

**1 Identification of substance:**

- **Product name:** Gram Crystal Violet  
(Gram Stain Set)
- **Catalog number:** 212524
- **Manufacturer/Supplier:**  
BD Diagnostic Systems  
7 Loveton Circle  
Sparks, MD 21152  
Tel: (410) 771-0100 or (800) 638-8663
- **Information department:** Technical Services
- **Emergency information:**  
In case of a chemical emergency, spill, fire, exposure, or accident contact BD Diagnostic Systems at (410)771-0100 or (800)638-8663, or ChemTrec at (800)424-9300.

**2 Composition/Data on components:**

- **Chemical characterization:**
- **Identification number(s):**
- **EINECS Number:** 2089536
- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

67-63-0	isopropanol	5.0%
64-17-5	ethanol	2.4%
548-62-9	C.I. Basic Violet 3	0.4%
67-56-1	methanol	2.4%

**3 Hazards identification**

· **Hazard description:**



Xn Harmful

· **Information pertaining to particular dangers for man and environment**

R 40 Limited evidence of a carcinogenic effect.

R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

· **Classification system**

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

· **NFPA ratings (scale 0-4)**



Health = 2

Fire = 0

Reactivity = 0

**Product name: Gram Crystal Violet**  
**(Gram Stain Set)**

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#### 4 First aid measures

· **General information**

Symptoms of poisoning may even occur after several hours; therefore provide medical observation for at least 48 hours after the accident.

- **After inhalation** Seek medical treatment in case of complaints.
- **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** Immediately call a doctor.
- **Information for doctor** Show this product label or this MSDS.
- **The following symptoms may occur:**

Headache  
Dizziness

#### 5 Fire fighting measures

· **Suitable extinguishing agents**

CO<sub>2</sub>, ABC multipurpose dry chemical or water spray. Fight larger fires with water spray or alcohol resistant foam.

- **Protective equipment:** No special measures required.

#### 6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:** No special measures required.

#### 7 Handling and storage

· **Handling**

- **Information for safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.

· **Storage**

- **Requirements to be met by storerooms and receptacles:** 15 - 30 C
- **Information about storage in one common storage facility:**  
Store away from oxidizing agents.  
Do not store together with acids.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed containers.

#### 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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**Product name: Gram Crystal Violet  
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**· Components with limit values that require monitoring at the workplace:**

**67-63-0 isopropanol**

PEL	980 mg/m <sup>3</sup> , 400 ppm
REL	Short-term value: 1225 mg/m <sup>3</sup> , 500 ppm Long-term value: 980 mg/m <sup>3</sup> , 400 ppm
TLV	Short-term value: 984 mg/m <sup>3</sup> , 400 ppm Long-term value: 492 mg/m <sup>3</sup> , 200 ppm

**64-17-5 ethanol**

PEL	1900 mg/m <sup>3</sup> , 1000 ppm
REL	1900 mg/m <sup>3</sup> , 1000 ppm
TLV	1880 mg/m <sup>3</sup> , 1000 ppm

**67-56-1 methanol**

PEL	260 mg/m <sup>3</sup> , 200 ppm
REL	Short-term value: 325 mg/m <sup>3</sup> , 250 ppm Long-term value: 260 mg/m <sup>3</sup> , 200 ppm Skin
TLV	Short-term value: 328 mg/m <sup>3</sup> , 250 ppm Long-term value: 262 mg/m <sup>3</sup> , 200 ppm Skin; BEI

**· Additional information:** The lists that were valid during the creation were used as basis.

**· Personal Protective Equipment**

**· General protective and hygienic measures**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.

**· Breathing equipment:**

In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.

**· Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

**· Eye protection:** Safety glasses

**· Body protection:** Protective work clothing (lab coat).

**9 Physical and chemical properties:**

**· General Information**

<b>Form:</b>	Liquid
<b>Color:</b>	Purple
<b>Odor:</b>	Characteristic

**· Change in condition**

**Melting point/Melting range:** Not determined

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**(Gram Stain Set)**

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<b>Boiling point/Boiling range:</b>	Not determined
<b>Flash point:</b>	Not applicable
<b>Auto igniting:</b>	Product is not self igniting.
<b>Danger of explosion:</b>	Product does not present an explosion hazard.
<b>Density:</b>	Not determined
<b>Solubility in / Miscibility with Water:</b>	Slightly soluble
<b>Solvent content:</b>	
<b>Organic solvents:</b>	9.8 %

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Materials to be avoided:** Incompatible materials: strong acids and oxidizers.
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:**  
Nitrogen oxides (NO<sub>x</sub>)  
Carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>)  
Ammonia (NH<sub>4</sub>)

### 11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

<b>64-17-5 ethanol</b>		
Oral	LD50	3450 mg/kg (MOU)
		7060 mg/kg (rat)
<b>548-62-9 C.I. Basic Violet 3</b>		
Oral	LD50	96 mg/kg (mou)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Subacute to chronic toxicity:** Target organs: thyroid, kidney, ureter or bladder tumors.
- **Additional toxicological information:**

Irritant

The product shows the following dangers according to internally approved calculation methods for preparations:

**Product name: Gram Crystal Violet**  
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### 12 Ecological information:

- **Ecotoxicological effects:**
- **Acquatic toxicity:**  
 This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are greater than 100 mg/l
- **Other information:**  
 The ecological effects have not been thoroughly investigated, but currently none have been identified.
- **General notes:** Water hazard class 2 (Self-assessment); hazardous for water.

### 13 Disposal considerations

- **Product:**
- **Recommendation**  
 Must not be disposed of with solid waste.  
 Dispose of material in accordance with federal (40 CFR 261.3), state and local requirements.  
 This product is not considered a RCRA hazardous waste.
- **Uncleaned packagings:**
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

### 15 Regulations

- **SARA Section 355 (extremely hazardous substances)**  
 None of the ingredients is listed.
- **SARA Section 313 (specific toxic chemical listings)**

67-63-0	isopropanol
64-17-5	ethanol
67-56-1	methanol
- **TSCA (Toxic Substances Control Act)**

67-63-0	isopropanol
64-17-5	ethanol

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

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67-56-1	methanol
548-62-9	C.I. Basic Violet 3

**· California Proposition 65 - Chemicals known to cause cancer**

None of the ingredients is listed.

**· California Proposition 65 - Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

**· California Proposition 65 - Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

**· California Proposition 65 - Chemicals known to cause developmental toxicity:**

64-17-5	ethanol
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**· Carcinogenicity categories**

**· IARC (International Agency for Research on Cancer)**

67-63-0	isopropanol	3
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**· NTP (National Toxicology Program)**

None of the ingredients is listed.

**· TLV (Threshold Limit Value established by ACGIH)**

64-17-5	ethanol	A4
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**· Product related hazard information:**

The product has been classified and marked in accordance with regulations on hazardous materials.

**· Hazard symbols:**

Xn Harmful

**· Hazard-determining components of labeling:**

ethanol  
isopropanol  
C.I. Basic Violet 3  
methanol

**· Risk phrases:**

40 Limited evidence of a carcinogenic effect.  
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**· Safety phrases:**

7 Keep container tightly closed.  
16 Keep away from sources of ignition - No smoking.  
25 Avoid contact with eyes.  
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
36/37 Wear suitable protective clothing and gloves.  
61 Avoid release to the environment. Refer to special instructions/Safety data sheets

**· National regulations**

**· Technical instructions (air):**

Class	Share in %
III	9.8

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· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

**16 Other information:**

*To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company 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:** Safety and Environment Department
- **Contact:** Technical Service Representative

USA

**1 Identification of substance:**

- **Product name:** Gram Decolorizer  
(Gram Stain Set)
- **Catalog number:** 212524
- **Manufacturer/Supplier:**  
BD Diagnostic Systems  
7 Loveton Circle  
Sparks, MD 21152  
Tel: (410) 771-0100 or (800) 638-8663
- **Information department:** Technical Services
- **Emergency information:**  
In case of a chemical emergency, spill, fire, exposure, or accident contact BD Diagnostic Systems at (410)771-0100 or (800)638-8663, or ChemTrec at (800)424-9300.

**2 Composition/Data on components:**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· <b>Dangerous components:</b>		
67-63-0	isopropanol	75.0%
67-64-1	acetone	25.0%

**3 Hazards identification**

- **Hazard description:**



Xi Irritant  
F Highly flammable

- **Information pertaining to particular dangers for man and environment**  
R 11 Highly flammable.  
R 36 Irritating to eyes.
- **Classification system**  
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0-4)**



Health = 2  
Fire = 3  
Reactivity = 0

**4 First aid measures**

- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **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.

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- **After swallowing** Call a doctor immediately.
- **Information for doctor** Show this product label or this MSDS.
- **The following symptoms may occur:**
  - Headache
  - Dizziness

### 5 Fire fighting measures

- **Suitable extinguishing agents**  
CO<sub>2</sub>, ABC multipurpose dry chemical or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
- **Additional information:**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Handling**
- **Information for safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** 15 - 30 C
- **Information about storage in one common storage facility:**  
Do not store together with oxidizing and acidic materials.  
Do not store with chloroform.  
Do not store with halogens.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed containers.

### 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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USA

**Product name: Gram Decolorizer  
(Gram Stain Set)**

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**· Components with limit values that require monitoring at the workplace:**

**67-63-0 isopropanol**

PEL	980 mg/m <sup>3</sup> , 400 ppm
REL	Short-term value: 1225 mg/m <sup>3</sup> , 500 ppm Long-term value: 980 mg/m <sup>3</sup> , 400 ppm
TLV	Short-term value: 984 mg/m <sup>3</sup> , 400 ppm Long-term value: 492 mg/m <sup>3</sup> , 200 ppm

**67-64-1 acetone**

PEL	2400 mg/m <sup>3</sup> , 1000 ppm
REL	590 mg/m <sup>3</sup> , 250 ppm
TLV	Short-term value: 1782 mg/m <sup>3</sup> , 750 ppm Long-term value: 1188 mg/m <sup>3</sup> , 500 ppm
BEI	

**· Additional information:** The lists that were valid during the creation were used as basis.

**· Personal Protective Equipment**

**· General protective and hygienic measures**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.

**· Breathing equipment:**

- In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.
- Use suitable respiratory protective device in case of insufficient ventilation.

**· Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

**· Eye protection:** Safety glasses

**· Body protection:** Protective work clothing (lab coat).

**9 Physical and chemical properties:**

**· General Information**

<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
	Clear
<b>Odor:</b>	Alcohol-like

**· Change in condition**

<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	56.1 - 82.0°C (133 - 180°F)

**· Flash point:** -6.7°C (20°F)

**· Ignition temperature:** 425.0°C (797°F)

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**Product name: Gram Decolorizer**  
(Gram Stain Set)

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· <b>Auto igniting:</b>	Product is not self igniting.
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· <b>Explosion limits:</b>	
<b>Lower:</b>	3.5 Vol %
<b>Upper:</b>	18.0 Vol %
· <b>Vapor pressure at 20°C (68°F):</b>	186.0 hPa (140 mm Hg)
· <b>Density at 20°C (68°F):</b>	2.0 - 2.1 g/cm <sup>3</sup>
· <b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Soluble
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	100.0 %

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Materials to be avoided:** Incompatible materials: strong acids and oxidizers.
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** Carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>)

### 11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Subacute to chronic toxicity:** Target organs: kidney, spleen, and liver.
- **Additional toxicological information:**  
Irritant  
The product shows the following dangers according to internally approved calculation methods for preparations:

### 12 Ecological information:

- **Ecotoxicological effects:**
- **Acquatic toxicity:**  
This material is not expected to be toxic to aquatic life. The LC<sub>50</sub>/96-hour values for fish are greater than 100 mg/l
- **Other information:**  
The ecological effects have not been thoroughly investigated, but currently none have been identified.

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**Product name: Gram Decolorizer**  
**(Gram Stain Set)**

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· **General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water.**13 Disposal considerations**· **Product:**· **Recommendation**

Must not be disposed of with solid waste.

Dispose of material in accordance with federal (40 CFR 261.3), state and local requirements.

RCRA hazardous waste - RCRA # D001, F003 (ignitable, toxic).

· **Uncleaned packagings:**· **Recommended cleansing agent:** Water, if necessary with cleansing agents.**14 Transport information**· **DOT regulations:**· **Hazard class:** 9· **Identification number:** UN3316· **Packing group:** II· **Proper shipping name:** CHEMICAL KITS· **Label** 9· **Land transport ADR/RID (cross-border)**· **ADR/RID class:** 9 (M11) Miscellaneous dangerous substances and articles· **UN-Number:** 3316· **Packaging group:** II· **Description of goods:** 3316 CHEMICAL KIT· **Maritime transport IMDG:**· **IMDG Class:** 9· **UN Number:** 3316· **Label** 9· **Packaging group:** II· **EMS Number:** F-A,S-P· **Marine pollutant:** No

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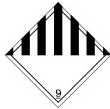
Reviewed on 09/23/2003

**Product name: Gram Decolorizer  
(Gram Stain Set)**

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· **Proper shipping name:** CHEMICAL KITS

· **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 9
- **UN/ID Number:** 3316
- **Label** 9
- **Packaging group:** II
- **Proper shipping name:** CHEMICAL KITS

### 15 Regulations

· **SARA Section 355 (extremely hazardous substances)**

None of the ingredients is listed.

· **SARA Section 313 (specific toxic chemical listings)**

67-63-0 | isopropanol

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

· **California Proposition 65 - Chemicals known to cause cancer**

None of the ingredients is listed.

· **California Proposition 65 - Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **California Proposition 65 - Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **California Proposition 65 - Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenicity categories**

· **IARC (International Agency for Research on Cancer)**

67-63-0 | isopropanol

3

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

67-64-1 | acetone

A4

· **Product related hazard information:**

The product has been classified and marked in accordance with regulations on hazardous materials.

· **Hazard symbols:**

Xi Irritant

F Highly flammable

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

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Reviewed on 09/23/2003

**Product name: Gram Decolorizer**  
**(Gram Stain Set)**

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**· Hazard-determining components of labeling:**isopropanol  
acetone**· Risk phrases:**11 Highly flammable.  
36 Irritating to eyes.**· Safety phrases:**7/9 Keep container tightly closed and in a well-ventilated place.  
16 Keep away from sources of ignition - No smoking.  
24/25 Avoid contact with skin and eyes.  
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
60 This material and its container must be disposed of as hazardous waste.**· National regulations****· Technical instructions (air):**

Class	Share in %
III	100.0

**16 Other information:**

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company 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:** Safety and Environment Department**· Contact:** Technical Service Representative

USA

**1 Identification of substance:**

- **Product name:** Gram Iodine  
(Gram Stain Set)
- **Catalog number:** 212524
- **Manufacturer/Supplier:**  
BD Diagnostic Systems  
7 Loveton Circle  
Sparks, MD 21152  
Tel: (410) 771-0100 or (800) 638-8663
- **Information department:** Technical Services
- **Emergency information:**  
In case of a chemical emergency, spill, fire, exposure, or accident contact BD Diagnostic Systems at (410)771-0100 or (800)638-8663, or ChemTrec at (800)424-9300.

**2 Composition/Data on components:**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

**Dangerous components:**

7681-11-0	potassium iodide	53.0%
7553-56-2	iodine	27.0%

**3 Hazards identification****Hazard description:**

Xn Harmful

- **Information pertaining to particular dangers for man and environment**  
R 20/21 Harmful by inhalation and in contact with skin.
- **Classification system**  
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0-4)**

Health = 2  
Fire = 0  
Reactivity = 0**4 First aid measures**

- **General information**  
Symptoms of poisoning may even occur after several hours; therefore provide medical observation for at least 48 hours after the accident.
- **After inhalation** Seek medical treatment in case of complaints.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.

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**Product name: Gram Iodine**  
(Gram Stain Set)

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- **After eye contact** Rinse opened eye for 15 minutes under running water. Then consult a doctor.
- **After swallowing** Immediately call a doctor.
- **Information for doctor** Show this product label or this MSDS.

### 5 Fire fighting measures

- **Suitable extinguishing agents**  
CO<sub>2</sub>, ABC multipurpose dry chemical or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards caused by the material, its products of combustion or resulting gases:**  
In certain fire conditions, traces of other toxic gases cannot be excluded.
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:** No special measures required.
- **Additional information:**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Handling**
- **Information for safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** 15 - 30 C
- **Information about storage in one common storage facility:**  
Store away from oxidizing agents.  
Store away from reducing agents.  
Do not store with ammonia and salts, aluminum, bromine trifluorides and trichlorides, chemically active metals, and carbides.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed containers.

### 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with limit values that require monitoring at the workplace:**

7553-56-2 iodine

PEL Short-term value: C 1 mg/m<sup>3</sup>, C 0.1 ppmREL Short-term value: C 1 mg/m<sup>3</sup>, C 0.1 ppmTLV Short-term value: C 1 mg/m<sup>3</sup>, C 0.1 ppm

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**Product name: Gram Iodine**  
(Gram Stain Set)

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- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal Protective Equipment**
- **General protective and hygienic measures**  
The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:**  
In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.
- **Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing (lab coat).

### 9 Physical and chemical properties:

· **General Information**

**Form:** Liquid  
**Color:** Dark brown  
**Odor:** Characteristic

- **Change in condition:** Undetermined
- **Melting point/Melting range:** Not determined
- **Boiling point/Boiling range:** Not determined

· **Flash point:** Not applicable

· **Auto igniting:** Product is not self igniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density:** Not determined

· **Solubility in / Miscibility with**  
**Water:** Soluble

· **pH-value:** 2.275 +/- 0.2

· **Solvent content:**  
**Organic solvents:** 0.0 %

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:**  
Iodine compounds  
Sulfur oxides (SOx)  
Carbon monoxide (CO) and carbon dioxide (CO2)

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Printing date 01/11/2006

Reviewed on 09/23/2003

**Product name: Gram Iodine**  
**(Gram Stain Set)**Nitrogen oxides (NO<sub>x</sub>)

(Contd. of page 3)

**11 Toxicological information**

- **Acute toxicity:**
- **Primary irritant effect:**
  - **on the skin:** Irritant to skin and mucous membranes.
  - **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Subacute to chronic toxicity:**  
Target organs: lung, thyroid, bladder damage and central nervous system depression.
- **Additional toxicological information:**  
Harmful  
The product shows the following dangers according to internally approved calculation methods for preparations:

**12 Ecological information:**

- **Ecotoxicological effects:**
- **Other information:**  
The ecological effects have not been thoroughly investigated, but currently none have been identified.
- **General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

**13 Disposal considerations**

- **Product:**
- **Recommendation**  
Must not be disposed of with solid waste.  
Dispose of material in accordance with federal (40 CFR 261.3), state and local requirements.  
This product is not considered a RCRA hazardous waste.
- **Uncleaned packagings:**
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No

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USA

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Reviewed on 09/23/2003

**Product name: Gram Iodine**  
**(Gram Stain Set)**

(Contd. of page 4)

- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

### 15 Regulations

- **SARA Section 355 (extremely hazardous substances)**

None of the ingredients is listed.

- **SARA Section 313 (specific toxic chemical listings)**

None of the ingredients is listed.

- **TSCA (Toxic Substances Control Act)**

7681-11-0 | potassium iodide

7553-56-2 | iodine

- **California Proposition 65 - Chemicals known to cause cancer**

None of the ingredients is listed.

- **California Proposition 65 - Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **California Proposition 65 - Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **California Proposition 65 - Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

- **Carcinogenicity categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

- **Product related hazard information:**

Observe the general safety regulations when handling chemicals

The product has been classified and marked in accordance with regulations on hazardous materials.

- **Hazard symbols:**

Xn Harmful

- **Hazard-determining components of labeling:**

iodine

potassium iodide

- **Risk phrases:**

20/21 Harmful by inhalation and in contact with skin.

- **Safety phrases:**

9 Keep container in a well-ventilated place.

23 Do not breathe fumes / aerosol

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

Printing date 01/11/2006

Reviewed on 09/23/2003

**Product name: Gram Iodine**  
**(Gram Stain Set)**

(Contd. of page 5)

36/37 Wear suitable protective clothing and gloves.

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

**16 Other information:**

*To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company 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:** Safety and Environment Department
- **Contact:** Technical Service Representative

USA

### 1 Identification of substance:

- **Product name:** Gram Safranin  
(Gram Stain Set)
- **Catalog number:** 212524
- **Manufacturer/Supplier:**  
BD Diagnostic Systems  
7 Loveton Circle  
Sparks, MD 21152  
Tel: (410) 771-0100 or (800) 638-8663
- **Information department:** Technical Services
- **Emergency information:**  
In case of a chemical emergency, spill, fire, exposure, or accident contact BD Diagnostic Systems at (410)771-0100 or (800)638-8663, or ChemTrec at (800)424-9300.

### 2 Composition/Data on components:

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· <b>Dangerous components:</b>		
64-17-5	ethanol	19.0%
67-56-1	methanol	1.0%

### 3 Hazards identification

- **Hazard description:**



Xn Harmful

- **Information pertaining to particular dangers for man and environment**  
R 10 Flammable.  
R 40 Limited evidence of a carcinogenic effect.
- **Classification system**  
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0-4)**



Health = 2  
Fire = 2  
Reactivity = 0

### 4 First aid measures

- **General information**  
Symptoms of poisoning may even occur after several hours; therefore provide medical observation for at least 48 hours after the accident.
- **After inhalation** Seek medical treatment in case of complaints.

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Reviewed on 09/23/2003

**Product name: Gram Safranin**  
(Gram Stain Set)

(Contd. of page 1)

- **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** Immediately call a doctor.
- **Information for doctor** Show this product label or this MSDS.
- **The following symptoms may occur:**
  - Dizziness
  - Headache

### 5 Fire fighting measures

- **Suitable extinguishing agents**  
CO<sub>2</sub>, ABC multipurpose dry chemical or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:** No special measures required.
- **Additional information:**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

### 7 Handling and storage

- **Handling**
  - **Information for safe handling:** Ensure good ventilation/exhaustion at the workplace.
  - **Information about protection against explosions and fires:**
    - Keep ignition sources away - Do not smoke.
    - Protect against electrostatic charges.
- **Storage**
  - **Requirements to be met by storerooms and receptacles:** 15 - 30 C
  - **Information about storage in one common storage facility:**
    - Do not store together with oxidizing and acidic materials.
  - **Further information about storage conditions:** Store in cool, dry conditions in well sealed containers.
  - **Storage class** II A

### 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

(Contd. on page 3)

**Product name: Gram Safranin**  
(Gram Stain Set)

(Contd. of page 2)

**· Components with limit values that require monitoring at the workplace:**

**64-17-5 ethanol**

PEL 1900 mg/m<sup>3</sup>, 1000 ppm  
REL 1900 mg/m<sup>3</sup>, 1000 ppm  
TLV 1880 mg/m<sup>3</sup>, 1000 ppm

**67-56-1 methanol**

PEL 260 mg/m<sup>3</sup>, 200 ppm  
REL Short-term value: 325 mg/m<sup>3</sup>, 250 ppm  
Long-term value: 260 mg/m<sup>3</sup>, 200 ppm  
Skin  
TLV Short-term value: 328 mg/m<sup>3</sup>, 250 ppm  
Long-term value: 262 mg/m<sup>3</sup>, 200 ppm  
Skin; BEI

**· Additional information:** The lists that were valid during the creation were used as basis.

**· Personal Protective Equipment**

**· General protective and hygienic measures** Wash hands before breaks and at the end of work.

**· Breathing equipment:**

In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.

**· Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

**· Eye protection:** Safety glasses

**· Body protection:** Protective work clothing (lab coat).

**9 Physical and chemical properties:**

**· General Information**

**Form:** Liquid  
**Color:** Red  
**Odor:** Characteristic

**· Change in condition**

**Melting point/Melting range:** Not determined  
**Boiling point/Boiling range:** 79°C (174°F)

**· Flash point:** 38.9°C (102°F)

**· Ignition temperature:** 425.0°C (797°F)

**· Auto igniting:** Product is not self igniting.

**· Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

**· Explosion limits:**

**Lower:** 6.5 Vol %

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Reviewed on 09/23/2003

**Product name: Gram Safranin**  
(Gram Stain Set)

(Contd. of page 3)

<b>Upper:</b>	22 Vol %
· <b>Vapor pressure at 25°C (77°F):</b>	59.0 hPa (44 mm Hg)
· <b>Density:</b>	Not determined
· <b>Solubility in / Miscibility with Water:</b>	Soluble
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	20.0 %

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Materials to be avoided:** Incompatible materials: strong acids and oxidizers.
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:**  
Carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>)  
Nitrogen oxides (NO<sub>x</sub>)  
Hydrogen chloride (HCl)

### 11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**64-17-5 ethanol**

Oral	LD50	3450 mg/kg (MOU)
		7060 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Subacute to chronic toxicity:** Target organs: eyes, kidneys, tumor formation, reproductive disorders
- **Additional toxicological information:**  
Harmful  
The product shows the following dangers according to internally approved calculation methods for preparations:

### 12 Ecological information:

- **Ecotoxicological effects:**
- **Acquatic toxicity:**  
This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are greater than 100 mg/l

(Contd. on page 5)

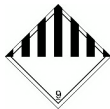


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**Product name: Gram Safranin**  
(Gram Stain Set)

(Contd. of page 4)

**· Other information:***The ecological effects have not been thoroughly investigated, but currently none have been identified.***· General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water.**13 Disposal considerations****· Product:****· Recommendation***Must not be disposed of with solid waste.**Dispose of material in accordance with federal (40 CFR 261.3), state and local requirements.**RCRA hazardous waste - RCRA # D001 (ignitable).***· Uncleaned packagings:****· Recommended cleansing agent:** Water, if necessary with cleansing agents.**14 Transport information****· DOT regulations:****· Hazard class:** 9**· Identification number:** UN3316**· Packing group:** III**· Proper shipping name:** CHEMICAL KITS**· Label:** 9**· Land transport ADR/RID (cross-border)****· ADR/RID class:** 9 (M11) Miscellaneous dangerous substances and articles**· UN-Number:** 3316**· Packaging group:** III**· Description of goods:** CHEMICAL KITS**· Maritime transport IMDG:****· IMDG Class:** 9**· UN Number:** 3316**· Label:** 9**· Packaging group:** III

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Reviewed on 09/23/2003

**Product name: Gram Safranin**  
**(Gram Stain Set)**

(Contd. of page 5)

- **EMS Number:** F-A,S-P
- **Marine pollutant:** No
- **Proper shipping name:** CHEMICAL KITS

· **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 9
- **UN/ID Number:** 3316
- **Label:** 9
- **Packaging group:** III
- **Proper shipping name:** CHEMICAL KITS

### 15 Regulations

· **SARA Section 355 (extremely hazardous substances)**

None of the ingredients is listed.

· **SARA Section 313 (specific toxic chemical listings)**

64-17-5 ethanol

67-56-1 methanol

· **TSCA (Toxic Substances Control Act)**

64-17-5 ethanol

67-56-1 methanol

· **California Proposition 65 - Chemicals known to cause cancer**

None of the ingredients is listed.

· **California Proposition 65 - Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **California Proposition 65 - Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **California Proposition 65 - Chemicals known to cause developmental toxicity:**

64-17-5 ethanol

· **Carcinogenicity categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

64-17-5 ethanol

A4

(Contd. on page 7)

**Product name: Gram Safranin**  
**(Gram Stain Set)**

(Contd. of page 6)

· **Product related hazard information:**

*The product has been classified and marked in accordance with regulations on hazardous materials.*

· **Hazard symbols:**

*Xn Harmful*

· **Hazard-determining components of labeling:**

*ethanol*

*methanol*

· **Risk phrases:**

*10 Flammable.*

*40 Limited evidence of a carcinogenic effect.*

· **Safety phrases:**

*7 Keep container tightly closed.*

*16 Keep away from sources of ignition - No smoking.*

*36/37 Wear suitable protective clothing and gloves.*

*60 This material and its container must be disposed of as hazardous waste.*

· **National regulations**

· **Technical instructions (air):**

Class	Share in %
III	20.0

**16 Other information:**

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· **Department issuing MSDS:** Safety and Environment Department

· **Contact:** Technical Service Representative