

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Davidson's Fixative

SYNONYMS: None

PRODUCT CODES: ES34046

MANUFACTURER: Azer Scientific, Inc.

ADDRESS: 701 Hemlock Rd, Morgantown, PA 19543

CHEMTREC PHONE: 800-424-9300

SUPPORT: 610-524-5810

FAX: 610-901-3046

PRODUCT USE: Tissue Fixative

PREPARED BY: CB

SECTION 1 NOTES:

SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION: Flammable Liquid Category 3, Eye irritation Category 1, Skin Irritation Category 1, Acute toxicity, Oral, Category 3; Carcinogenicity Category 1B; Specific Target Organ Toxicity Category 3; Corrosive to Metals Category 1



Signal Word: Danger!

Hazard Phrases	
H226	Flammable liquid and vapor.
H314	Causes severe skin burns and eye damage.
H350	May cause cancer.
H301	Toxic if swallowed.
H370	Causes damage to organs.
H290	May be corrosive to metals.

Precautionary Phrases	
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.
P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P264	Wash hands thoroughly after handling.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P307+P311	IF exposed: Call a POISON CENTER or doctor/ physician.

SECTION 2 NOTES:

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT:

CAS NO.

% WT

Ethanol	64-17-5		≤10
Methanol	67-56-1	2-4	
Isopropyl Alcohol	67-63-0	≤2	
Formaldehyde	50-00-0		3-5
Glacial Acetic Acid	64-19-7	≤5	
Water	7732-18-5		balance

SECTION 3 NOTES:
SECTION 4: FIRST AID MEASURES

EYES: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

SKIN: In case of contact, flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If skin irritation occurs: Get medical attention/advice.

INGESTION: Call medical doctor or poison control center immediately. Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms persist.

SECTION 4 NOTES:
SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABILITY OF THE PRODUCT: Mixture is a flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst with the risk of a subsequent explosion. Run-off to sewer may create fire or explosion hazard.

FLASH POINT: Not available

AUTOIGNITION TEMPERATURE: Not available

NFPA HAZARD CLASSIFICATION

HEALTH: 2 FLAMMABILITY: 2 REACTIVITY: 0
OTHER:

HMIS HAZARD CLASSIFICATION

HEALTH: 2 FLAMMABILITY: 2 REACTIVITY: 0
PROTECTION:

EXTINGUISHING MEDIA: Small fire – use DRY chemical powder. Large fire – use alcohol resistant foam, water spray or fog.

NOT SUITABLE: Do not use water jet.

SPECIAL FIRE FIGHTING PROCEDURES: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: Strong vapors and irritants, carbon monoxide, carbon dioxide

SECTION 5 NOTES:
SECTION 6: ACCIDENTAL RELEASE MEASURES
ACCIDENTAL RELEASE MEASURES:

Small spill and leak: Dilute with water and mop, or absorb with an inert dry material and place in appropriate waste disposal container.

Large spill and leak: Keep away from heat and ignition sources. Stop leak if without risk. Absorb with DRY earth, sand, or other non-combustible material. Avoid skin and eye contact. Prevent entry into sewers, basements or confined areas; dike if needed. Ensure airborne concentrations of formaldehyde do not exceed published exposure limits. Additional protective equipment such as full-face respirator, full body suit and boots may be required. **If airborne concentrations of formaldehyde exceed 7.5 ppm, only use SCBA or supplied air respirators.**

SECTION 6 NOTES:
SECTION 7: HANDLING AND STORAGE

HANDLING: Avoid contact with eyes and skin. Do not breathe vapor or mist. Avoid prolonged or repeated contact with skin. If potential for splashing exists, protect skin by using sleeve protectors, aprons and face-shield. Immediately remove contaminated clothing. Wash thoroughly after handling.

STORAGE: Keep containers closed and out of reach of children. Ground all equipment containing material. Store at room temperature.

SECTION 7 NOTES:

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING CONTROLS: General mechanical ventilation or laboratory fume hood. Ensure that eyewash stations and quick drench showers are close to the workstation.

PERSONAL PROTECTIVE MEASURES: Wear gloves, lab coat, eye protection and impervious footwear. Approved/certified respirator if airborne concentrations exceed exposure limits.

ENVIRONMENTAL EXPOSURE CONTROLS: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

WORK HYGIENIC PRACTICES: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

EXPOSURE GUIDELINES:

OSHA Permissible Exposure Limits (PELs):

Reagent	CAS#	OSHA PEL TWA
Formaldehyde	50-00-0	0.75 ppm (Ceiling)
Methyl Alcohol	67-56-1	200ppm (260 mg/m ³)
Ethyl Alcohol	64-17-5	1000 ppm
Isopropyl Alcohol	67-63-0	400ppm (980 mg/m ³)
Acetic Acid	64-19-7	10 ppm (25 mg/m ³)

ACGIH Threshold Limit values (TLVs):

Reagent	CAS#	ACGIH PEL TWA	ACGIH STEL
Formaldehyde	50-00-0	0.3 ppm (Ceiling)	2 ppm
Methyl Alcohol	67-56-1	200ppm (260 mg/m ³)	250ppm (328 mg/m ³)
Ethyl Alcohol	64-17-5	1000 ppm	1000 ppm
Isopropyl Alcohol	67-63-0	200ppm	400ppm (980 mg/m ³)
Acetic Acid	64-19-7	10 ppm	15 ppm (37 mg/m ³)

SECTION 8 NOTES:

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear

ODOR: Pungent

PHYSICAL STATE: liquid

pH AS SUPPLIED: 2.5

BOILING POINT: Not available

MELTING POINT/FREEZING POINT: Not available

VAPOR PRESSURE (mmHg): Not available

VAPOR DENSITY (AIR = 1): Not available

EVAPORATION RATE: Not available

SOLUBILITY IN WATER: Soluble in water

MOLECULAR WEIGHT: Mixture

VISCOSITY: Not established

SECTION 9 NOTES:

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Product is stable under normal conditions of use.

CONDITIONS TO AVOID (STABILITY): Avoid heat, sparks, flames, and all other sources of ignition.

INCOMPATIBILITY (MATERIAL TO AVOID): Oxidizers, platinum, Sodium, Potassium Dioxide, Bromine, Pentafluoride, Acetyl Bromide, Acetyl Chloride

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: oxides of carbon.

HAZARDOUS POLYMERIZATION: No hazardous polymerization

CONDITIONS TO AVOID: Heat, open flame

SECTION 10 NOTES:

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Oral: Methyl Alcohol: LD50 (oral, mouse) = 0.4 g/kg, LD50 (oral, rat) = 6.2-13 g/kg LD50 (oral, rabbit) = 14.4 g/kg

Formaldehyde: LD50 (Oral, mouse) = 42 mg/kg LD50 (Oral, rat) = 100 mg/kg

Ethyl alcohol: LC50 (Oral, rat) = 7060 mg/kg BWT, LDlo (Oral, human) = 1400mg/kg BWT

Isopropyl alcohol: LD50 (oral, rat) = 5,045 mg/kg

Acetic Acid LD50 Oral 3,310 mg/kg

Inhalation: Formaldehyde: LC50 (Inhalation, mouse) = 454 mg/m³/4H

Ethyl Alcohol: LC50 (Inhalation, rat) = 20,000 ppm, 10hrs

Methyl Alcohol: LC50 (Inhalation, rat) = 128.2 mg/l 4 hrs; LC50 (Inhalation, rat) = 87.6 mg/l 6 hrs.

Isopropyl Alcohol: LC50 (Inhalation, rat) = 87.6 mg/k 8 hrs.

Acetic Acid LC50 Rat 11.4 mg/l/4hr

Dermal: Methyl Alcohol: Rabbit LD50 20 ml/kg

Isopropyl Alcohol: Rabbit LD50 =12,800 mg/kg

Acetic Acid LD50 Rabbit 1,060 µl/kg

Skin corrosion/irritation: Formaldehyde: Draize test, rabbit, skin: 2 mg/24H Severe

Ethyl Alcohol: Draize test, rabbit, skin: 20 mg/24H Moderate

Eyes: Formaldehyde: Draize test, rabbit, eye: 750 ug/24H Severe

Ethyl alcohol: Draize test, rabbit, eye: 500 mg/24H Reaction - Mild Rabbit, eye: 500 mg Reaction – Severe

Respiratory or skin sensitization: Isopropyl alcohol: Rabbit = Mild skin irritation

Germ cell mutagenicity: No data available

Carcinogenicity: (NTP, IARC, OSHA):

Formaldehyde: NIOSH: Classified proven **ACGIH:** Classified A2(suspected for human)

NTP: Classified 2(Reasonably anticipated) **IARC:** Classified A2(Probable for human)

Methanol: Not classified as a human carcinogen.

Ethanol: Not classified as a human carcinogen

Acetic Acid: Not classified as a human carcinogen

Isopropyl Alcohol: Not classified as a human carcinogen

Aspiration hazard: no data available

POTENTIAL HEALTH EFFECTS

EYES: Hazardous in case of eye contact (irritant). May cause chemical conjunctivitis or corneal damage.

SKIN: Hazardous in case of skin contact (irritant, corrosive, sensitizer). May cause skin sensitization which becomes evident upon re-exposure. Skin inflammation is characterized by itching, scaling, reddening or occasionally blistering.

INGESTION: May be toxic if swallowed. May cause burns to mouth, throat and stomach.

INHALATION: Hazardous in case of inhalation (lung irritant and sensitizer). Inhalation of spray mist may produce severe irritation of respiratory tract characterized by coughing, choking or shortness of breath. May cause asthmatic attacks due to allergic sensitization.

CHRONIC HEALTH HAZARDS: Effects may be delayed. Formaldehyde has been associated with nasopharyngeal cancers. Repeated exposure may cause skin discoloration and nail decay. Inhalation may worsen conditions such as emphysema or bronchitis. Repeated skin exposure may cause defatting of the skin.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Dermatitis, emphysema, bronchitis and conjunctivitis.

SIGNS AND SYMPTOMS OF EXPOSURE: Irritation eyes, skin, nose, mucous membrane; headache, dermatitis

ROUTES OF ENTRY: Skin/eye contact, inhalation

TARGET ORGANS: Respiratory system, Central nervous system, GI system

SECTION 11 NOTES:

DANGER! CONTAINS FORMALDEHYDE – POTENTIAL CANCER HAZARD. REPEATED OR PROLONGED EXPOSURE INCREASES RISK. HIGHLY TOXIC BY INHALATION AND IF SWALLOWED. IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN. MAY CAUSE SENSITIZATION BY INHALATION OR SKIN CONTACT. RISK OF ACUTE DAMAGE TO EYES. KEEP CONTAINER CLOSED, USE WITH ADEQUATE VENTILLATION. TARGET ORGANS: SKIN, EYES, RESPIRATORY TRACT. FOR LABORATORY USE ONLY.

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL TOXICITY:

Formaldehyde 50-00-0: LC50 Pimephales promelas (Fathead minnow) 24.1 mg/L/96 hr

Ethyl Alcohol 64-17-5

Acute Fish Toxicity:

LC50 / 96 HOUR Oncorhynchus mykiss (rainbow trout) >10,000 mg/l

LC50 / 96 HOUR Pimephales promelas (fathead minnow) > 13,400 mg/l

Toxicity to Aquatic Plants:

Growth Inhibition / 96 HOURS Chlorella vulgaris (fresh water algae) 1,000 mg/l

Toxicity to microorganisms:

Toxicity Threshold / Pseudomonas putida 6,500 mg/l Summary: Inhibition of cell multiplication begins.

Methyl Alcohol 67-56-1

Acute Fish Toxicity:

LC50 / 96 hours Lepomis macrochirus: 15,400 mg/L / LC50 / 96 hours Fathead minnow: 29,400 mg/L

Toxic to Daphnia and Other Aquatic Invertebrates:

EC50 / 48 h / Water Flea – >10,000.00 mg/L

Toxicity to Aquatic Plants:

EC50 / 96 hours Scenedesmus capricornutum 22,000 mg/L

Acetic Acid 64-19-7

LC50 Pimphales promelas Exposure time 96 hr 79mg/l

EC50 Daphnia magna Exposure time 48 hr 65mg/l

PERSISTENCE AND DEGRADABILITY: Biodegradation is expected

BIOACCUMULATIVE POTENTIAL: Bioaccumulation is unlikely.

MOBILITY IN SOIL: No data available

PBT and vPvB ASSESSMENT: Not required.

SECTION 12 NOTES:

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Unused product: dispose as a regulated hazardous waste. Spent product or spill clean up-follow all provincial, local, state, and federal regulations.

SECTION 13 NOTES:

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION:

UN No. UN2924

Proper Shipping Name: Flammable Liquids, Corrosive, n.o.s. (Ethanol, formaldehyde)

Hazard Class: 3

Packing Group: III

Label Statement: Flammable liquid

IMDG

UN No. UN2924

Proper Shipping Name: Flammable Liquids, Corrosive, n.o.s. (Ethanol, formaldehyde)

Hazard Class: 3

Packing Group: III

Label Statement: Flammable liquid

Marine pollutant: No

IATA

UN No. UN2924

Proper Shipping Name: Flammable Liquids, Corrosive, n.o.s. (Ethanol, formaldehyde)

Hazard Class: 3

Packing Group: III

Label Statement: Flammable liquid

SECTION 15: REGULATORY INFORMATION

United States

HCS Classification: Toxic material, Irritating material, Target organ effects, Corrosive

U.S. Federal regulations:

TSCA 8(a) IUR: Listed on inventory.

United States inventory (TSCA 8b): Listed on inventory.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: No products were found.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

METHANOL (CAS# 67-56-1) FORMALDEHYDE (CAS# 50-00-0) ACETIC ACID (CAS#64-19-7

Acute Health Hazard; Chronic Health Hazard; Corrosive

SARA 313 Form R – Reporting: The following components are subject to reporting levels established

by SARA Title III, Section 313: METHANOL (CAS# 67-56-1) FORMALDEHYDE (CAS# 50-00-0)

ACETIC ACID (CAS#64-19-7

DEA List I & II Chemicals

(Precursor Chemicals):

Not Listed

CERCLA: Methanol CAS-No. 67-56-1. RQ: 5,000 lbs; The RQ for the product (based on the RQ for Formaldehyde (6% maximum) of 100 lbs, is 1,666 lbs. Acetic Acid (CAS # 64-19-7): 5000 lb. final RQ Report spills required under federal, state, and local regulations.

RTK STATES: Methyl Alcohol CAS 67-56-1 CT, MA, NJ, PA, RI Formaldehyde CAS 50-00-0 CA, NJ, PA, MN, MA

Acetic Acid CAS# 64-19-7 PA, MA, NJ, RI

California Prop. 65



WARNING: This product can expose you to chemicals including Formaldehyde and Methanol, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

CANADA

WHMIS (Canada):

Class D1: Materials causing immediate and serious toxic effects.

Class D2-A: Very toxic material

Class E: Corrosive material

Canadian lists:

CEPA Toxic substances: The following components are listed: Formaldehyde

Canadian ARET: None of the components are listed.

Canadian NPRI: The following components are listed: Formaldehyde, Methanol

Volatile organic compounds

CEPA DSL / CEPA NDSL:

All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

International lists:

Australia inventory (AICS): All components are listed or exempted.

China inventory (IECSC): All components are listed or exempted.

Japan inventory: All components are listed or exempted.

Korea inventory: All components are listed or exempted.

New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.

Philippines inventory (PICCS): All components are listed or exempted.

SECTION 16: OTHER INFORMATION

National Fire Protection Association (NFPA)



DISCLAIMER: This Safety Data Sheet has been prepared in accordance with the Globally Harmonized System for the Classification and Labelling of Chemicals (GHS). To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries makes any warranty of merchantability or any other warranty, expressed or implied, which respect to such information, and we assume no liability resulting from its use. In no event shall Azer Scientific 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 resulting from use of or reliance upon this information.

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