents.
Further information about storage conditions: None

8 Exposure controls and personal protection:

- **Additional information about design of technical systems:** Use sufficient local or general exhaust.
- **Components with limit values that require monitoring at the workplace:**
Exposure limits: None established
- **Additional information:** Not applicable
- **Personal Protective Equipment:**
General protective hygiene measures: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Use with adequate ventilation. Provide eye bath and safety shower.
Breathing equipment: NIOSH-approved respirator
Protection of hands: Wear appropriate protective gloves to prevent skin exposure.
Eye protection: Use chemical safety goggles
Body protection: Wear appropriate protective clothing to prevent skin exposure.

09 Physical and chemical properties:

- **General Information:**
Form: Powder

Print Date: 09/29/2005

Version: 9.0

Status: Released

Release Date: 09/29/2005

Releasing ECO: ECO36115

Obtained by Global Safety Management, www.globalsafety.net, (877) 683-7460



Material Safety Data Sheet
acc. to ISO/DIS 11014

Page 4 of 6

Printing Date: 2005-Sep-27

Printing Date: Reviewed on

Product Name: BD Vacutainer® Brand Tube with Sodium Citrate Buffer Solution

Color: Colorless

Odor: Odorless

• **Change in condition:**

Melting point/Melting range: Not determined

Boiling point/Boiling range: Not determined

• **Flash point:** Not applicable

• **Flammability (solid, gaseous):** Not applicable

• **Danger of explosion:** Under proper handling conditions, product does not present an explosion hazard.

• **Vapor pressure:** Not applicable

• **Density:** Not determined

• **Solubility in/Miscibility w/H₂O:** Not determined

• **pH-value:** Not applicable

Organic solvents: Not applicable

• **Solids content:** Not available

10 Stability and reactivity:

• **Thermal decomposition / conditions to be avoided:** None identified

• **Materials to be avoided:** Strong bases and strong oxidizing agents.

• **Dangerous reactions:** Stable; none known.

• **Dangerous products of decomposition:** Oxides of carbon. Acid smoke and fumes will be emitted when heated.

11 Toxicological information:

• **Acute toxicity:**

Eye: May cause eye irritation.

Skin: May cause skin irritation.

Inhalation: Inhalation of large amounts of dust may be irritating to the upper respiratory tract.

Ingestion: May cause nausea and vomiting if ingested in large quantities. May also cause hypernoia and convulsing..

• **Primary irritant effect:**

On the skin: Not established

On the eye: Not established

• **Sensitization:** Not established

• **Additional toxicological information:**

Chronic: Not established

Carcinogenicity: Does not contain more than 0.1% by weight of a material listed as a potential carcinogen by NTP, IARC, or OSHA.



Material Safety Data Sheet

acc. to ISO/DIS 11014

Page 5 of 6

Printing Date: 2005-Sep-27

Printing Date: Reviewed on

Product Name: BD Vacutainer® Brand Tube with Sodium Citrate Buffer Solution

12 Ecological information:

- **Ecotoxicological effects:** No data is available on the adverse effects of this material on the environment. Neither COD nor BOD data are available.
- **Other information:** Not applicable
- **General notes:** Not applicable

13 Disposal considerations:

- **Product:**
Recommendation
Disposal should be done in accordance with local, state and federal regulations.
Disposal must be made according to the regulations found in 40 CFR 261.
This product is not a RCRA hazardous waste.
- **Uncleaned packagings:**
Recommendation
Disposal should be done in accordance with local, state and federal regulations.
Recommended cleansing agent
Water, if necessary with cleansing agents

14 Transport information:

- **DOT regulations:** Not regulated
- **Land transport ADR/RID (cross-border):** Not regulated
- **Maritime transport IMDG:** Not regulated
- **Air transport ICAO-TI and IATA-DGR:** Not regulated

15 Regulations:

- **SARA Section 355 (extremely hazardous substances):** Substance not listed
- **SARA Section 302 (extremely hazardous substances):** Substance not listed
- **SARA Section 304 (Reportable Quantity (RQ) under CERCLA):** None
- **Section 313 (specific toxic chemical listings):** Substance not listed
- **TSCA (Toxic Substances Control Act) Inventory:** Substance listed
- **California Proposition 65 – Chemicals Known to Cause Cancer:** Substance not listed
- **California Proposition 65 – Chemicals Known to Cause Reproductive Toxicity:** Substance not listed
- **SARA Section 311/312 (Hazard notification categories under SARA Title III):** None
- **Hazardous chemical(s) under OSHA Hazard Communication Standard (29 CFR 1910.1200):** None

Print Date: 09/29/2005
Release Date: 09/29/2005

Version: 9.0

Status: Released
Releasing ECO: ECO36115

Obtained by Global Safety Management, www.globalsafetynet.com, (877) 683-7460



Material Safety Data Sheet
acc. to ISO/DIS 11014

Page 6 of 6

Printing Date: 2005-Sep-27

Printing Date: Reviewed on

Product Name: BD Vacutainer® Brand Tube with Sodium Citrate Buffer Solution

- **Carcinogenicity categories**

IARC (International Agency for Research on Cancer): Substance not listed

NTP (National Toxicology Program): Substance not listed

TLV (Threshold Limit Value established by ACGIH): Substance not listed

MAK (German Maximum Workplace Concentration): Substance not listed

- **Product related hazard information:** None

- **National regulations:** Not applicable

- **Water hazard class:** Not applicable

16 Other information:

To the best of our knowledge, the information contained herein is accurate. However, neither BD or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

- **Department issuing MSDS:** Regulatory Affairs

Print Date: 09/29/2005

Version: 9.0

Status: Released

Release Date: 09/29/2005

Releasing ECO: ECO36115

Obtained by Global Safety Management, www.globalsafety.net, (877) 683-7460



SAFETY DATA SHEET

1. Identification

Product identifier	BD Vacutainer® Citrate Tubes
Other means of identification	
Product code	363080, 363083, 363095, 364305, 366560, 367746, 368273
Recommended use	Blood collection (In-Vitro Diagnostic) device
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company name	BD Diagnostics, PreAnalytical Systems
Address	1 Becton Drive Franklin Lakes, NJ 07417-1885
Telephone	800-631-0174
Contact person	Technical Services
Emergency telephone	Chemtrec US 1-800-424-9300 EU 703-527-3887
E-mail	pas_tech_services@bd.com

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	This material is not considered hazardous by the OSHA Hazard Communication Standard, OSHA 29 CFR 1910.1200.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

4. First-aid measures

Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Wash skin with soap and water. Get medical attention if irritation persists after washing.
Eye contact	Flush eyes with water as a precaution. If irritation occurs, get medical assistance.
Ingestion	Rinse mouth. Get medical attention if any discomfort occurs.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.

General information	No specific first aid measures noted.
5. Fire-fighting measures	
Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	By heating and fire, harmful vapors/gases may be formed.
Special protective equipment and precautions for firefighters	Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures	Avoid contact with eyes and prolonged skin contact. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Wipe up spilled material and place in a suitable container for disposal. Following product recovery, flush area with water. For waste disposal, see Section 13 of the SDS.
Environmental precautions	Environmental manager must be informed of all major spillages.
7. Handling and storage	
Precautions for safe handling	Avoid contact with eyes and prolonged skin contact. Observe good laboratory hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in a cool, dry, well-ventilated place. Keep container closed. Store away from incompatible materials.
8. Exposure controls/personal protection	
Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	No exposure limits noted for ingredient(s).
Appropriate engineering controls	No particular ventilation requirements.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Risk of contact: Wear approved safety goggles.
Skin protection	
Hand protection	For prolonged or repeated skin contact use suitable protective gloves. Nitrile gloves are recommended. Suitable gloves can be recommended by the glove supplier.
Skin protection	
Other	No protection is ordinarily required under normal conditions of use.
Respiratory protection	Under normal conditions, respirator is not normally required.
Thermal hazards	None.
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 and chemical properties	
Appearance	
Physical state	Liquid.
Form	Liquid.
Color	Colorless.
Odor	Odorless.
Odor threshold	Not applicable.
pH	Not available.
Melting point/freezing point	Not available.

Initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Completely soluble in water.
Partition coefficient (n-octanol/water)	No data available.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non reactive under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	None expected under normal conditions of use.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Prolonged contact may cause dryness of the skin.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Ingestion may cause irritation and malaise.

Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
---	---

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitization	
Respiratory sensitization	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Reproductive toxicity	Based on available data, the classification criteria are not met.
Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	No specific chronic health impact noted.
Further information	No additional adverse health effects noted.

12. Ecological information

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.
Bioaccumulative potential	No data available.
Mobility in soil	This product is water soluble and may disperse in soil.
Mobility in general	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Dispose in accordance with all applicable regulations. Do not discharge into drains, water courses or onto the ground.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of waste and residues in accordance with local authority requirements.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is not hazardous according to OSHA 29CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.

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

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

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

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

Not Listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 07-September-2015

Revision date 09-March-2016

Version # 03

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

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

NFPA ratings



References

ACGIH: American Conference of Governmental and Industrial Hygienists.
US. IARC Monographs on Occupational Exposures to Chemical Agents
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer

To the best of our knowledge, the information contained herein is accurate. However, neither BD nor any of its subsidiaries assumes any liability whatsoever for completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

This SDS contains revisions in the following section(s): 1, 16.