

Safety Data Sheet

MODIFIED DAVIDSON'S FIXATIVE II

Section 1 - Chemical Product and Company Identification

SDS Name: Modified Davidson's Fixative II

Catalog Numbers: SO-845, F-89

Company Identification: ROWLEY BIOCHEMICAL
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

HEALTH HAZARDS

H300-Acute Oral Toxicity: 2

H310-Acute Toxicity, dermal: 1

H330-Acute Inhalation toxicity: 2

H314-Skin Corrosion/Skin Irritation: 1C

H318-Eye damage/Irritation: 1

H334-Respiratory Sensitization: 1B

H317-Skin Dermal Sensitization: 1B

H340-Germ Cell Mutagenicity: 1

H350-Carcinogenicity: 1

H360-Reproductive Toxicity: 1

H370-Specific Target Organ Toxicity, single exposure: 1

H372- Specific Target Organ Toxicity, repeated exposure: 1

PHYSICAL HAZARDS

H225-Flammability: 2

H290-Corrosive to Metals: 1

ENVIRONMENTAL HAZARDS

H410-Aquatic acute environmental Hazards: 1

Pictograms or Hazard symbols and Hazard statement.



Signal Word: Danger

Fatal if swallowed.

Fatal if inhaled.

Causes severe skin burns and eye damage.

Causes serious eye damage.

May cause genetic defects.

May damage fertility or the unborn child.

Causes damage to organs.

Causes damage to organs through prolonged or repeated exposure.

May cause cancer.

Fatal in contact with skin.

May be corrosive to metals.

Very toxic to aquatic life.

Highly flammable liquid and vapor.

May cause allergic skin reaction.

Precautionary Statements

H300

P264 Wash thoroughly after handling.

P270 Do not eat, drink, or smoke when using this product.

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor.

P330 **Rinse Mouth.**

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

H330

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P284 Wear respiratory protection.

P304 + P340 If inhaled, remove person to fresh air and keep comfortable for breathing.

P310 Immediately call a Poison Center or doctor.

P320 Specific treatment is urgent (wash areas of contact with water.)

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.

H314

P260 Do not breathe dusts, fumes or mists.

P264 Wash arms, hands, and face thoroughly after handling.

P280 Wear protective gloves, clothing, and eye and face protection.

P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P363 Wash contaminated clothing before reuse.

P304+P340 If Inhaled: remove person to fresh air and keep comfortable for breathing.

P310 Immediately call a Poison Center or doctor.

P321 Specific treatment (wash areas of contact with 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.

H318

P280 Wear eye protection/face protection.

P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

H334

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P284 Wear respiratory protection.

P304+P340 If Inhaled: remove person to fresh air and keep comfortable for breathing.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

H317

P272 Contaminated work clothing should not be allowed out of the work place.

P333+P313 IF ON SKIN: Wash with plenty of soap and water.

P363 Wash contaminated clothing before reuse.

H340

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P308 + P313 If exposed or concerned, get medical advice/attention.

P405 Store locked up.

H350+H360

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P281 Use personal protective equipment as required.

P308 + P313 If exposed or concerned, get medical advice/attention.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

H370

P260 Do not breathe dusts, fumes or mists.

P264 Wash arms, hands, and face thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P307+P311 If exposed: Call a Poison Center or doctor/physician.

P321 Specific treatment (wash areas of contact with water).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

H372

P260 Do not breathe dusts, fumes or mists.

P264 Wash arms, hands, and face thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P314 Get medical advice/attention if you feel unwell.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

H225

P210 Keep away from heat, flames, and hot surfaces. No smoking.

P233 Keep container tightly closed.

P241 Use explosive-proof equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P303 + P361 + P353 If on skin (or hair) take off immediately all contaminated clothing. Rinse skin with water.

P370 + P378 In case of fire use to extinguish.

P403 + P235 Store in a well-ventilated place. Keep cool.

H290

P234-Keep only in original container.

P390-Absorb spillage to prevent material damage.

P406-Store in corrosive resistant/container with a resistant inner liner

H410

P273 Avoid release to the environment.

P391 Collect spillage.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent
64-17-5	Ethyl alcohol	12.6 v/v
67-56-1	Methyl alcohol	6.3 v/v
50-00-0	Formaldehyde	14.4 v/v
64-19-7	Glacial Acetic Acid	6.3 v/v
7732-18-5	Water	v/v

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. Call a physician.

Dermal Exposure: In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes.

Oral Exposure: If Swallowing seek immediate medical advice.

Inhalation Exposure: If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

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.

NFPA Rating: (estimated) Health: 4; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s):

Wear protective gear. Eliminates all sources of ignition.

Methods for Cleaning up: Absorb with sand, earth or vermiculite. Carefully sweep up and containerize for proper disposal.

Section 7 - Handling and Storage

Use care when handling. Wash thoroughly after handling. Store capped at room temperature. Keep away from incompatible materials. Protect from heat. 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.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
---------------	-------	-------	-------------------

Ethanol	1000 ppm TWA	1000 ppm TWA; 1900 mg/m ³ TWA 3300 ppm IDLH	1000 ppm TWA; 1900 mg/m ³ TWA
Formaldehyde	A2 Carcinogenic effects. 0.3 ppm	200 ppm TWA	200 ppm

OSHA Vacated PELs: Ethanol: 1000 ppm TWA; 1900 mg/m³ TWA

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.

Section 9 - Physical and Chemical Properties

Physical State: Solution

Appearance: clear

Odor: Alcohol-like

pH: 2.40 (+/- 0.1)

Vapor Pressure: N/A

Vapor Density: N/A

Evaporation Rate: N/A

Viscosity: N/A

Boiling Point: 78 deg C

Solubility: Soluble

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, ignition sources, excess heat, oxidizers.

Incompatibilities with Other Materials: Strong oxidizing agents, acids, alkali metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium-tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, potassium dioxide.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 64-17-5: KQ6300000

LD50/LC50:

CAS# 64-17-5:

Draize test, rabbit, eye: 500 mg Severe.
Draize test, rabbit, eye: 500 mg/24H Mild.
Draize test, rabbit, skin: 20 mg/24H Moderate.
Inhalation, mouse: LC50 = 39 gm/m³/4H.
Inhalation, rat: LC50 = 20000 ppm/10H.
Oral, mouse: LD50 = 3450 mg/kg.
Oral, rabbit: LD50 = 6300 mg/kg.
Oral, rat: LD50 = 7060 mg/kg.
Oral, rat: LD50 = 9000 mg/kg; <BR.

CAS# 50-00-0

Mouse oral: 260 mg/kg
Rabbit skin: 64000/ 4 H
Mouse inhalation: 64000/ 8 hours.

Solution Carcinogenicity:

Formaldehyde is listed by ACGIH, IARC : Group 1 (Carcinogenic to humans), NTP and CA Prop 65.

RTECS#:**LD50/LC50:**

CAS# 64-19-7:

Oral rat LD50: 3310 mg/kg.
Skin: rabbit LD50: 1.06 g/kg
Inhalation mouse LC50: 5620 ppm/1-hr; investigated as a mutagen, reproductive effector.

Carcinogenicity:

CAS# 64-19-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the "fetal alcohol syndrome".

Teratogenicity: Oral, Human - woman: TDLo = 41 gm/kg (female 41 week(s) after conception) Effects on Newborn - Apgar score (human only) and Effects on Newborn - other neonatal measures or effects and Effects on Newborn - drug dependence.

Reproductive Effects: Intrauterine, Human - woman: TDLo = 200 mg/kg (female 5 day(s) pre-mating) Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated).

Neurotoxicity: No information available.

Mutagenicity: DNA Inhibition: Human, Lymphocyte = 220 mmol/L.; Cytogenetic Analysis: Human, Lymphocyte = 1160 gm/L.; Cytogenetic Analysis: Human, Fibroblast = 12000 ppm.; Cytogenetic Analysis: Human, Leukocyte = 1 pph/72H (Continuous).; Sister Chromatid Exchange: Human, Lymphocyte = 500 ppm/72H (Continuous).

Other Studies: Standard Draize Test(Skin, rabbit) = 20 mg/24H (Moderate) Standard Draize Test: Administration into the eye (rabbit) = 500 mg (Severe).

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C Fish: Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified) Bacteria: Phytobacterium phosphoreum: EC50 = 34900 mg/L; 5-30 min; Microtox test When spilled on land it is apt to volatilize, biodegrade, and leach into the ground water, but no data on the rates of these processes could be found. Its fate in ground water is unknown. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.

Environmental: When released to the atmosphere it will photo degrade in hours (polluted urban atmosphere) to an estimated range of 4 to 6 days in less polluted areas. Rainout should be significant.

Physical: No information available.

Other: No information available.

Section 13 - Disposal Considerations

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

Section 14 – Transport Information

DOT

Proper shipping name: Alcohols , N.O.S.

UN1987

PG III

Hazard class 3

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 MSDS contains all the information required by the CPR.

California Prop 65

WARNING: Ethanol, is a chemical known to the state of California to cause developmental reproductive toxicity. Formaldehyde, is a chemical known to the state of California to cause cancer.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

F

Risk Phrases:

R 11 Highly flammable.

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed

R36/38 Irritating to eyes and skin

R51 Toxic to aquatic organisms

R61 May cause harm to the unborn child

Safety Phrases:

S20/21 When using do not eat, drink or smoke

S2 Keep out of the reach of children

S 16 Keep away from sources of ignition - No smoking.

S 33 Take precautionary measures against static discharges.

S 7 Keep container tightly closed.

S 9 Keep container in a well-ventilated place

Section 16 - Additional Information

MSDS Creation Date: 10/30/17

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Rowley Biochemical, Inc. 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, howsoever arising, even if Rowley Biochemical, Inc. has been advised of the possibility of such damages.