

Safety Data Sheet

Thionin Counterstain

Section 1 - Chemical Product and Company Identification

SDS Name: Thionin Counterstain

Catalog Numbers: SO-826

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

H303-Acute toxicity, oral: 5

H313-Acute toxicity, dermal: 5

H314-Skin corrosion/irritation: 1B

H317-Sensitisation, skin: 1

H318-Serious eye damage/eye irritation: 1

H331-Acute toxicity, inhalation: 3

H341-Germ cell mutagenicity: 2

H350-Carcinogenicity: 1A

H370-Specific target organ toxicity, single exposure: 1

H372-Specific target organ toxicity, repeated exposure: 1

H401-Hazardous to the aquatic environment, acute toxicity: 2

Pictograms or Hazard symbols and Hazard statement(s):



Signal Word: Danger

Hazard Statements:

H303-May be harmful if swallowed
H313-May be harmful in contact with skin
H314-Causes severe skin burns and eye damage
H317-May cause an allergic skin reaction
H318-Causes serious eye damage
H331-Toxic if inhaled
H341-Suspected of causing genetic defects
H350-May cause 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, heart, spleen, and blood)
H401-Toxic to aquatic life

Precautionary Statements:

P201-Obtain special instructions before use.
P202-Do not handle until all safety precautions have been read and understood.
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.
P301+P330+P331-If swallowed: Rinse mouth. Do NOT induce vomiting.
P302+P312-If on skin: 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.
P363-Wash contaminated clothing before reuse.
P403+P233-Store in a well-ventilated place. Keep container tightly closed.
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 |
|------------|-----------------------|----------|
| 78338-22-4 | Thionin Acetate | 0.01 w/v |
| 10510-54-0 | Cresyl Violet Acetate | 0.01 w/v |
| 7114-03-6 | Methyl Green | 0.05 w/v |
| 64-19-7 | Glacial Acetic Acid | 0.5 v/v |
| 50-00-0 | Formaldehyde, 37-40% | 8.5 v/v |
| 67-56-1 | Methanol | 1.5 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. Seek immediate medical attention.

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 attention.

Oral Exposure: If swallowed, seek immediate medical advice. Do NOT induce vomiting. Rinse mouth with water.

Inhalation Exposure: If inhaled, remove to fresh air. Seek immediate medical attention.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use dry chemical, carbon dioxide, dry sand, water spray, or alcohol-resistant foam.

Hazardous Combustion Products: Carbon oxides, nitrogen oxides, sulfur oxides, zinc oxides, hydrogen chloride gas, hydrogen bromide gas, chlorine, hydrogen, 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: 2; Flammability: 0; 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.

Methods for Cleaning up: Absorb with sand, earth, or vermiculite. Carefully sweep up and containerize for proper disposal. Do not release to the environment. Do not release to drains.

Section 7 - Handling and Storage

Use care when handling. Use only under a chemical fume hood. Wear personal protective equipment. Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Store in a cool, dry, and well-ventilated area. Keep in a tightly closed and non-metal container. Keep away from incompatible materials

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 |
|-----------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------|
| Thionin Acetate CAS#78338-22-4 | Not listed | Not listed | Not listed |
| Cresyl Violet Acetate CAS#10510-54-0 | Not listed | Not listed | Not listed |
| Methyl Green CAS#7114-03-6 | Not listed | Not listed | Not listed |
| Glacial Acetic Acid CAS#64-19-7 | 10 ppm TWA 15 ppm STEL | 10 ppm TWA 25 mg/m ³ TWA 15 ppm STEL 37 mg/m ³ STEL 50 ppm IDLH | 10 ppm TWA 25 mg/m ³ TWA |
| Formaldehyde CAS#50-00-0 | 0.1 ppm TWA 0.3 ppm STEL | 0.1 ppm Ceiling 0.016 ppm TWA 20 ppm IDLH | 0.75 ppm TWA 2 ppm STEL |
| Methyl Alcohol CAS#67-56-1 | 200 ppm TWA 250 ppm Skin STEL | 200 ppm TWA 260 mg/m ³ TWA 250 ppm STEL 325 mg/m ³ STEL 6000 ppm IDLH | 200 ppm TWA 260 mg/m ³ TWA |

OSHA Vacated PELs: Glacial Acetic Acid: 10 ppm TWA; 25 mg/m³ TWA
Formaldehyde: 5 ppm Ceiling; 3 ppm TWA; 10 ppm STEL
Methyl Alcohol: 200 ppm TWA; 260 mg/mg TWA; 250 ppm STEL;
325 mg/m³ Skin STEL

| |
|----------------------------------------------|
| Section 9 - Physical and Chemical Properties |
|----------------------------------------------|

Physical State: Liquid
Appearance: Dark Blue
Odor: Pungent
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 available
Partition coefficient: n-octanol/water: Not available
Auto-ignition 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. Note: Vapors may form explosive mixtures with air.

Conditions to Avoid: Incompatible materials, ignition sources, excess heat, flames, sparks. Avoid freezing.

Incompatible Materials: Strong oxidizing agents, strong bases, acids, reducing agents, aniline, phenol, isocyanates, acid anhydrides, amines, peroxides, acid chlorides, alkali metals, nitriles, chromic acid, ethylene glycol, perchloric acid, nitric acid, phosphorous trichloride, sodium peroxide, strong caustics, carbonates, hydroxides, oxides, phosphates, and metals.

Hazardous Decomposition Products: Carbon oxides, nitrogen oxides, sulfur oxides, zinc oxides, hydrogen chloride gas, hydrogen bromide gas, chlorine, hydrogen, formaldehyde, irritating and toxic fumes and gases.

Section 11 - Toxicological Information

CAS#78338-22-4 Thionin Acetate:

LD50 Oral: Not available

LD50 Dermal: Not available

LC50 Inhalation: Not available

Carcinogenicity: Thionin Acetate CAS#78338-22-4 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop 65.

CAS#10510-54-0 Cresyl Violet Acetate:

LD50 Oral: Not available

LD50 Dermal: Not available

LC50 Inhalation: Not available

Carcinogenicity: Cresyl Violet Acetate CAS#10510-54-0 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop 65.

CAS#7114-03-6 Methyl Green:

LD50 Oral: Not available

LD50 Dermal: Not available

LC50 Inhalation: Not available

Carcinogenicity: Methyl Green CAS#7114-03-6 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop 65.

CAS#64-19-7 Glacial Acetic Acid: RTECS#: AF1225000

LD50 Oral: 3310 mg/kg (rat)

LD50 Dermal: 1060 mg/kg (rabbit)

LC50 Inhalation: 11.4 mg/L 4h (rabbit)

Investigated as a mutagen, reproductive effector.

Skin corrosion/irritation: skin (rabbit), causes severe burns

Serious eye damage/eye irritation: eyes (rabbit), corrosive to eyes, causes serious eye damage

Carcinogenicity: Glacial Acetic Acid CAS#64-19-7 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop 65.

CAS#50-00-0 Formaldehyde:

LD50 Oral: 500 mg/kg (rat)

LD50 Dermal: 270 mg/kg (rabbit)

LC50 Inhalation: 0.578 mg/L 4h (rat)

Carcinogenicity: Formaldehyde CAS#50-00-0 is not listed by OSHA. Formaldehyde is listed by IARC (Group 1, Carcinogenic to Humans), NTP (Known Carcinogen), ACGIH (A1, Known Human Carcinogen), and California Prop. 65 as a carcinogen.

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 (expert judgement)

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: Teratogenic effects have occurred in experimental animals with formaldehyde.

Reproductive Effects: Experiments have shown reproductive toxicity effects on laboratory animals with formaldehyde.

Developmental Effects: Developmental effects have occurred in experimental animals with formaldehyde.

Neurotoxicity: Not available.

Mutagenicity: Mutagenic effects have occurred in humans with formaldehyde.

Specific Target Organ Toxicity, Single Exposure: Respiratory system, central nervous system, and optic nerve.

Specific Target Organ Toxicity, Repeated Exposure: Kidney, liver, heart, spleen, and blood.

Symptoms associated with exposure: Headache, dizziness, tiredness, nausea, and vomiting. Corrosive material. Causes severe skin burns and eye damage. Risk of blindness. If ingested, severe burns of the mouth and throat, and danger of perforation of esophagus and stomach. May cause an allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, and flushing. Other symptoms of exposure may include drop in blood pressure, tachycardia, cardiovascular disorders, disturbed electrolyte balance, pain, metallic taste, impaired kidney function. May cause cancer and genetic defects. May damage organs.

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. Toxic to aquatic life. May cause long-term adverse effects in the aquatic environment.

CAS#64-19-7 Glacial Acetic Acid:

LC50, freshwater fish: 88 mg/L 96h (pimephales promelas)

LC50, freshwater fish: 75 mg/L 96h (lepomis macrochirus)

EC50, water flea: 95 mg/L 24h

EC50, microtox: 8.8 mg/L 5min (photobacterium phosphoreum)

CAS#50-00-0 Formaldehyde:

LC50, freshwater fish: 15 mg/L 96h (leuciscus idus)

EC50, water flea: 20 mg/L 96h

EC50, water flea: 2 mg/L 48h

CAS#67-56-1 Methyl Alcohol:

LC50, freshwater fish: >10000 mg/L 96h (pimephales promelas)(fathead minnow)

EC50, water flea: >10000 mg/L 24h

EC50, algae: 22000 mg/L 96h (pseudokirchneriella subcapitata)(green algae)

IC50, bacteria: >1000 mg/L 3h

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

Non-Regulated

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: 1-13-23

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Rowley Biochemical, Inc. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages, howsoever arising, even if Rowley Biochemical, Inc. has been advised of the possibility of such damages.