SAFETY DATA SHEET

1. Identification

Product identifier **BD Vacutainer® Glucose Determination Tubes**

Other means of identification

Product code 367921, 367922, 367925, 368033, 368920, 368921, 368587, 367934, 367935, 367001

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

Acute toxicity, oral	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Toxic if swallowed. Causes skin irritation. Causes serious eye irritation.

Precautionary statement

Prevention Wear protective gloves/eye protection/face protection. Avoid breathing dust. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Response If swallowed: Immediately call a poison center/doctor. Rinse mouth. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) Contact with acids liberates very toxic gas.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Sodium fluoride	7681-49-4	50-56
Potassium oxalate	583-52-8	44-50

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

Inhalation	No specific precautions due to the small quantities handled. In case of exposure to dust: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Skin contact	Wash skin thoroughly with soap and water. If skin irritation occurs: Get medical advice/attention.
Eye contact	Do not rub eye. Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention promptly if symptoms occur after washing.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Only induce vomiting at the instruction of medical personnel.
Most important symptoms/effects, acute and delayed	Symptoms include itching, burning, redness, and tearing of eyes. Skin irritation. Absorbed fluoride can cause metabolic imbalances with irregular heartbeat, nausea, dizziness, vomiting and seizures.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None.
Specific hazards arising from the chemical	During fire, gases hazardous to health 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. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials. Containers close to fire should be removed or cooled with water.
General fire hazards	The product itself does not burn.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Provide adequate ventilation. Avoid dust formation. Avoid inhalation of dust and contact with skin and eyes. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Collect dust using a vacuum cleaner equipped with HEPA filter. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

7. Handling and storage

Precautions for safe handling	Provide adequate ventilation. Avoid generation and spreading of dust. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Keep the workplace clean. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store in a cool, dry place.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium fluoride (CAS 7681-49-4)	PEL	2.5 mg/m3

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value	Form
Sodium fluoride (CAS 7681-49-4)	TWA	2.5 mg/m3	Dust.

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium fluoride (CAS 7681-49-4)	TWA	2.5 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium fluoride (CAS 7681-49-4)	TWA	2.5 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Sodium fluoride (CAS 7681-49-4)	3 mg/l	Fluoride	Urine	*
	2 mg/l	Fluoride	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear dust goggles.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Skin protection

Other No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Respiratory protection If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL, suitable respiratory protection must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.

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. When using, do not eat, drink or smoke.

9. Physical and chemical properties

Appearance

Physical state Solid.

Form Powder.

Color White to off-white.

Odor Odorless.

Odor threshold Not applicable.

pH Not applicable.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Non combustible.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not 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	Material is stable under normal conditions.
Possibility of hazardous reactions	Reacts with acid to form hydrogen fluoride.
Conditions to avoid	High temperatures. Avoid dust formation. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Acids.
Hazardous decomposition products	None under normal temperatures and pressures.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Dust may irritate respiratory system. Absorption of fluoride ion can cause hypocalcaemia, hypomagnesaemia, and hyperkalaemia, which can result in cardiac arrest.
Skin contact	Causes skin irritation. Hypocalcaemia should be considered a risk in all instances of inhalation or ingestion and whenever skin burns exceed 25 square inches (an area about the size of the palm).
Eye contact	Causes serious eye irritation.
Ingestion	Toxic if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms include itching, burning, redness, and tearing of eyes. Skin irritation. Absorbed fluoride can cause metabolic imbalances with irregular heartbeat, nausea, dizziness, vomiting and seizures.

Information on toxicological effects

Acute toxicity Toxic if swallowed.

Components	Species	Test Results
Sodium fluoride (CAS 7681-49-4)		
Acute		
Oral		
LD50	Rat	51.6 mg/kg

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Due to lack of data the classification is not possible.

Skin sensitization Due to lack of data the classification is not possible.

Germ cell mutagenicity Due to lack of data the classification is not possible.

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

IARC Monographs. Overall Evaluation of Carcinogenicity

Sodium fluoride (CAS 7681-49-4) 3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Reproductive toxicity Due to lack of data the classification is not possible.

Specific target organ toxicity - single exposure Due to lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure Due to lack of data the classification is not possible.

Aspiration hazard Due to the physical form of the product it is not an aspiration hazard.

Chronic effects Prolonged overexposure to fluorides may increase fluoride content of bones and teeth, and may result in fluorosis, and brittleness of bones. May have effects on the bone, resulting in fluorosis.

12. Ecological information

Ecotoxicity The product is 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 The product is not expected to be readily biodegradable.

Bioaccumulative potential Potential to bioaccumulate is low.

Mobility in soil No data available.

Mobility in general No data available.

Other adverse effects The product is not volatile but may be spread by dust-raising handling.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN1690

UN proper shipping name Sodium fluoride, solid mixture

Transport hazard class(es)

Class 6.1

Subsidiary risk -

Label(s) 6.1

Packing group III

Environmental hazards

Marine pollutant No

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions IB8, IP3, T1, TP33

Packaging exceptions 153

Packaging non bulk 213

Packaging bulk 240

IATA

UN number UN1690

UN proper shipping name Sodium fluoride, solid mixture

Transport hazard class(es)

Class 6.1

Subsidiary risk -

Label(s) 6.1

Packing group III

Environmental hazards No

ERG Code 6L

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1690

UN proper shipping name SODIUM FLUORIDE, SOLID MIXTURE

Transport hazard class(es)

Class 6.1

Subsidiary risk -

Label(s) 6.1

Packing group III

Environmental hazards

Marine pollutant No

EmS F-A, S-A

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

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 a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 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)

Sodium fluoride (CAS 7681-49-4) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

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

US. Massachusetts RTK - Substance List

Sodium fluoride (CAS 7681-49-4)

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

Sodium fluoride (CAS 7681-49-4)

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

Sodium fluoride (CAS 7681-49-4)

US. Rhode Island RTK

Sodium fluoride (CAS 7681-49-4)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
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)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
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 09-March-2016

Revision date -

Version # 01

HMIS® ratings
Health: 2
Flammability: 0
Physical hazard: 0

NFPA ratings

List of abbreviations LD50: Lethal Dose, 50%.

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

Disclaimer BD Diagnostics Preanalytical Systems cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

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