

## SAFETY DATA SHEET

Version 5.1  
Revision Date 07/03/2014  
Print Date 12/04/2014

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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Crystal Violet solution  
Product Number : HT90132  
Brand : Sigma

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Manufacture of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
Telephone : +1 800-325-5832  
Fax : +1 800-325-5052

**1.4 Emergency telephone number**

Emergency Phone # : (314) 776-6555

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**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 3), H226  
Eye irritation (Category 2A), H319  
Carcinogenicity (Category 2), H351  
Specific target organ toxicity - single exposure (Category 1), H370  
Acute aquatic toxicity (Category 2), H401  
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

Hazard statement(s)

H226 Flammable liquid and vapour.  
H319 Causes serious eye irritation.  
H351 Suspected of causing cancer.  
H370 Causes damage to organs.  
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

|                    |  |
|--------------------|--|
| P233               | Keep container tightly closed.   |
| P240               | Ground/bond container and receiving equipment.   |
| P241               | Use explosion-proof electrical/ ventilating/ lighting/ equipment.  |
| P242               | Use only non-sparking tools.   |
| P243               | Take precautionary measures against static discharge.  |
| P260               | Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  |
| P264               | Wash skin thoroughly after handling.   |
| P270               | Do not eat, drink or smoke when using this product.  |
| P273               | Avoid release to the environment.  |
| P280               | Wear protective gloves/ protective clothing/ eye protection/ face protection.  |
| P303 + P361 + P353 | IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.                     |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P307 + P311        | IF exposed: Call a POISON CENTER or doctor/ physician.   |
| P321               | Specific treatment (see supplemental first aid instructions on this label).  |
| P337 + P313        | If eye irritation persists: Get medical advice/ attention.   |
| P370 + P378        | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  |
| P391               | Collect spillage.  |
| P403 + P235        | Store in a well-ventilated place. Keep cool.   |
| P405               | Store locked up.   |
| P501               | Dispose of contents/ container to an approved waste disposal plant.  |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

Molecular Weight : 407.98 g/mol

#### Hazardous components

| Component  | Classification   | Concentration |
|--|--|---------------|
| <b>Ethanol</b>   |  |               |
| CAS-No. 64-17-5<br>EC-No. 200-578-6<br>Index-No. 603-002-00-5  | Flam. Liq. 2; H225   | 10 - 20 %     |
| <b>C.I. Basic violet 3</b> Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH) |  |               |
| CAS-No. 548-62-9<br>EC-No. 208-953-6<br>Index-No. 612-204-00-2   | Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Carc. 2; Aquatic Acute 1; Aquatic Chronic 1; H302, H315, H318, H351, H410 | 1 - 5 %       |
| <b>Methanol</b>  |  |               |
| CAS-No. 67-56-1<br>EC-No. 200-659-6<br>Index-No. 603-001-00-X<br>Registration number 01-2119433307-44-XXXX   | Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301 + H311 + H331, H370  | 1 - 5 %       |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

no data available

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**5. FIREFIGHTING MEASURES****5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides, nitrogen oxides (NO<sub>x</sub>), Hydrogen chloride gas

**5.3 Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**5.4 Further information**

Use water spray to cool unopened containers.

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**6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

**6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**6.3 Methods and materials for containment and cleaning up**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

**6.4 Reference to other sections**

For disposal see section 13.

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**7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Light sensitive.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

| Component | CAS-No. | Value   | Control parameters                   | Basis  |
|-----------|---------|---|--------------------------------------|--|
| Ethanol   | 64-17-5 | TWA   | 1,000 ppm                            | USA. ACGIH Threshold Limit Values (TLV)  |
|           | Remarks | Upper Respiratory Tract irritation<br>Confirmed animal carcinogen with unknown relevance to humans  |                                      |  |
|           |         | TWA   | 1,000 ppm<br>1,900 mg/m <sup>3</sup> | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
|           |         | The value in mg/m <sup>3</sup> is approximate.  |                                      |  |
|           |         | TWA   | 1,000 ppm<br>1,900 mg/m <sup>3</sup> | USA. NIOSH Recommended Exposure Limits   |
| Methanol  | 67-56-1 | TWA   | 200 ppm                              | USA. ACGIH Threshold Limit Values (TLV)  |
|           |         | Headache<br>Eye damage<br>Substances for which there is a Biological Exposure Index or Indices (see BEI® section)<br>Danger of cutaneous absorption |                                      |  |
|           |         | STEL  | 250 ppm                              | USA. ACGIH Threshold Limit Values (TLV)  |
|           |         | Headache<br>Eye damage<br>Substances for which there is a Biological Exposure Index or Indices (see BEI® section)<br>Danger of cutaneous absorption |                                      |  |
|           |         | TWA   | 200 ppm<br>260 mg/m <sup>3</sup>     | USA. NIOSH Recommended Exposure Limits   |
|           |         | Potential for dermal absorption   |                                      |  |
|           |         | ST  | 250 ppm<br>325 mg/m <sup>3</sup>     | USA. NIOSH Recommended Exposure Limits   |
|           |         | Potential for dermal absorption   |                                      |  |
|           |         | TWA   | 200 ppm<br>260 mg/m <sup>3</sup>     | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
|           |         | The value in mg/m <sup>3</sup> is approximate.  |                                      |  |
|           |         | STEL  | 250 ppm<br>325 mg/m <sup>3</sup>     | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000                    |
|           |         | Skin notation   |                                      |  |
|           |         | TWA   | 200 ppm<br>260 mg/m <sup>3</sup>     | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000                    |
|           |         | Skin notation   |                                      |  |

#### Biological occupational exposure limits

| Component | CAS-No. | Parameters   | Value   | Biological specimen | Basis                                     |
|-----------|---------|--|---------|---------------------|---|
| Methanol  | 67-56-1 | Methanol   | 15 mg/l | Urine               | ACGIH - Biological Exposure Indices (BEI) |
|           | Remarks | End of shift (As soon as possible after exposure ceases) |         |                     |   |

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## Personal protective equipment

### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

### Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |   |                                 |
|---|---------------------------------|
| a) Appearance                                   | Form: liquid                    |
| b) Odour  | no data available               |
| c) Odour Threshold                              | no data available               |
| d) pH   | 4.6                             |
| e) Melting point/freezing point                 | no data available               |
| f) Initial boiling point and boiling range      | no data available               |
| g) Flash point                                  | 37.8 °C (100.0 °F) - closed cup |
| h) Evaporation rate                             | no data available               |
| i) Flammability (solid, gas)                    | no data available               |
| j) Upper/lower flammability or explosive limits | no data available               |
| k) Vapour pressure                              | no data available               |
| l) Vapour density                               | no data available               |
| m) Relative density                             | no data available               |
| n) Water solubility                             | no data available               |
| o) Partition coefficient: n-octanol/water       | no data available               |
| p) Auto-ignition temperature                    | no data available               |
| q) Decomposition temperature                    | no data available               |
| r) Viscosity                                    | no data available               |
| s) Explosive properties                         | no data available               |

t) Oxidizing properties      no data available

## 9.2 Other safety information

no data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

Acids, Oxidizing agents, Alkali metals, Strong oxidizing agents, Ammonia, Acid chlorides, Acid anhydrides, Reducing agents, Peroxides

### 10.6 Hazardous decomposition products

Other decomposition products - no data available  
In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

no data available

Inhalation: no data available

Dermal: no data available

no data available

#### Skin corrosion/irritation

no data available

#### Serious eye damage/eye irritation

no data available

#### Respiratory or skin sensitisation

no data available

#### Germ cell mutagenicity

no data available

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### Reproductive toxicity

no data available

no data available

#### Specific target organ toxicity - single exposure

no data available

**Specific target organ toxicity - repeated exposure**

no data available

**Aspiration hazard**

no data available

**Additional Information**

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Heart - Irregularities - Based on Human Evidence

Central nervous system - Breathing difficulties - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence (Ethanol)

Stomach - Irregularities - Based on Human Evidence (Methanol)

Stomach - Irregularities - Based on Human Evidence (Oxalic acid diammonium salt)

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

no data available

**12.2 Persistence and degradability**

no data available

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life with long lasting effects.

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**13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods****Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION****DOT (US)**

UN number: 1993      Class: 3      Packing group: III

Proper shipping name: Flammable liquids, n.o.s. (Ethanol, Methanol)

Reportable Quantity (RQ):

Marine pollutant: No

Poison Inhalation Hazard: No

**IMDG**

UN number: 1993      Class: 3      Packing group: III      EMS-No: F-E, S-E

Proper shipping name: FLAMMABLE LIQUID, N.O.S. (Ethanol, Methanol)

Marine pollutant: No

**IATA**

## 15. REGULATORY INFORMATION

### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

|          | CAS-No. | Revision Date |
|----------|---------|---------------|
| Methanol | 67-56-1 | 2007-07-01    |

### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

|          | CAS-No. | Revision Date |
|----------|---------|---------------|
| Ethanol  | 64-17-5 | 2007-03-01    |
| Methanol | 67-56-1 | 2007-07-01    |

### Pennsylvania Right To Know Components

|          | CAS-No.   | Revision Date |
|----------|-----------|---------------|
| Water    | 7732-18-5 |               |
| Ethanol  | 64-17-5   | 2007-03-01    |
| Methanol | 67-56-1   | 2007-07-01    |

### New Jersey Right To Know Components

|                     | CAS-No.   | Revision Date |
|---------------------|-----------|---------------|
| Water               | 7732-18-5 |               |
| Ethanol             | 64-17-5   | 2007-03-01    |
| C.I. Basic violet 3 | 548-62-9  |               |
| Methanol            | 67-56-1   | 2007-07-01    |

### California Prop. 65 Components

|   | CAS-No. | Revision Date |
|---|---------|---------------|
| WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. | 67-56-1 | 2012-03-16    |
| Methanol  |         |               |

## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

|                    |  |
|--------------------|--|
| Acute Tox.         | Acute toxicity   |
| Aquatic Acute      | Acute aquatic toxicity                                 |
| Aquatic Chronic    | Chronic aquatic toxicity                               |
| Carc.              | Carcinogenicity  |
| Eye Dam.           | Serious eye damage                                     |
| Flam. Liq.         | Flammable liquids                                      |
| H225               | Highly flammable liquid and vapour.                    |
| H226               | Flammable liquid and vapour.                           |
| H301 + H311 + H331 | Toxic if swallowed, in contact with skin or if inhaled |
| H302               | Harmful if swallowed.                                  |
| H315               | Causes skin irritation.                                |
| H318               | Causes serious eye damage.                             |
| H319               | Causes serious eye irritation.                         |
| H351               | Suspected of causing cancer.                           |
| H370               | Causes damage to organs.                               |
| H401               | Toxic to aquatic life.                                 |
| H410               | Very toxic to aquatic life with long lasting effects.  |



H411 Toxic to aquatic life with long lasting effects.  
Skin Irrit. Skin irritation  
STOT SE Specific target organ toxicity - single exposure

**HMIS Rating**

Health hazard: 2  
Chronic Health Hazard: \*  
Flammability: 3  
Physical Hazard 0

**NFPA Rating**

Health hazard: 2  
Fire Hazard: 3  
Reactivity Hazard: 0

**Further information**

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

**Preparation Information**

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Product Safety – Americas Region  
1-800-521-8956

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