



## Material Safety Data Sheet Bouin's Fixative

### Section 1 - Chemical Product and Company Identification

**MSDS Name:**

Bouin's Fixative

**Catalog Numbers:**

LC11790

**Synonyms:**

None

**Company Identification:**

LabChem, Inc.  
200 William Pitt Way  
Pittsburgh, PA 15238

**Company Phone Number:**

(412) 826-5230

**Emergency Phone Number:**

(800) 424-9300

**CHEMTREC Phone Number:**

(800) 424-9300

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent
7732-18-5	Water	balance
64-19-7	Acetic acid	4.8
50-00-0	Formaldehyde	20
67-56-1	Methyl alcohol	3.6
88-89-1	Picric acid	1.3

### Section 3 - Hazards Identification

#### Emergency Overview

**Appearance:** Clear, yellow solution

**Caution!** Explosive when dry. May form very sensitive explosive compounds when in contact with metals. Toxic if inhaled, swallowed, or absorbed through the skin. May cause cancer. May cause eye irritation and possible burns. May cause skin sensitization. May cause blindness if swallowed. May cause central nervous system depression.

**Target Organs:** Eyes, skin, respiratory system, liver, kidneys, central nervous system

#### Potential Health Effects

**Eye:**

May cause blindness or other visual disturbances if inhaled, swallowed, or absorbed through the skin. Eye contact may result in irritation or burns with corneal damage, possibly irreversible.

**Skin:**

May cause irritation or burns with yellow staining of skin. May cause blindness if absorbed through the skin. May cause skin sensitization.



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### **Ingestion:**

May be fatal or cause blindness if swallowed. May cause decreased body temperature, shallow respiration, weak irregular pulse, unconsciousness, and death.

### **Inhalation:**

Exposure to 50ppm acetic acid is intolerable for most individuals. Causes respiratory irritation, coughing, choking, headache, dizziness, and weakness. Delayed symptoms include pulmonary edema, chest pain, frothy sputum, cyanosis, rales and hypotension.

### **Chronic:**

May cause dermatitis and conjunctivitis. May cause cancer, cirrhosis of the liver, chronic heart disease, respiratory sensitization, skin hardening and cracking. May cause blurred or painful vision, possible mutagenic or reproductive effects. Yellow/brown stains can occur.

## Section 4 - First Aid Measures

### **Eyes:**

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once.

### **Skin:**

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid.

### **Ingestion:**

Get medical aid at once. Give oxygen if respiration is depressed. If victim is conscious, give 2-4 glasses of water and induce vomiting, keeping head lower than hips to prevent aspiration into lungs.

### **Inhalation:**

Move victim to fresh air. Give artificial respiration if necessary. Get medical aid at once. Keep victim warm and at rest.

### **Notes to Physician:**

Treat symptomatically and supportively.

## 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. Combustion generates toxic fumes. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Picric acid is explosive when dry. Can release vapors that form explosive mixtures at temperatures above the flash point. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

### **Extinguishing Media:**

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

### **Autoignition Temperature:**

300°C (572°F)

### **Flash Point:**

No information found.

### **NFPA Rating:**

CAS# 7732-18-5: Health- 0, Flammability- 0, Instability- 0

CAS# 64-19-7: Health- 3, Flammability- 2, Instability- 0

CAS# 50-00-0 (solution with methanol): Health-3, Flammability- 2, Instability- 0

CAS# 88-89-1: Health-3, Flammability- 4, Instability- 4



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### Explosion Limits:

Lower: n/av. Upper: n/av.

## Section 6 - Accidental Release Measures

### General Information:

Use proper personal protective equipment as indicated in Section 8.

### Spills/Leaks:

Absorb spills with absorbent (vermiculite, sand, fuller's earth), place in plastic bags for later disposal, and moisten material with water. Do not allow spill to dry. Shut off ignition source; avoid vapors. Isolate and ventilate spill area. Keep out of sewers/drains.

## Section 7 - Handling and Storage

### Handling:

Wash thoroughly after handling. Avoid breathing dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Wash contaminated clothing before reuse. Discard contaminated shoes.

### Storage:

Store capped at room temperature. Protect from heat and incompatibles. Do not allow solution to dry.

## Section 8 - Exposure Controls, Personal Protection

### Engineering Controls:

Facilities using or storing this material should be equipped with an eyewash and safety shower. Use process ventilation or general dilution ventilation to keep airborne levels below the permissible exposure limits. Ventilation equipment should be explosion-proof and corrosion-resistant.

### Exposure Limits:

Chemical Name:	ACGIH	NIOSH	OSHA
Water	none listed	none listed	none listed
Acetic acid	10 ppm TWA 15 ppm STEL	10 ppm TWA 15 mg/m <sup>3</sup> STEL 50 ppm IDLH	10 ppm TWA 15 mg/m <sup>3</sup> TWA
Formaldehyde	0.3 ppm Ceiling	0.016 ppm TWA 0.1 ppm Ceiling 20 ppm IDLH	0.75 ppm TWA 2 ppm STEL
Picric acid	0.1 mg/m <sup>3</sup> TWA	0.1 mg/m <sup>3</sup> TWA 0.3 mg/m <sup>3</sup> STEL 75 mg/m <sup>3</sup> IDLH	0.1 mg/m <sup>3</sup> TWA

### OSHA Vacated PELs:

Acetic acid: 10 ppm TWA; 25 mg/m<sup>3</sup> TWA

Formaldehyde: 3 ppm TWA (unless specified in 1910.1048)

Picric acid: 0.1 mg/m<sup>3</sup> TWA



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### Personal Protective Equipment

**Eyes:**

Do not wear contact lenses when working with chemicals. An eye wash fountain should be available in the immediate work area. Wear splash-proof safety goggles.

**Skin:**

Wear appropriate protective gloves to prevent skin exposure.

**Clothing:**

Wear appropriate protective clothing to prevent skin exposure.

**Respirators:**

Firefighting - SCBAF:PD,PP to 50ppm - CCROVF/GMOV/SAF/SCBAF; to 100ppm - SAF:PD,PP,CF; Escape - GMOV/-SCBA.

### Section 9 - Physical and Chemical Properties

<b>Physical State:</b>	Clear liquid
<b>Color:</b>	Yellow
<b>Odor:</b>	Pungent, irritating odor
<b>pH:</b>	Acidic
<b>Vapor Pressure:</b>	Not available
<b>Vapor Density:</b>	Not available
<b>Evaporation Rate:</b>	Not available
<b>Viscosity:</b>	Not available
<b>Boiling Point:</b>	Not available
<b>Freezing/Melting Point:</b>	Not available
<b>Decomposition Temperature:</b>	Not available
<b>Solubility in water:</b>	Soluble.
<b>Specific Gravity/Density:</b>	1.0 - 1.1
<b>Molecular Formula:</b>	Not applicable
<b>Molecular Weight:</b>	Not applicable

### Section 10 - Stability and Reactivity

**Chemical Stability:**

Stable under normal temperatures and pressures. May explode if heated or allowed to dry.

**Conditions to Avoid:**

Incompatible materials, excess heat.

**Incompatibilities with Other Materials:**

Metals, metallic salts, fluorine, alkali hydroxides, oxidizing agents, reducing agents.

**Hazardous Decomposition Products:**

Oxides of nitrogen, carbon monoxide, carbon dioxide.

**Hazardous Polymerization:**

Has not been reported.

### Section 11 - Toxicological Information

**RTECS:**

CAS# 7732-18-5: ZC0110000.

CAS# 64-19-7: AF1225000.



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CAS# 50-00-0: LP8925000.

CAS# 88-89-1: TJ7875000.

### LD50/LC50:

CAS# 7732-18-5:

Oral, rat: LD50 = >90 mL/kg.

CAS# 64-19-7:

Inhalation, mouse: LC50 = 5620 ppm/1H

Oral, rat: LD50 = 3310 mg/kg

Skin, rabbit: LD50 = 1060 mg/kg.

CAS# 50-00-0:

Inhalation, mouse: LC50 = 400 mg/m<sup>3</sup>/2H

Inhalation, rat: LC50 = 203 mg/m<sup>3</sup>

Oral, mouse: LD50 = 42 mg/kg

Oral, rat: LD50 = 100 mg/kg

Skin, rabbit: LD50 = 270 mg/kg.

CAS# 88-89-1:

Oral, rat: LD50 = 200 mg/kg.

### Carcinogenicity:

CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 64-19-7: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 50-00-0:

ACGIH: A2 - suspected human carcinogen

California: carcinogen; initial date 1/1/88

NIOSH: occupational carcinogen

NTP: Suspect carcinogen

OSHA: Possible Select carcinogen

IARC: Group 2A carcinogen

CAS# 88-89-1: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

### Epidemiology:

In June 2004 an expert IARC group determined that there is now sufficient evidence that formaldehyde causes nasopharyngeal cancer in humans, a rare cancer in developed countries. An outbreak of hematuria (blood in the urine) among U.S. Navy personnel aboard ships anchored at Wakayama, Japan, in 1946 was attributed to the ingestion of picric acid in drinking water.

### Teratogenicity:

Formaldehyde effects on Newborn: behavioral, ihl-rat TCLo=50 ug/m<sup>3</sup>/4H; biochemical/metabolic and reduced weight gain, ihl-rat TCLo=12 ug/m<sup>3</sup>/24H. Embryo or Fetus: cytological changes, ihl-rat TCLo=1mg/m<sup>3</sup>/24H; stunted fetus and death, ipr-mouse TDLo=240mg/kg. Specific Developmental Abnormalities: craniofacial and musculoskeletal, ipr-mouse TDLo=240 mg/kg Effects on Newborn: behavioral, oral-rat TDLo=700 mg/kg for acetic acid.

### Reproductive:

Formaldehyde effects on fertility: male index, itt-rat TDLo=400 mg/kg; post- implantation mortality, ims-mouse TDLo=259 mg/kg. Paternal Effects: spermatogenesis, oral-rat TDLo=200 mg/kg; testes/sperm duct/epididymis, ipr-rat TDLo=80 mg/kg. Fertility: male index, itt-rat TDLo=400 mg/kg for acetic acid.

### Mutagenicity:

Formaldehyde DNA Damage: human fibroblast 100 umol/L DNA Inhibition: human cell types 210 umol/L Unscheduled DNA Synthesis: rat cell types 50 umol/L Gene Mutation in Mammalian Cells: human lymphocyte 130 umol/L.

### Neurotoxicity:

No information found.



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### Section 12 - Ecological Information

No information found.

### Section 13 - Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

### Section 14 - Transport Information

#### US DOT

**Shipping Name:** Corrosive liquid, acidic, organic, n.o.s.  
(formaldehyde, acetic acid)

**Hazard Class:** 8

**UN Number:** UN3265

**Packing Group:** PG III

### Section 15 - Regulatory Information

#### US Federal

##### TSCA:

CAS# 7732-18-5 is listed on the TSCA Inventory.

CAS# 64-19-7 is listed on the TSCA Inventory.

CAS# 50-00-0 is listed on the TSCA Inventory.

CAS# 67-56-1 is listed on the TSCA Inventory.

CAS# 88-89-1 is listed on the TSCA Inventory.

##### SARA Reportable Quantities (RQ):

CAS# 64-19-7: final RQ = 5000 pounds (2270 kg)

CAS# 50-00-0: final RQ = 100 pounds (45.4 kg)

CAS# 67-56-1: final RQ = 5000 pounds (2270 kg)

##### CERCLA/SARA Section 313:

This material contains Formaldehyde (CAS# 50-00-0, 20%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

This material contains Picric acid (CAS# 88-89-1, 1.3%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

This material contains Methyl alcohol (CAS# 67-56-1, 3.6%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

##### OSHA - Highly Hazardous:

CAS# 50-00-0 is considered highly hazardous by OSHA.

#### US State

##### State Right to Know:

Acetic acid can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Formaldehyde can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.



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Picric acid can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

### **California Regulations:**

WARNING: This product contains Formaldehyde, a chemical known to the state of California to cause cancer.

### **European/International Regulations**

#### **Canadian DSL/NDSL:**

CAS# 7732-18-5 is listed on Canada's DSL List.

CAS# 64-19-7 is listed on Canada's DSL List.

CAS# 50-00-0 is listed on Canada's DSL List.

CAS# 67-56-1 is listed on Canada's DSL List.

CAS# 88-89-1 is listed on Canada's DSL List.

#### **Canada Ingredient Disclosure List:**

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

CAS# 64-19-7 is listed on Canada's Ingredient Disclosure List.

CAS# 50-00-0 is listed on Canada's Ingredient Disclosure List.

CAS# 67-56-1 is listed on Canada's Ingredient Disclosure List.

CAS# 88-89-1 is listed on Canada's Ingredient Disclosure List.

## Section 16 - Other Information

MSDS Creation Date: February 19, 1998

Revision Date: September 18, 2008

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