1. PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product name</th>
<th>Crystal Violet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Number</td>
<td>C3886</td>
</tr>
<tr>
<td>Brand</td>
<td>Sigma</td>
</tr>
<tr>
<td>Supplier</td>
<td>Sigma-Aldrich</td>
</tr>
<tr>
<td>3050 Spruce Street</td>
<td>SAINT LOUIS MO 63103 USA</td>
</tr>
<tr>
<td>Telephone</td>
<td>+1 800-325-5832</td>
</tr>
<tr>
<td>Fax</td>
<td>+1 800-325-5052</td>
</tr>
<tr>
<td>Emergency Phone # (For both supplier and manufacturer)</td>
<td>(314) 776-6555</td>
</tr>
<tr>
<td>Preparation Information</td>
<td>Sigma-Aldrich Corporation</td>
</tr>
<tr>
<td></td>
<td>Product Safety - Americas Region</td>
</tr>
<tr>
<td></td>
<td>1-800-521-8956</td>
</tr>
</tbody>
</table>

2. HAZARDS IDENTIFICATION

**Emergency Overview**

**OSHA Hazards**
Toxic by ingestion, Irritant, Carcinogen

**GHS Classification**
- Acute toxicity, Oral (Category 4)
- Skin irritation (Category 2)
- Serious eye damage (Category 1)
- Carcinogenicity (Category 2)
- Acute aquatic toxicity (Category 1)
- Chronic aquatic toxicity (Category 1)

**GHS Label elements, including precautionary statements**

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Signal word</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Pictogram Image]</td>
<td>Danger</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazard statement(s)</th>
<th>Precautionary statement(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>H351</td>
<td>Suspected of causing cancer.</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Precautionary statement(s)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P273</td>
<td>Avoid release to the environment.</td>
</tr>
<tr>
<td>P280</td>
<td>Wear protective gloves/ eye protection/ face protection.</td>
</tr>
<tr>
<td>P305 + P351 + P338</td>
<td>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</td>
</tr>
<tr>
<td>P501</td>
<td>Dispose of contents/ container to an approved waste disposal plant.</td>
</tr>
</tbody>
</table>

**HMIS Classification**

<table>
<thead>
<tr>
<th>Health hazard:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
</tr>
</tbody>
</table>
Chronic Health Hazard: *  
Flammability: 0  
Physical hazards: 0  

NFPA Rating  
Health hazard: 2  
Fire: 0  
Reactivity Hazard: 0  

Potential Health Effects  
Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.  
Skin: May be harmful if absorbed through skin. Causes skin irritation.  
Eyes: Causes eye irritation.  
Ingestion: Toxic if swallowed.  

3. COMPOSITION/INFORMATION ON INGREDIENTS  

Synonyms:  
- Basic Violet 3  
- Methyl Violet 10B  
- Hexamethylpararosaniline chloride  
- Gentian Violet  

Formula: $\text{C}_{25}\text{H}_{30}\text{ClN}_3$  
Molecular Weight: 407.98 g/mol  

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
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</thead>
<tbody>
<tr>
<td>C.I. Basic violet 3</td>
<td>Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>548-62-9</td>
</tr>
<tr>
<td>EC-No.</td>
<td>208-953-6</td>
</tr>
<tr>
<td>Index-No.</td>
<td>612-204-00-2</td>
</tr>
</tbody>
</table>

4. 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. 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  
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.  

5. FIREFIGHTING MEASURES  

Conditions of flammability  
Not flammable or combustible.  

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

Special protective equipment for firefighters  
Wear self contained breathing apparatus for fire fighting if necessary.  

Hazardous combustion products  
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Hydrogen chloride gas  

6. ACCIDENTAL RELEASE MEASURES
Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

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.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

Light sensitive. Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) 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).

Hand 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.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatri® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatri® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye 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 and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
- Form: powder
- Colour: dark green

**Safety data**
- pH: 2.5 - 3.5 at 10 g/l at 20 °C (68 °F)
- Melting point/freezing point: Melting point/range: 205 °C (401 °F) - lit.
- Boiling point: no data available
- Flash point: no data available
- Ignition temperature: no data available
- Auto-ignition temperature: > 190 °C (> 374 °F)
- Lower explosion limit: no data available
- Upper explosion limit: no data available
- Vapour pressure: no data available
- Density: 1.190 g/cm³ at 20 °C (68 °F)
- Water solubility: 50 g/l at 27 °C (81 °F)
- Partition coefficient: log Pow: 1.172 at 25 °C (77 °F)
- Relative vapour density: no data available
- Odour: no data available
- Odour Threshold: no data available
- Evaporation rate: no data available

10. STABILITY AND REACTIVITY

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
no data available

**Conditions to avoid**
no data available

**Materials to avoid**
Strong oxidizing agents

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Hydrogen chloride gas
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

**Acute toxicity**
- Oral LD50
  LD50 Oral - mouse - 96 mg/kg
LD50 Oral - rabbit - 150 mg/kg

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
LD50 Intraperitoneal - rat - 8.9 mg/kg
LD50 Intraperitoneal - mouse - 5.1 mg/kg
LD50 Intraperitoneal - rabbit - 5 mg/kg
LD50 Intraduodenal - rabbit - 160 mg/kg

Skin corrosion/irritation
Skin - Human - Irritating to skin. - 3 d

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity
Genotoxicity in vitro - Human - HeLa cell
DNA inhibition
Genotoxicity in vitro - Human - HeLa cell
Cytogenetic analysis
Genotoxicity in vitro - Human - lymphocyte
Cytogenetic analysis
Genotoxicity in vitro - rat - Liver
DNA inhibition
Genotoxicity in vitro - mouse - lymphocyte
DNA damage
Genotoxicity in vitro - Hamster - ovary
Cytogenetic analysis
Genotoxicity in vitro - Mammal - lymphocyte
DNA damage
Genotoxicity in vitro - Mammal - Other cell types
Cytogenetic analysis
Genotoxicity in vitro - Non-mammalian - Other cell types
Cytogenetic analysis
Genotoxicity in vitro - Equivocal evidence.
Histidine reversion (Ames)

Carcinogenicity
Limited evidence of a carcinogenic effect.

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.

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

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

Teratogenicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects
- Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
- Ingestion: Toxic if swallowed.
- Skin: May be harmful if absorbed through skin. Causes skin irritation.
- Eyes: Causes eye irritation.

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

Synergistic effects
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity
- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 0.24 - 5 mg/l - 48 h
  Method: OECD Test Guideline 202
- Toxicity to algae: - Pseudokirchneriella subcapitata - 0.025 - 0.8 mg/l - 72 h
  Method: OECD Test Guideline 201

Persistence and degradability
- Biodegradability: Result: 10 % - Not readily biodegradable.

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
- An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
- Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS
Product
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.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
UN number: 3077  Class: 9  Packing group: III  EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (C.I. Basic violet 3)
Marine pollutant: Marine pollutant

IATA
UN number: 3077  Class: 9  Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (C.I. Basic violet 3)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by ingestion, Irritant, Carcinogen

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
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

<table>
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<tr>
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New Jersey Right To Know Components

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California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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