**Material Safety Data Sheet**

**SECTION 1 - IDENTIFICATION**

**NAME**
Becton Dickinson VACUTAINER Systems

**ADDRESS**
Stanley Street, E. Rutherford, NJ 07073

**TELEPHONE NUMBER**
(201) 490-3618

**FOR ADDITIONAL INFORMATION CONTACT:**
Fu-chung Lin, Ph.D.

**DATE PREPARED**
November 13, 1988

**SECTION 2 - HAZARDOUS INGREDIENTS**

<table>
<thead>
<tr>
<th>HAZARDOUS COMPONENT</th>
<th>CAS #</th>
<th>% (wt)</th>
<th>TLV</th>
<th>PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Fluoride</td>
<td>7851-49-4</td>
<td>44.4</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>Potassium Oxalate</td>
<td>585-53-8</td>
<td>58.8</td>
<td>No TLV</td>
<td>No PEL</td>
</tr>
</tbody>
</table>

* As Fluorides (F) 1.5 mg/m3 TWA ** As Fluoride (F) 2.5 mg/m3

**SECTION 3 - PHYSICAL DATA**

**BOILING POINT**
Not determined

**PERCENT VOLATILE BY VOLUME (%)**
Not determined

**VAPOR DENSITY (AIR = 1)**
Not determined

**EVAPORATION RATE (cm³/sec)**
Not determined

**SOLUBILITY IN WATER**
Soluble

**APPEARANCE AND ODOR**
White powder or balls or clear, lustrous crystals; No characteristic odor.

**SECTION 4 - FIRE AND EXPLOSION DATA**

**FLASH POINT**
Not determined

**FLAMMABLE LIMITS IN AIR (% by VOLUME)**
LOWER: Not determined  UPPER: Not determined

**AUTO IGNITION TEMPERATURE**
Not determined

**EXTinguISHING MEDIA**
Use extinguishing media appropriate for surrounding fire.

**NOMINAL FIRE AND EXPLOSION HAZARDS**
May emit highly toxic fumes

**SPECIAL FIRE FIGHTING PROCEDURES**
None
HEALTH INFORMATION

PRIMARY ROUTES OF EXPOSURE
Eyes, skin, ingestion, inhalation

SIGNS AND SYMPTOMS OF EXPOSURE
INHALATION: Irritation or mucous membranes
INGESTION: Irritation and burning sensation of lips, mouth, and throat, pain in swallowing, intense thirst
SKIN: Burning sensation and inflammation, blisters, profound damage to tissue
EYES: Burning sensation, watering of eyes, conjunctivitis, ulceration, possible damage to cornea and loss of vision

(1) ACUTE OVEREXPOSURE -
Fixation of calcium by fluorine, nausea, vomiting, diarrhea, abdominal burning and cramp-like pains, can cause severe bone changes, weight loss, dental defects, may cause renal tubule obstruction and kidney disturbance

(2) CHRONIC OVEREXPOSURE -

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
May impair growth in young workers, diseases of bones or ligaments, or diseases of kidney or lung, pre-existing skin disease

CHEMICAL/COMPONENT LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN

NTP IARC OSHA
None □ Yes □ No □ Yes □ No □ Yes □ No

OTHER EXPOSURE LIMITS None determined

EMERGENCY & FIRST AID PROCEDURES
Remove victim from contaminated area and remove contaminated clothing, first aid should not be contaminated, wash skin or eyes with water for 15 minutes or longer, apply calcium gluconate gel 10% on the dried affected skin, notify physician, if victim coughs a great deal make him inhale the vapor of ethyl alcohol or vapor of ether then give oxygen, blow nose if irritated, rinse mouth if material entered, do not let victim vomit, if ingested give large doses of effervescent calcium gluconate tablets (6) diluted in copious amounts of water or milk, if great pain persists after washing eyes put several drops of sterile calcium gluconate 10% solution (Sandoz or equiv.), if eye pain persists repeat eye washing.

SECTION 6 - REACTIVITY DATA

STABILITY Unstable □ Stable □

INCOMPATIBILITY (MATERIALS TO AVOID)
Acid or acid vapors, furfuryl alcohol, Ag, NaClO3, NaClO2

HAZARDOUS DECOMPOSITION PRODUCTS
Hydrogen fluoride, Fluorine, CO2

HAZARDOUS POLYMERIZATION

May Occur □ Will Not Occur □

CONDITIONS TO AVOID
Not determined

SECTION 7 - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS LEAKED OR SPILLED
Carefully sweep up material if dry, wear protective equipment to prevent inhaling, skin or eye contact; if liquid carefully dilute with water to adsorb or flush to drain with copious amounts of water.

WASTE DISPOSAL METHOD
Dispose of waste in accordance with Federal, State and local codes, normally small volumes can be disposed into a sewer system.

SECTION 8 - PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION
Normally not required, use NIOSH approved dust respirator for dry spills.

VENTILATION
General room ventilation

PROTECTIVE GLOVES
Not required, should use if contact with skin exists

EYE PROTECTION
Not normally required, should be used when potential of eye contact exists

OTHER PROTECTIVE CLOTHING OR EQUIPMENT
Emergency eye bath is recommended where there is possibility of eye contact

SECTION 9 - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
Store and handle according to packaged instructions.

OTHER PRECAUTIONS
Be prepared with proper emergency medical supplies in case of an accident

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