

# Safety Data Sheet

## Klotz Fixative

### Section 1 - Chemical Product and Company Identification

**SDS Name:** Klotz Fixative

**Catalog Numbers:** SO-983

**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

H315-Skin corrosion/irritation: 2

H317-Sensitisation, skin: 1

H319-Serious eye damage/eye irritation: 2A

H333-Acute toxicity, inhalation: 5

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

H402-Hazardous to the aquatic environment, acute hazard: 3

2.2% of the mixture consists of ingredients of unknown acute dermal toxicity.

1.1% of the mixture consists of ingredients of unknown acute inhalation toxicity.

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



Signal Word: Danger

## **Hazard Statements:**

H315-Causes skin irritation  
H317-May cause an allergic skin reaction  
H319-Causes serious eye irritation  
H333-May be harmful if inhaled  
H335-May cause respiratory irritation  
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)  
H402-Harmful 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.  
P302+P352-If on skin: Wash with plenty of soap and water.  
P304+P312-If inhaled: Call a Poison Center or doctor/physician if you feel unwell.  
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: Call a Poison Center or doctor/physician.  
P308+P313-If exposed or concerned: Get medical advice/attention.  
P312-Call a Poison Center/doctor if you feel unwell.  
P314-Get medical advice/attention if you feel unwell.  
P332+P313-If skin irritation occurs: Get medical advice/attention.  
P333+P313-If skin irritation or rash occurs: Get medical advice/attention.  
P337+P313-If eye irritation persists: Get medical advice/attention.  
P362+P364-Take off contaminated clothing and wash it 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
50-00-0	Formaldehyde, 37-40%	1.1 v/v
67-56-1	Methanol	0.17 v/v
144-55-8	Sodium bicarbonate	1 w/v
7647-14-5	Sodium chloride	0.55 w/v
7757-82-6	Sodium sulfate	1.2 w/v
302-17-0	Chloral hydrate	1.1 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 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, sodium oxides, sulfur oxides, hydrogen, hydrogen chloride gas, formaldehyde, phosphene gas, 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

Note: Formaldehyde causes burns of the eyes, skin, and mucous membranes.

## 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
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/mg3 TWA 250 ppm STEL 325 mg/m3 STEL 6000 ppm IDLH	200 ppm TWA 260 mg/m3 TWA
Sodium Bicarbonate CAS#144-55-8	Not listed	Not listed	Not listed
Sodium Chloride CAS#7647-14-5	Not listed	Not listed	Not listed
Sodium Sulfate CAS#7757-82-6	Not listed	Not listed	Not listed
Chloral Hydrate CAS#302-17-0	Not listed	Not listed	Not listed

**OSHA Vacated PELs:** 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
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**Physical State:** Liquid  
**Appearance:** Clear, colorless  
**Odor:** Pungent  
**Vapor Pressure:** Not available  
**Odor Threshold:** Not available  
**Vapor Density:** Not available  
**pH:** Approx. 8.1  
**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
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**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Incompatible materials, ignition sources, excess heat, and freezing.  
**Incompatible Materials:** Strong oxidizing agents, strong bases, acids, reducing agents, aniline, phenol, isocyanates, acid anhydrides, amines, peroxides, acid chlorides, alkali metals, nitriles, iron/iron-containing compounds, and metals.  
**Hazardous Decomposition Products:** Carbon oxides, sodium oxides, sulfur oxides, hydrogen, hydrogen chloride gas, formaldehyde, phosphene gas, irritating and toxic fumes and gases.

Section 11 - Toxicological Information
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**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.

**CAS#144-55-8 Sodium Bicarbonate: RTECS#: VZ0950000**

LD50 Oral: 4220 mg/kg (rat)  
LD50 Dermal: Not available  
LC50 Inhalation: >4.74 mg/L 4.5h (rat) (dust/mist)

**Carcinogenicity:** Sodium Bicarbonate CAS#144-55-8 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

**CAS#7647-14-5 Sodium Chloride: RTECS#: VZ4725000**

LD50 Oral: 3 g/kg (rat)  
LD50 Dermal: >10000 mg/kg (rabbit)  
LC50 Inhalation: >42 mg/L 1h (rat)

**Carcinogenicity:** Sodium Chloride CAS#7647-14-5 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

**CAS#7757-82-6 Sodium Sulfate: RTECS#: WE1650000**

LD50 Oral: >10000 mg/kg (rat)  
LD50 Dermal: Not available  
LC50 Inhalation: >2.4 mg/L 4h (rat)

**Carcinogenicity:** Sodium Sulfate CAS#7757-82-6 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

**CAS#302-17-0 Chloral Hydrate: RTECS#: FM8750000**

LD50 Oral: 479 mg/kg (rat)

LD50 Dermal: 3030 mg/kg (rat)

LC50 Inhalation: Not available

**Carcinogenicity:** Chloral Hydrate CAS#302-17-0 is not listed by NTP, ACGIH, or OSHA. Chloral Hydrate is listed by IARC (Group 2A, probably carcinogenic to humans), and California Prop. 65 as a 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.

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

**Developmental Effects:** Developmental effects have occurred in experimental animals.

**Neurotoxicity:** Not available.

**Mutagenicity:** Mutagenic effects have occurred in humans.

**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, vomiting, drowsiness, confusion, amnesia, gastrointestinal disturbances, diarrhea, dehydration, inflammation, cardiovascular disorders, cough, shortness of breath. Risk of blindness if ingested. 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. Causes serious eye irritation which may result in pain, watering, redness. Causes skin irritation which may include redness. May cause respiratory irritation. May cause cancer. May cause genetic defects. Causes damage to organs.

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

**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: >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

**CAS#144-55-8 Sodium Bicarbonate:**

LC50, freshwater fish: 8250-9000 mg/L 96h static (lepomis macrochirus)(bluegill)  
EC50, freshwater algae: 650 mg/L 120h  
EC50, water flea: 2350 mg/L 48h

**CAS#7647-14-5 Sodium Chloride:**

LC50, freshwater fish: 5840 mg/L 96h flow-through (lepomis macrochirus)(bluegill)  
LC50, water flea: 4136 mg/L 48h static (daphnia magna)  
EC50, water flea: 874 mg/L 48h static (daphnia magna)  
EC50, algae: 2430 mg/L 120h static (nitzschia sp.)

**CAS#7757-82-6 Sodium Sulfate:**

LC50, freshwater fish: 7960 mg/L 96h static (pimephales promelas)(fathead minnow)  
EC50, water flea: 1766 mg/L 48h static (daphnia magna)  
EC50, algae: 1900 mg/L 120h static (nitzschia sp.)

**CAS#302-17-0 Chloral Hydrate:**

LC50, freshwater fish: 1720 mg/L 48h (leuciscus idus)(golden orfe)  
EC50, water flea: 500 mg/L 48h (daphnia magna)

**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
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**SDS Creation Date:** 7-9-19

**Revision #1.** 4-24-23

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