

# Safety Data Sheet

## B5 Fixative Substitute

### Section 1 - Chemical Product and Company Identification

**SDS Name:** B5 Fixative Substitute

**Catalog Numbers:** SO-1136, F-221

**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

H225-Flammable liquids: 2

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

H332-Acute toxicity, inhalation: 4

H335-Specific target organ toxicity, single exposure; Respiratory tract irritation: 3

H336-Specific target organ toxicity, single exposure; Narcotic effects: 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 hazard: 2

#### Pictograms or Hazard symbols and Hazard statement(s):



Signal Word: Danger

## **Hazard Statements:**

H225-Highly flammable liquid and vapour  
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  
H332-Harmful if inhaled  
H335-May cause respiratory irritation  
H336-May cause drowsiness or dizziness  
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.  
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.  
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.  
P312-Call a Poison Center/doctor if you feel unwell.  
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.

P370+P378-In case of fire: Use dry chemical, carbon dioxide, dry sand, water spray, or alcohol-resistant foam to extinguish.

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
67-63-0	Isopropyl Alcohol	50 v/v
50-00-0	Formaldehyde, 37-40%	10 v/v
67-56-1	Methyl Alcohol	1.5 v/v
7646-85-7	Zinc chloride	0.1 w/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:** 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, peroxides, zinc, zinc oxides, hydrogen chloride gas, 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: 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. Keep away from heat. Eliminate all sources of ignition. Take precautionary measures against static discharges.

**Methods for Cleaning up:** Absorb with sand, earth, or vermiculite. Carefully sweep up and containerize for proper disposal. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges. 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. Use only under a chemical fume hood. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Keep in a tightly closed and non-metal container. Store in a cool, dry, and well-ventilated area. Store away from direct sunlight. Keep away from open flames, hot surfaces, and sources of ignition. Keep away from incompatible materials. Use spark proof tools and explosion-proof equipment. Properly ground metal parts of equipment. Take precautionary measures against static discharges. Vapors heavier than air may travel considerable distance and ignite or explode.

## 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
Isopropyl Alcohol CAS#67-63-0	200 ppm TWA 400 ppm STEL	400 ppm TWA 980 mg/m <sup>3</sup> TWA 500 ppm STEL 1225 mg/m <sup>3</sup> STEL 2000 ppm IDLH	400 ppm TWA 980 mg/m <sup>3</sup> 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 <sup>3</sup> TWA 250 ppm STEL 325 mg/m <sup>3</sup> STEL 6000 ppm IDLH	200 ppm TWA 260 mg/m <sup>3</sup> TWA
Zinc Chloride CAS#7646-85-7	1 mg/m <sup>3</sup> TWA 2 mg/m <sup>3</sup> STEL	1 mg/m <sup>3</sup> TWA 2 mg/m <sup>3</sup> STEL 50 mg/m <sup>3</sup> IDLH	1 mg/m <sup>3</sup> TWA

**OSHA Vacated PELs:** Isopropyl Alcohol: 400 ppm TWA; 980 mg/m<sup>3</sup> TWA; 500 ppm STEL; 1225 mg/m<sup>3</sup> STEL

Formaldehyde: 5 ppm Ceiling; 3 ppm TWA; 10 ppm STEL

Methyl Alcohol: 200 ppm TWA; 260 mg/m<sup>3</sup> TWA; 250 ppm STEL; 325 mg/m<sup>3</sup> Skin STEL

Zinc Chloride: 1 mg/m<sup>3</sup> TWA; 2 mg/m<sup>3</sup> STEL

Section 9 - Physical and Chemical Properties
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**Physical State:** Liquid

**Appearance:** Clear, colorless

**Odor:** Alcohol-like

**Vapor Pressure:** Not available

**Odor Threshold:** Not available

**Vapor Density:** Not available

**pH:** 4.0-4.6

**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

**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. Note: Vapors may form explosive mixtures with air.

**Conditions to Avoid:** Incompatible materials, ignition sources, excess heat, flames, oxidizers, and sparks. Direct sunlight. Avoid freezing.

**Incompatible Materials:** Oxidizing agents, strong bases, acids, reducing agents, aniline, phenol, isocyanates, acid anhydrides, amines, peroxides, acid chlorides, alkali metals, nitriles, halogens, halogenated compounds, aluminum, chloroform, chlorates, nitrates, perchlorates, acid halides, alkaline earth metals, sodium hypochlorite, calcium hypochlorite, oxyhalogenic acid salts, chromium (VI) oxide, halogen oxides, nitrogen oxides, hydrides, tetrachloromethane, phosphorous oxides, various plastics, rubber, various coatings, cyanides, sulfides, and metals.

**Hazardous Decomposition Products:** Carbon oxides, peroxides, zinc, zinc oxides, hydrogen chloride gas, hydrogen, formaldehyde, irritating and toxic fumes and gases.

## Section 11 - Toxicological Information

### **CAS#67-63-0 Isopropyl Alcohol: RTECS#: NT8050000**

LD50 Oral: 5045 mg/kg (rat)

LD50 Dermal: 12800 mg/kg (rat)

LC50 Inhalation: 72.6 mg/L 4h (rat)

**Carcinogenicity:** Isopropyl Alcohol CAS#67-63-0 is not listed by NTP, ACGIH, OSHA, or California Prop. 65. Isopropyl Alcohol is listed by IARC (Group 3, Not Classifiable as to its Carcinogenicity to Humans).

### **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 vapor (expert judgement)

**Investigated as a mutagen, reproductive effector.**

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

Draize test, rabbit, eye: 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.

### **CAS#7646-85-7 Zinc Chloride: RTECS#: ZH1400000**

LD50 Oral: 1100 mg/kg  
LD50 Dermal: >2000 mg/kg (rat)  
LC50 Inhalation: ≤1975 mg/m<sup>3</sup> 10min aerosol (rat)

**Carcinogenicity:** Zinc Chloride CAS#7646-85-7 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

**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. (Formaldehyde)

**Reproductive Effects:** Experiments have shown reproductive toxicity effects on laboratory animals. (Formaldehyde)

**Developmental Effects:** Developmental effects have occurred in experimental animals. (Formaldehyde)

**Neurotoxicity:** Not available.

**Mutagenicity:** Mutagenic effects have occurred in humans. (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. 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. 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. May cause CNS depression. May cause cancer. May cause genetic defects.

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

Section 12 - Ecological Information
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**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#67-63-0 Isopropyl Alcohol:**

LC50, freshwater fish: 11130 mg/L 96h static (pimephales promelas)(fathead minnow)

LC50, freshwater fish: >1400000 µg/L 96h (lepomis macrochirus)(bluegill)

LC50, freshwater fish: 9640 mg/L 96h flow-through (pimephales promelas)(fathead minnow)

EC50, freshwater algae: >1000 mg/L 72h (desmodesmus subspicatus)(green algae)

EC50, freshwater algae: >1000 mg/L 96h (desmodesmus subspicatus)(green algae)

EC50, water flea: 13299 mg/L 48h (daphnia magna)

EC50, water flea: 9714 mg/L 24h

EC50, microtox: 35390 mg/L 5min (photobacterium phosphoreum)

**CAS#50-00-0 Formaldehyde:**

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

EC50, water flea: 20 mg/L 96h

EC50, water flea: 2 mg/L 48h

**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

**CAS#7646-85-7 Zinc Chloride:**

LC50, freshwater fish: 0.169 mg/L 96h static (oncorhynchus mykiss)(rainbow trout)

EC50, water flea: 0.33 mg/L 48h static (daphnia magna)

IC50, bacteria: 0.35 mg/L 4h static (activated sludge)

**Persistence and degradability:** Persistence is unlikely based on available information.

**Bio-accumulative potential:** Not available.

**Mobility:** Will likely be mobile in the environment due to its water solubility and volatility.

Section 13 - Disposal Considerations

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

Section 14 - Transport Information

**DOT**

Flammable Liquids, N.O.S. (Isopropyl alcohol & Formaldehyde)

UN1993

PG II

Hazard Class 3 (flammable)

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
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**SDS Creation Date:** 11/1/12

**Revision #1.** RC 3-14-16

**Revision #2.** 7-27-23

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