Safety Data Sheet
Crystal Violet Solution, Stirling's

Section 1 - Chemical Product and Company Identification

SDS Name: Crystal Violet Solution, Stirling's
Catalog Numbers: SO-319, A-107-3
Company Identification: Transene Company, Inc., DBA ROWLEY BIOCHEMICAL, Inc.
10 ELECTRONICS AVENUE
DANVERS, MA 01923
For information, call: 978-739-4883
Emergency Number: 800-424-9300
For CHEMTREC assistance, call: 800-424-9300

Section 2 - Hazards Identification

GHS Classifications

H226-Flammable liquids: 3
H303-Acute toxicity, oral: 5
H317-Sensitisation, skin: 1
H318-Serious eye damage/eye irritation: 1
H331-Acute toxicity, inhalation: 3
H341-Germ cell mutagenicity: 2
H351-Carcinogenicity: 2
H370-Specific target organ toxicity, single exposure: 1
H372-Specific target organ toxicity, repeated exposure: 1
H400-Hazardous to the aquatic environment, acute hazard: 1
H410-Hazardous to the aquatic environment, long-term hazard: 1

14.4% of the mixture consists of ingredients of unknown acute dermal toxicity.
4.9% of the mixture consists of ingredients of unknown acute inhalation toxicity.

Pictograms or Hazard symbols and Hazard statement(s):

Signal Word: Danger

Hazard Statements:

H226-Flammable liquid and vapour
H303-May be harmful if swallowed
H317-May cause an allergic skin reaction
H318-Causes serious eye damage
H331-Toxic if inhaled
H341-Suspected of causing genetic defects
H351-Suspected of causing cancer
H370-Causes damage to organs (target organs: respiratory system, central nervous system, and optic nerve)
H372-Causes damage to organs through prolonged or repeated exposure (target organs: kidney, liver, spleen, blood, cardiovascular system)
H400-Very toxic to aquatic life
H410-Very toxic to aquatic life with long lasting effects

Precautionary Statements:

P201-Obtain special instructions before use.
P202-Do not handle until all safety precautions have been read and understood.
P210-Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
P233-Keep container tightly closed.
P240-Ground and bond container and receiving equipment.
P241-Use explosion-proof electrical/ventilating/lighting equipment.
P242-Use non-sparking tools.
P243-Take action to prevent static discharges.
P260-Do not breathe dust/fume/gas/mist/vapours/spray.
P261-Avoid breathing dust/fume/gas/mist/vapours/spray.
P264-Wash thoroughly after handling.
P270-Do not eat, drink, or smoke when using this product.
P271-Use only outdoors or in a well-ventilated area.
P272-Contaminated work clothing should not be allowed out of the workplace.
P273-Avoid release to the environment.
P280-Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312-If swallowed: Call a Poison Center/doctor if you feel unwell.
P302+P352-If on skin: Wash with plenty of soap and water.
P303+P361+P353-If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340-If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338-If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311-If exposed or concerned: Call a Poison Center/doctor.
P308+P313-If exposed or concerned: Get medical advice/attention.
P310-Immediately call a Poison Center/doctor.
P311-Call a Poison Center/doctor.
P314-Get medical advice/attention if you feel unwell.
P333+P313-If skin irritation or rash occurs: Get medical advice/attention.
P362+P364-Take off contaminated clothing and wash it before reuse.
P370+P378-In case of fire: Use dry chemical, carbon dioxide, dry sand, water spray or alcohol-resistant foam to extinguish.
P391-Collect spillage.

P403+P233-Store in a well-ventilated place. Keep container tightly closed.
P403+P235-Store in a well-ventilated place. Keep cool.
P405-Store locked up.
P501-Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent
548-62-9	Crystal Violet	4.9 w/v
62-53-3	Aniline	2 v/v
64-17-5	Ethyl Alcohol	9.5 v/v
67-56-1	Methyl Alcohol	0.5 v/v
7732-18-5	Water	balance

Section 4 - First Aid Measures

Eye Exposure: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Remove contact lenses if present and easy to do. Immediately call a physician.

Dermal Exposure: In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Seek immediate medical advice.

Oral Exposure: If swallowed, seek immediate medical advice. Do not induce vomiting.

Inhalation Exposure: If inhaled, remove to fresh air. Immediate medical attention is required.

Section 5 - Fire Fighting Measures

General Information: Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

Hazardous Combustion Products: Carbon oxides, nitrogen oxides, hydrogen chloride gas, hydrogen chloride, formaldehyde, irritating and toxic fumes and gases.

Flash Point: Not available
Autoignition Temperature: Not available
Explosion Limits, Lower: Not available
Upper: Not available
NFPA Rating: (estimated) Health: 3; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s):
Wear personal protective equipment. Do not ingest or inhale. Do not get on skin or clothing. Do not get in eyes. Ensure adequate ventilation. Eliminate all sources of ignition. Take precautionary measures against static discharge.

Methods for Cleaning up: Absorb with sand, earth, or vermiculite. Do not absorb with combustible material such as saw dust. Carefully sweep up and containerize for proper disposal. Use only non-sparking tools. Use explosion-proof equipment and take precautionary measures against static discharge. Do not release to the environment. Do not release to drains.

Section 7 - Handling and Storage

Use care when handling. Wear personal protective equipment. Wash thoroughly after handling. Ensure adequate ventilation. Use only under a chemical fume hood. Do not ingest or inhale. Do not get on skin or clothing. Do not get in eyes. Store in a tightly closed container in a cool, dry, and well-ventilated area. Light sensitive. Protect from heat. Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting equipment. Keep away from incompatible materials. Vapors heavier than air may travel considerable distance and ignite or explode.

NOTE: Static discharge could act as an ignition source.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and

ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Exposure Limits:

Chemical Name	ACGIH - TLV	NIOSH - IDLH	OSHA - Final PELs
Crystal Violet CAS#548-62-9	Not listed	Not listed	Not listed
Aniline CAS#62-53-3	2 ppm Skin TWA	100 ppm IDLH	5 ppm TWA 19 mg/m3 TWA
Ethyl Alcohol CAS#64-17-5	1000 ppm STEL	1000 ppm TWA 1900 mg/m3 TWA 3300 ppm IDLH	1000 ppm TWA 1900 mg/m3 TWA
Methyl Alcohol CAS#67-56-1	200 ppm TWA 250 ppm STEL	200 ppm TWA 260 mg/m3 TWA 250 ppm STEL 325 mg/m3 STEL 6000 ppm IDLH	200 ppm TWA 260 mg/m3 TWA

OSHA Vacated PELs: Aniline: 2 ppm TWA; 8 mg/m3 Skin TWA
Ethyl Alcohol: 1000 ppm TWA; 1900 mg/m3 TWA

Methyl alcohol: 200 ppm TWA; 260 mg/m3 TWA; 250 ppm STEL; 325 mg/m3 STEL

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: Purple
Odor: Not available
Vapor Pressure: Not available
Odor Threshold: Not available
Vapor Density: Not available
pH: Not available
Relative Density: Not available
Melting point/freezing point: Not available
Solubility: Soluble in water
Boiling Point: Not available
Flash Point: Not available
Evaporation Rate: Not available
Flammability (solid, gas): Not applicable
Partition coefficient: n-octanol/water: Not available
Autoignition Temperature: Not available
Decomposition Temperature: Not available
Viscosity: Not available
Specific Gravity/Density: Not available

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Reacts violently with oxidizers: Risk of fire/explosion.

Conditions to Avoid: Extremely high or low temperatures. Open flame. Incompatible materials, ignition sources, excess heat, and oxidizers. Light sensitive.
Incompatibilities with Other Materials: Oxidizing agents, acids, strong reducing agents, alkali metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium-tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, and potassium dioxide.
Hazardous Decomposition Products: Carbon oxides, nitrogen oxides, hydrogen chloride gas, hydrogen chloride, formaldehyde, irritating and toxic fumes and gases.

Section 11 - Toxicological Information

CAS#548-62-9 Crystal Violet: RTECS#: B09000000
LD50 Oral: 420 mg/kg (rat)
LD50 Dermal: Not available
LC50 Inhalation: Not available

Carcinogenicity: Crystal Violet CAS#548-62-9 is not listed by NTP, ACGIH, or OSHA. Crystal Violet is listed by IARC (Group 2B, Possibly Carcinogenic to Humans) and California Prop. 65 as a carcinogen.

CAS#62-53-3 Aniline: RTECS#: BW6650000
LD50 Oral: 250 mg/kg (rat)
LD50 Dermal: 840 mg/kg (rabbit)
LC50 Inhalation: 3.3 mg/L 4h vapor (rat)

Carcinogenicity: Aniline CAS#62-53-3 is not listed by NTP or OSHA. Aniline is listed by IARC (Group 2A, Probably Carcinogenic to Humans), ACGIH (A3, Animal Carcinogen), and California Prop. 65 as a carcinogen.

CAS# 64-17-5 Ethyl Alcohol: RTECS#: KQ6300000
LD50 Oral: 10470 mg/kg (Rat)
LD50 Dermal: Not available
LC50 Inhalation: 124.7 mg/L 4h (rat)

Draize test, rabbit, eye: 500 mg/24h Mild Irritant.
Skin: Repeated exposure may cause skin dryness or cracking.
Ethyl Alcohol overexposure may lead to headache, dizziness, tiredness, nausea, and vomiting.

Carcinogenicity: Ethyl Alcohol CAS#64-17-5 is not listed by OSHA. Ethyl Alcohol is listed by IARC (Group 1, Carcinogenic to Humans), NTP (Known Carcinogen), and ACGIH (A3, Animal Carcinogen). Ethyl Alcohol is listed by California Prop. 65 as a developmental carcinogen (alcoholic beverages only).

CAS#67-56-1 Methyl Alcohol: RTECS#: PC1400000
LD50 Oral: 100.1 mg/kg (expert judgement)
LD50 Dermal: 300.1 mg/kg (expert judgement)
LC50 Inhalation: 3.1 mg/L 4h vapor (expert judgement)

Investigated as a mutagen, reproductive effecter.

Draize test, rabbit, eye: 100 mg/24h Moderate Irritant.
Draize test, rabbit, skin: 20 mg/24h Moderate Irritant.

Carcinogenicity: Methyl Alcohol CAS#67-56-1 is not listed by IARC, NTP, ACGIH, or OSHA. Methyl Alcohol is listed by California Prop. 65 as a developmental carcinogen.

Information on the likely routes of exposure: Routes of entry anticipated: oral, dermal, inhalation, and eye.

Epidemiology: Not available.
Teratogenicity: Not available.
Reproductive Effects: Not available.
Developmental Effects: Not available.
Neurotoxicity: Not available.
Mutagenicity: Suspected of causing genetic defects.
Specific Target Organ Toxicity, Single Exposure: Respiratory system, central nervous system, and optic nerve.
Specific Target Organ Toxicity, Repeated Exposure: Kidney, liver, spleen, blood, cardiovascular system.

Symptoms associated with exposure: May cause an allergic skin reaction. Causes damage to organs if in contact with skin, if inhaled, or if swallowed. Causes serious eye damage. Suspected of causing cancer. Eye contact may result in pain, watering, redness, blurred vision, risk of blindness. Skin exposure may cause irritation, cracking, dermatitis. Overexposure may cause headache, vomiting, nausea, fatigue, dizziness, drowsiness, confusion, weakness, stomach irregularities. Absorption of aniline into the body leads to methemoglobin formation which may cause cyanosis. May have delayed onset.

The toxicological properties of this material have not been thoroughly investigated.

Section 12 - Ecological Information

Ecotoxicity: Do not release to the environment. Do not release to drains. Very toxic to aquatic life. May cause long-term adverse effects to the environment.

CAS#548-62-9 Crystal Violet:
ErC50, freshwater algae: 0.2 - 0.8 mg/L 72h static (pseudokirchneriella subcapitata)(green algae)
EC50, water flea: 0.24 - 0.5 mg/L 48h static (daphnia magna)
LC50, freshwater fish: 0.13 mg/L 96h (pimephales promelas)(fathead minnow)

CAS#62-53-3 Aniline:
LC50, freshwater fish: 10.6 mg/L 96h flow-through (oncorhynchus mykiss)(rainbow trout)
EC50, water flea: 0.16 mg/L 48h semi-static (daphnia magna)
ErC50, algae: 175 mg/L 72h static (chlorella pyrenoidosa)
EC50, bacteria: 2500 mg/L 10min (activated sludge)

CAS#64-17-5 Ethyl Alcohol:
LC50, freshwater fish: 14200 mg/L 96h (pimephales promelas)(fathead minnow)
EC50, freshwater algae: 275 mg/L 72h (chlorella vulgaris)
EC50, water flea: 9268 mg/L 48h
EC50, water flea: 10800 mg/L 24h
EC50, microtox: 34634 mg/L 30min (photobacterium phosphoreum)
EC50, microtox: 35470 mg/L 5min (photobacterium phosphoreum)

CAS# 67-56-1 Methyl Alcohol:
LC50, freshwater fish: 15400 mg/L 96h flow-through (lepomis macrochirus)(bluegill)
LC50, freshwater fish: 19000 mg/L 96h (oncorhynchus mykiss)(rainbow trout)
EC50, water flea: 18260 mg/L 96h semi-static (daphnia magna)
ErC50, algae: 22000 mg/L 96h static (pseudokirchneriella subcapitata)(green algae)
IC50, bacteria: >1000 mg/L 3h (activated sludge)

Persistence and degradability: Not available.
Bio-accumulative potential: Not available.
Mobility: Will likely be mobile in the environment due to its water solubility.

Section 13 - Disposal Considerations

DISPOSAL: Dispose of in accordance with all federal, state, and local regulations.

Section 14 – Transport Information

DOT
Proper shipping name: Toxic liquids, flammable, organic, N.O.S. (Aniline, SD Alcohol)
UN2929
PG II
Hazard class 6.1(3)

Section 15 - Regulatory Information

Canada Regulatory Information

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the SDS contains all the information required by the CPR.

Section 16 - Additional Information

SDS Creation Date: 10/21/12
Revision #1: 1-23-15 RC
Revision #2: 5-10-21
Revision #3: 8-3-23

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