



**Product Name:** BD Vacutainer® Brand PLUS Serum Tubes and Plastic Trace Element Serum Tube

## 1 Identification of substance:

- **Product Details:**

MSDS Number: VS60324-11

Issue Date: November 22, 2006

Supersedes: VS60324-10

ECO No.: ECO56287

- **Product Name:** BD Vacutainer® Brand PLUS Serum Tubes and Plastic Trace Element Serum Tube

- **Catalog Numbers:** 366668, 367812, 367813, 367814, 367815, 367819, 367820, 368175, 368050, 368043, 368044, 368045, 368380, 368492, 368660, 368815, 368975, 368976, Discontinued: 196430, 196431, 196434, 366406, 366407, 366534, 367816, 367910, 367911, 368085, 368172, 368173, 368176

- **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, or accident contact ChemTrec at (800) 424-9300.

## 2 Composition/Data on components:

- **Description:**

Chemical name: Silica

- **CAS No.:** 14808-60-7

- **Quantity of substances:** 0.1 - 3.0 mg

- **Exposure limits:** 0.1 mg/m<sup>3</sup> (ACGIH)

OSHA PEL: Crystalline Quartz (respirable): TWA 250 mppcf/(%SiO<sub>2</sub> + 5); TWA 10 mg/m<sup>3</sup>/(%SiO<sub>2</sub> + 2)

Quartz (total dust): TWA 30 mg/m<sup>3</sup>/(%SiO<sub>2</sub> + 2)

**3 Hazards identification:**

- **Hazard description:** Silica dust particles may cause slight eye irritation. Inhalation of large amounts of silica dust causes acute pneumoconiosis, characterized by coughing and throat irritation. Repeated inhalation of silica dust may cause silicosis, a delayed (chronic) lung disease characterized by a severe fibrous scarring of the lung. Silicosis may be progressive and result in heart failure. Silicosis increases the risk of tuberculosis, and may lead to chronic kidney disease and end-stage renal disease. Silica is classified as carcinogenic to humans. Avoid inhalation of dusts. Avoid generation and accumulation of dusts.
- **Acute Exposure Effects:** May cause slight eye irritation (mechanical irritation from particles). Acute pneumoconiosis from overwhelming inhalation exposure to silica dust has occurred. Coughing and irritation of throat are early symptoms.
- **Repeated Exposure Effects:** Repeated inhalation exposure to silica dust may cause silicosis, a delayed (chronic) lung disease characterized by a severe fibrous scarring of the lung. Silicosis may be progressive and result in heart failure. Silicosis increases the risk of tuberculosis, and may lead to chronic kidney disease and end-stage renal disease. Silica is classified as carcinogenic to humans.
- **Medical Conditions Which Might be Aggravated:** Pre-existing lung disease
- **NFPA ratings (scale 0-4):**



Health = 3  
Fire = 0  
Reactivity = 0  
Specific Hazard = 0

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



Health = 3  
Flammability = 0  
Reactivity = 0  
Special = 0

**4 First aid measures:**

**General information:** No special measures required

**After inhalation:** Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.

**After skin contact:** Immediately wash with water and soap, and rinse thoroughly

**After eye contact:** Rinse opened eye for 15 minutes under running water. Then consult a doctor.

**After Swallowing:** If large amounts are swallowed, get immediate medical attention.

**Information for doctor:** Show this label

**5 Fire fighting measures:**

- **Suitable extinguishing agents:** Use media suitable for surrounding fire.
- **Protective equipment:** Wear self-contained NIOSH approved breathing apparatus and protective clothing



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to prevent contact with skin and eyes.

## 6 Accidental release measures:

- **Person-related safety precautions:** Avoid overexposure. Wear protective equipment, especially NIOSH approved respirator. Exposure limits: 0.1 mg/m<sup>3</sup> (ACGIH)  
OSHA PEL: Crystalline Quartz (respirable): TWA 250 mppcf/(%SiO<sub>2</sub> + 5); TWA 10 mg/m<sup>3</sup>/(%SiO<sub>2</sub> + 2)  
Quartz (total dust): TWA 30 mg/m<sup>3</sup>/(%SiO<sub>2</sub> + 2)
- **Measures for environmental protection:** N/A
- **Measures for cleaning/collecting:** Do not dry-sweep. Whenever possible wet down to minimize airborne dust. Place in an appropriate disposal container.
- **Additional information:** N/A

## 7 Handling and storage:

- **Handling:**  
**Information for safe handling:** Do not breathe dust. Avoid dust generation or accumulation. Use adequate ventilation and dust collection. Monitor to keep airborne dust concentrations below the PEL, as silica dust may be in the air without a visible dust cloud.  
**Information about protection against explosions and fires:** N/A
- **Storage:**  
**Requirements to be met by storerooms and receptacles:** Use suitable containers. Keep tightly closed when not in use.  
**Information about storage in one common storage facility:** Avoid strong oxidizing agents.  
**Further information about storage conditions:** N/A

## 8 Exposure controls and personal protection:

- **Additional information about design of technical systems:** Use sufficient local exhaust to reduce the level of respirable silica dust to below the PEL.
- **Components with limit values that require monitoring at the workplace:**  
**Exposure limits:** 0.1 mg/m<sup>3</sup> (ACGIH)  
OSHA PEL: Crystalline Quartz (respirable): TWA 250 mppcf/(%SiO<sub>2</sub> + 5); TWA 10 mg/m<sup>3</sup>/(%SiO<sub>2</sub> + 2)  
Quartz (total dust): TWA 30 mg/m<sup>3</sup>/(%SiO<sub>2</sub> + 2)
- **Additional information:** The lists that were valid during the creation were used as basis.
- **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.  
**Breathing equipment:** NIOSH/MSHA Approved respirator  
**Protection of hands:** Use compatible chemical - resistant gloves  
**Eye protection:** Use chemical safety goggles  
**Body protection:** Wear appropriate protective clothing to prevent skin exposure.





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### 09 Physical and chemical properties:

- **General Information:**
  - Form:* Solid (Powder)
  - Color:* White
  - Odor:* Odorless
- **Change in condition:**
  - Melting point/Melting range:* Not available
  - Boiling point/Boiling range:* Not available
- *Flash point:* N/A
- *Flammability (solid, gaseous):* N/A
- *Danger of explosion:* N/A
- *Vapor pressure:* N/A
- *Density:* N/A
- *Solubility in/Miscibility w/H<sub>2</sub>O:* Not available
- *pH-value:* Not available
  - Organic solvents:* Not available
- *Solids content:* Not available

### 10 Stability and reactivity:

- *Thermal decomposition / conditions to be avoided:* None identified
- *Materials to be avoided:* Strong oxidizing agents
- *Dangerous reactions:* Stable
- *Dangerous products of decomposition:* Silica will dissolve in hydrofluoric acid and produce a corrosive gas (silicon tetrafluoride)

### 11 Toxicological information:

- **Acute toxicity:**
  - Eye:* May cause slight eye irritation
  - Skin:* None identified
  - Inhalation:* Acute pneumoconiosis from overwhelming exposure to silica dust has occurred. Coughing and irritation of throat are early symptoms.
  - Ingestion:* None identified
- **Primary irritant effect:**
  - On the skin:* Not established
  - On the eye:* Not established
- *Sensitization:* Not established
- **Additional toxicological information:**
  - Chronic:* Exposure to silica dust may cause silicosis, a delayed (chronic) lung disease characterized by a



**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

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severe fibrous scarring of the lung. Silicosis may be progressive and result in heart failure. Silicosis increases the risk of tuberculosis, and may lead to chronic kidney disease and end-stage renal disease. There is evidence that respirable crystalline silica or the disease silicosis is associated with the increased incidence of autoimmune disorders such as scleroderma, systemic lupus, erythematosus and rheumatoid arthritis

**Carcinogenicity:** Silica is classified by IARC and NTP as carcinogenic to humans.

### 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:** N/A
- **General notes:** N/A

### 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):** N/A
- **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
- **Section 313 (specific toxic chemical listings):** None
- **TSCA (Toxic Substances Control Act) Inventory:** Yes
- **California Proposition 65 – Chemicals Known to Cause Cancer:** Silica listed  
**California Proposition 65 – Chemicals Known to Cause Reproductive Toxicity:** Silica listed



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- **Carcinogenicity categories**
  - IARC (International Agency for Research on Cancer):** Group 1 (Human carcinogen)
  - NTP (National Toxicology Program):** respirable crystalline silica classified as a known human carcinogen
  - TLV (Threshold Limit Value established by ACGIH):** 0.1 mg/m<sup>3</sup>
  - MAK (German Maximum Workplace Concentration):** Not available
- **Product related hazard information:** Minimize dust generation or accumulation
- **National regulations:** N/A
- **Water hazard class:** N/A

**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