

## Davidson's Fixative

### 1. Identification

**Product Name:** Davidson's Fixative

**Item #:** FX1041, FXG041

**Synonyms:** N/A

**Recommended Use:** Tissue Fixation

**Restrictions on Use:** N/A

**Manufacturer:**

Cancer Diagnostics, Inc.  
116 Page Point Circle  
Durham, NC 27703  
1-877-846-5393

**In Case of Emergency:**

Chemtrec US 1-800-424-9300  
Infotrac International 1-352-323-3500

### 2. Hazards Identification

**OSHA Hazard Classification(s):**

Acute Toxicity - Inhalation - Category 2  
Acute Toxicity - Oral - Category 4  
Skin Corrosion - Category 2  
Eye Damage - Category 1  
Sensitization - Respiratory - Category 1A  
Sensitization - Skin - Category 1A  
Germ Cell Mutagenicity - Category 1B  
Carcinogenicity - Category 1A  
Specific Target Organ Toxicity (single exposure) - Category 2  
Specific Target Organ Toxicity (repeated exposure) - Category 2  
Flammable Liquids - Category 3

**Signal Word:** Danger

**Hazard Statement(s):** Fatal if inhaled. Harmful if swallowed. Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause genetic defects. May cause cancer. May cause damage to organs (lungs,nose,respiratory system). May cause damage to organs (lungs,nose, respiratory system, CNS, liver, blood) through prolonged or repeated exposure. Flammable liquid and vapor.

**Pictogram(s):**



**Precautionary Statement(s):** Prevention: Do not breathe dust, vapors. Use only outdoors or in a well-ventilated area. In case of inadequate ventilation where IDLH, OSHA STEL or PEL values reached wear NIOSH approved respiratory protection. Wash body thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye protection, face protection. Avoid breathing dust, vapors. Wear NIOSH approved respiratory protection. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing, eye protection and face protection.

Response: If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a doctor. Specific treatment is urgent (see first aid section on this label) If swallowed: Call a doctor if you feel unwell. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a doctor. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical attention. Specific treatment (see first aid section on this label). Take off all contaminated clothing and wash it before reuse. If exposed or concerned: Get medical attention. If exposed or concerned: Call a doctor. Call a doctor if you feel unwell.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents/container in accordance with local regulations.

**Descriptions of Hazards not otherwise classified:** N/A

**Percent of mixture with unknown acute toxicity:** N/A

## Davidson's Fixative

### 3. Composition and Information on Ingredients

Chemical Name	Common Name	CAS #	Concentration %
Ethyl Alcohol		64-17-5	Trade Secret
Methyl Alcohol		67-56-1	Trade Secret
Isopropyl Alcohol		67-63-0	Trade Secret
Formaldehyde		50-00-0	Trade Secret
Glacial Acetic Acid		64-19-7	Trade Secret

### 4. First Aid Measures

**Eye Contact:** Corrosive to eyes, causes permanent damage. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**Skin Contact:** Corrosive to skin, causes chemical burns. If on skin (or hair): Take off immediately all contaminated clothing and wash before reuse. Wash with plenty of water. If skin irritation occurs: Get medical advice/attention.

**Inhalation:** Vapor harmful. Remove to fresh air; give artificial respiration if breathing has stopped. Get medical advice/attention if you feel unwell.

**Ingestion:** Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

**Symptoms:** Irritation eyes, nose, throat, lungs; headache, dizziness, unconsciousness, asphyxiation. . Depression of central nervous system. Burns to eyes and skin. Ingestion may cause blindness. Formaldehyde causes respiratory and skin sensitization such as asthma. Pre-existing respiratory and skin disorders may be aggravated by exposure. May cause lung, kidney, or liver damage.

**Recommendations for immediate medical care/special treatment:** Get medical advice/attention if you feel unwell.

### 5. Fire- Fighting Measures

**Extinguishing Media:** Dry chemical, carbon dioxide, alcohol foam, water. Use water spray to cool fire-exposed containers and disperse vapors.

**Fire Hazards (Chemical):** OSHA classified Flammable Liquid Category 3

**Special Protective Equipment:** Fire fighters should use self-contained breathing apparatus and protective clothing.

**Precautions for Firefighters:** Carbon monoxide and unidentified organic compounds may be formed during combustion. Vapors can travel distances to ignition source and flash back. Cool fire exposed containers with water. Fine mist or spray may be flammable at temperatures below the flash point. When heated above the flash point this material emits flammable vapors which, when mixed with air, can burn or be explosive.

### 6. Accidental Release Measures

**Emergency Procedures:** Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all sources of ignition and provide ventilation.

**Protective Equipment:** See section 8

**Environmental Precautions:** Prevent release to the environment by using barriers.

**Containment and Clean-Up Procedures:** Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

### 7. Handling and Storage

**Handling:** Do not breathe vapors. Do not eat, drink or smoke when using this product. Keep away from heat, sparks, open flames, hot surfaces. Keep container tightly closed. Ground/Bond container and receiving equipment. Use explosion-proof electrical, ventilating, and lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

**Storage:** Store in a well-ventilated place. Keep container tightly closed. Store locked up.

### 8. Exposure Controls/Personal Protection

**OSHA Permissible Exposure Limits (PELs):**

Reagent	CAS #	OSHA PEL TWA

## Davidson's Fixative

Ethyl Alcohol	50-00-0	0.75ppm
Methyl Alcohol	67-56-1	200ppm
Isopropyl Alcohol	67-63-0	400ppm
Ethyl Alcohol	64-17-5	1000ppm
Glacial Acetic Acid	64-19-7	10ppm

### ACGIH Threshold Limit Values (TLVs):

Reagent	CAS #	ACGIH PEL TLV	ACGIH STEL
Formaldehyde	50-00-0	0.3ppm (0.37mg/m <sup>3</sup> ) Ceiling	
Methyl Alcohol	67-56-1	200ppm	250ppm
Isopropyl Alcohol	67-63-0	200ppm	400ppm
Ethyl Alcohol	64-17-5	1000ppm	1000ppm
Glacial Acetic Acid	64-19-7	10ppm	15ppm

**Engineering Controls:** Use in a well ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

**Personal Protective Measures:** Wear gloves, lab coat, eye protection and impervious footwear. Contact lenses should not be worn when working with this material.

**Special PPE Requirements:** If ventilation hood not available wear respirator.

## 9. Physical and Chemical Properties Section

**Appearance:** Colorless, Liquid

**Molecular Weight:** N/A

**Molecular Formula:** N/A

**pH:** N/A

**Boiling Point and Boiling Range:** N/A

**Melting Point/Freezing Point:** N/A

**Flash Point:** 84°F

**Specific Gravity/Relative Density:** NA

**Odor:** Pungent odor

**Odor Threshold:** N/A

**Color:** Colorless

**Flammability (solid/gas):** N/A

**Vapor Density:** N/A

**Upper/Lower flammability or explosive limits:** N/A

**Vapor Pressure:** N/A

**Evaporation Rate:** N/A

**Partition Coefficient: n-octanol/water:** N/A

**Viscosity:** N/A

**Auto-ignition temperature:** N/A

**Solubility:** Miscible in water

**Decomposition Temperature:** N/A

## 10. Stability and Reactivity

**Reactivity:** N/A

**Chemical Stability:** Stable

**Conditions of Stability/Instability:** N/A

## Davidson's Fixative

**Stabilizers needed:** None

**Safety issue indicated by appearance change:** N/A

**Other:** N/A

**Hazardous Reactions:** N/A

**Hazardous Polymerization:** Does not occur

**Conditions to avoid:** N/A

**Classes of Incompatible Materials:** Oxidizers, Strong Acids, Strong Bases

**Hazardous Decomposition Products:** Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapors (I.e. Carbon monoxide) may be released in a fire.

### 11. Toxicological Information

#### Likely Routes of Exposure

**Eyes:** Formaldehyde solution splashed in the eye can cause injuries ranging from transient discomfort to severe, permanent corneal clouding and loss of vision. The severity of the effect depends on the concentration of formaldehyde in the solution and whether or not the eyes are flushed with water immediately after the accident.

**Skin:** Formaldehyde is a severe skin irritant and sensitizer. Contact with formalin causes white discoloration, smarting, drying, cracking and scaling. Prolonged and repeated contact can cause numbness and hardening or tanning of the skin. Previously exposed persons may react to future exposure with an allergic eczema dermatitis or hives.

**Inhalation:** Formaldehyde is highly irritating to the upper respiratory tract and eyes. Concentrations of 0.5 to 2.0ppm may irritate the eyes, nose and throat of some individuals. Concentrations of 3 to 5ppm also cause tearing of the eyes and are intolerable to some persons. concentration of 100ppm is immediately dangerous to life and health. Deaths from accidental exposure to high concentrations of formaldehyde have been reported.

**Ingestion:** If the victim is conscious; dilute, inactivate or absorb the ingested formaldehyde by giving milk, activated charcoal or water. Any organic material will inactivate formaldehyde. Keep affected person warm and at rest. Get medical attention immediately. if vomiting occurs keep head lower than hips.

**Signs or Symptoms of Exposure:** Irritation to eyes, nose, throat; headache; dizziness. See above for more information. Nausea. Note: The percent of formaldehyde by odor and eye irritation becomes less sensitive with time as one adapts to a formaldehyde. This can lead to overexposure if a worker is relying on formaldehyde's warning properties to alert him or her to the potential for exposure.

**Effects from short term exposure (delayed, immediate, chronic):** Irritation to the eyes, nose, throat; headache, dizziness, nausea. May cause cancer, mutagenic and reproductive effects. may effect organs after single or repeat exposure.

**Acute Toxicity (Numerical Measures):** Formaldehyde CAS 50-00-0: LD50 385 mg/kg (oral, mouse); LD50 100 mg/kg (oral, rat); LC50 200 mg/m<sup>3</sup> (inh, rat); LC50 454 mg/m<sup>3</sup>/4H (inh, mouse)

**Carcinogenicity (NTP, IARC, OSHA):** Contains Formaldehyde IARC Group 1 Carcinogen associated with nasal sinus cancer, nasopharyngeal cancer, myeloid leukemia.

### 12. Ecological Information

**Ecotoxicity:**

**Persistence and degradability:**

**Bioaccumulation Potential (octanol-water partition coefficient, BCF):**

**Mobility in the soil:**

**Adverse Environmental Effects:**

### 13. Disposal Considerations

**Recommended Disposal Containers:** Check with your local waste authorities\*

**Recommended Disposal Methods:** Do not dispose of in drains, check with your local waste authorities.\*

**Physical/Chemical Properties affecting Disposal:** See section 2 and section 9 applicable information.\*

**Special Precautions for Landfill and Incineration Activities:** Check with your local waste authorities.\*

**Waste Stream:** Consult your local or regional authorities.\*

### 14. Transport Information

## Davidson's Fixative

**UN Number:** UN2924  
**UN Proper Shipping Name:** Flammable Liquids, Corrosive, n.o.s., (Ethanol and Formaldehyde)  
**Transport Hazard Class(es):** 3, (8)  
**Packing Group Number:** II  
**Environmental Hazards (IMDG code):**  
**Marine Pollutant:** No  
**Transport in Bulk (IBC Code):** N/A  
**Special Transport Precautions:** N/A

### 15. Regulatory Information

**OSHA:**  
**DOT:**  
**EPA:**  
**CPSC:**

### 16. Other Information

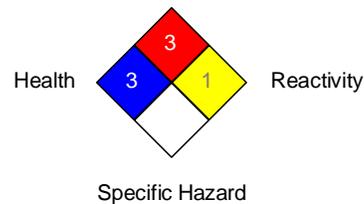
**Revision Date:** 2019-01-11

#### NFPA

Health	3
Fire Hazard	3
Reactivity	1
Specific Hazard	

National Fire Protection Association (USA) NFPA

Fire Hazard



#### HMIS

Health	3
Flammability	3
Physical Hazard	1
Personal Protection	

Hazardous Material Information System HMIS

Health	3
Flammability	3
Physical Hazard	1
Personal Protection	

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