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Material Safety Data Sheet Formaldehyde Solution 10%/Formalin 10

ACC# 41130

Section 1 - Chemical Product and Company Identification

MSDS Name: Formaldehyde Solution 10%/Formalin 10
Catalog Numbers: S80018-1, S800181MF, S800182MF, S80018MF, SF96 20, SF9620, SF98 20, SF98 4, SF9820, SF984
Synonyms:
Company Identification:
 Fisher Scientific
 1 Reagent Lane
 Fairlawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
50-00-0	Formaldehyde	3.9-9.8	200-001-8
67-56-1	Methyl alcohol	1.6-4.0	200-659-6
7732-18-5	Water	86.2-93.	231-791-2
Not avail.	Odor mask	0.0-1.1	unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: not available. **Danger!** Causes respiratory tract irritation. Causes skin irritation. Causes eye irritation. May cause allergic skin

reaction. This substance has caused adverse reproductive and fetal effects in animals. May cause central nervous system depression. Causes digestive tract irritation. May cause blindness if swallowed. Cannot be made non-poisonous. May cause liver and kidney damage. Contains formaldehyde. Respiratory sensitizer Potential cancer hazard.

Target Organs: Kidneys, central nervous system, liver.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

Ingestion: May be fatal or cause blindness if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. May cause central nervous system depression.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause asthmatic attacks due to allergic sensitization of the respiratory tract.

Chronic: Repeated exposure may cause skin discoloration and thickening and nail decay. Repeated inhalation is associated with nasal and nasopharyngeal cancer.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed.

Skin: Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Antidote: No specific antidote exists.

Section 5 - Firefighting 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. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Vapors can travel to a source of ignition and flash back. Combustible Liquid. Can form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool.

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

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

NFPA Rating: Not published. Explosion Limits, Lower: Not available. Upper: Not available.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Remove all sources of ignition. Absorb spill using an absorbent,

non-combustible material such as earth, sand, or vermiculite.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well ventilated area. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: 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
Formaldehyde	C 0.3 ppm; C 0.37 mg/m ³	0.016 ppm TWA; NIOSH Potential Occupational Carcinogen - see Appendix A Potential NIOSH carcinogen.	0.75 ppm TWA PEL; 2 ppm STEL; 0.5 ppm TWA action level
Methyl alcohol	200 ppm ; 262 mg/m ³ ; 250 ppm STEL; 328 mg/m ³ STEL; skin - potential for cutaneous absorption	200 ppm TWA; 260 mg/m ³ TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m ³ TWA
Water	none listed	none listed	none listed

OSHA Vacated PELs: Formaldehyde: 3 ppm TWA (unless specified in 1910.1048) Methyl alcohol: 200 ppm TWA; 260 mg/m³ TWA Water: No OSHA Vacated PELs are listed for this chemical.

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: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: not available

Odor: None reported

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate:

Viscosity: Not available.
Boiling Point: 212 deg F
Freezing/Melting Point: 32 deg F
Decomposition Temperature: Not available.
Solubility: soluble in water
Specific Gravity/Density: Not available.
Molecular Formula: Mixture
Molecular Weight:

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Oxidizers.
Incompatibilities with Other Materials: None reported.
Hazardous Decomposition Products: Carbon monoxide, oxides of phosphorus, irritating and toxic fumes and gases, carbon dioxide, toxic fumes of sodium oxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 50-00-0: LP8925000

CAS# 67-56-1: PC1400000

CAS# 7732-18-5: ZC0110000

LD50/LC50:

CAS# 50-00-0:

Inhalation, mouse: LC50 = 400 mg/m³/2H;

Inhalation, rat: LC50 = 203 mg/m³;

Oral, mouse: LD50 = 42 mg/kg;

Oral, rat: LD50 = 100 mg/kg;

Skin, rabbit: LD50 = 270 mg/kg;

CAS# 67-56-1:

Inhalation, rat: LC50 = 64000 ppm/4H;

Oral, mouse: LD50 = 7300 mg/kg;

Oral, rabbit: LD50 = 14200 mg/kg;

Oral, rat: LD50 = 5628 mg/kg;

Skin, rabbit: LD50 = 15800 mg/kg;

CAS# 7732-18-5:

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

Carcinogenicity:

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# 67-56-1:** Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. **CAS# 7732-18-5:** Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information available.

Teratogenicity: Formaldehyde effects on Newborn: behavioral, ihl-rat TCLo=50 ug/m³/4H; biochemical/metabolic and reduced weight gain, ihl-rat TCLo=12 ug/m³/24H. Embryo or Fetus: cytological changes, ihl-rat TCLo=1 mg/m³/24H; stunted fetus and death, ipr-mouse TDLo=240 mg/kg. Specific Developmental Abnormalities: craniofacial and musculoskeletal, ipr-mouse TDLo=240 mg/kg.

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

Neurotoxicity: No information available.

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.

Other Studies: No data available.

Section 12 - Ecological Information

Ecotoxicity: Atlantic salmon LC50=173 uL/L/96H Catfish (fresh water) TLm=32 ppm/24H Flounder (salt water) TLm=100-330 ppm/48H Fathead minnow LC50=10-100 uL/L/96H Rainbow trout LC50= 168mg/L/48H Zebrafish LC50=41 mg/L/96H Water flea LC50=52 mg/L/24H

Environmental Fate: Bioconcentration: Studies on various fish have shown little potential for bioconcentration of substance. Soil Adsorption: log octanol/water partition coefficient=0.35 (indicates low potential for soil adsorption). Substance has a high biological oxygen demand, and is expected to have significant potential to affect secondary waste treatment microorganisms.

Physical/Chemical: Not available.

Other: None.

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

RCRA D-Series Maximum Concentration of Contaminants: None listed.

RCRA D-Series Chronic Toxicity Reference Levels: None listed.

RCRA F-Series: None listed.

RCRA P-Series: None listed.

RCRA U-Series: CAS# 50-00-0: waste number U122. CAS# 67-56-1: waste number U154 (Ignitable waste).

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Ca T
Shipping Name:	No information available.	No information available.	No information available.	No information available. FORMALDEHYDE SOLUTIONS	
Hazard Class:				3(8)(9.2)	
UN Number:				UN1198	
Packing Group:				III	

Section 15 - Regulatory Information

US FEDERAL

TSCA

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

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

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

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

CAS# 50-00-0: final RQ = 100 pounds (45.4 kg) CAS# 67-56-1: final RQ = 5000 pounds (2270 kg)

Section 302 (TPQ)

CAS# 50-00-0: TPQ = 500 pounds; RQ = 100 pounds (does not meet toxicity criteria but because of high production volume and recognized toxicity is considered a chemical of concern)

SARA Codes

CAS # 50-00-0: acute, chronic. CAS # 67-56-1: acute, flammable.

Section 313

This material contains Formaldehyde (CAS# 50-00-0, 39.98%), 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, 16.40%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 50-00-0 is listed as a hazardous air pollutant (HAP). CAS# 67-56-1 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS# 50-00-0 is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

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

STATE

CAS# 50-00-0 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

CAS# 67-56-1 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act: WARNING: This product contains Formaldehyde, a chemical known to the state of California to cause cancer. California No Significant Risk Level: CAS# 50-00-0: no significant risk level = 40 ug/day

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

Not available.

Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 50-00-0: 2

CAS# 67-56-1: 1

CAS# 7732-18-5: No information available.

Canada

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

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

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

This product has a WHMIS classification of D1B, D2A.

CAS# 50-00-0 is not listed on Canada's Ingredient Disclosure List.

CAS# 67-56-1 is not listed on Canada's Ingredient Disclosure List.

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

Exposure Limits

CAS# 50-00-0: OEL-ARAB Republic of Egypt: TWA 2 ppm (3 mg/m³) OEL-AUSTRALIA: TWA 1 ppm (1.5 mg/m³); STEL 2 ppm (3 mg/m³); CAR OEL-BELGIUM: TWA 1 ppm (1.2 mg/m³); STEL 2 ppm (2.5 mg/m³); CAR OEL-CZECHOSLOVAKIA: TWA 0.5 mg/m³; STEL 1 mg/m³ OEL-DENMARK: STEL 0.3 ppm (0.4 mg/m³); Carcinogen OEL-FINLAND: STEL 1 ppm (1.3 mg/m³); Skin OEL-FRANCE: STEL 2 ppm (3 mg/m³) OEL-GERMANY: TWA 0.5 ppm (0.6 mg/m³); Carcinogen OEL-HUNGARY: STEL 0.6 mg/m³; Carcinogen OEL-JAPAN: TWA 0.5 ppm (0.61 mg/m³); Carcinogen OEL-THE NETHERLANDS: TWA 1 ppm (1.5 mg/m³); STEL 2 ppm (3 mg/m³) OEL-THE PHILIPPINES: TWA 5 ppm (6 mg/m³) OEL-POLAND: TWA 2 mg/m³ OEL-RUSSIA: TWA 0.5 ppm; STEL 0.5 mg/m³; Skin OEL-SWEDEN: TWA 0.5 ppm (0.6 mg/m³); STEL 1 ppm (1. mg/m³) OEL-SWITZERLAND: TWA 0.5 ppm (0.6 mg/m³); STEL 1

pp (1.2 mg/m³) OEL-THAILAND:TWA 3 ppm;STEL 5 ppm OEL-TURKEY:TWA 5 ppm (6 mg/m³) OEL-UNITED KINGDOM:TWA 2 ppm (2.5 mg/m³);STEL 2 ppm (2.5 mg/m³) OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV
 CAS# 67-56-1: OEL-ARAB Republic of Egypt:TWA 200 ppm (260 mg/m³);Skin OEL-AUSTRALIA:TWA 200 ppm (260 mg/m³);STEL 250 ppm;Skin OEL-BELGIUM:TWA 200 ppm (262 mg/m³);STEL 250 ppm;Skin OEL-CZECHOSLOVAKIA:TWA 100 mg/m³;STEL 500 mg/m³ OEL-DENMARK:TWA 200 ppm (260 mg/m³);Skin OEL-FINLAND:TWA 200 ppm (260 mg/m³);STEL 250 ppm;Skin OEL-FRANCE:TWA 200 ppm (260 mg/m³);STEL 1000 ppm (1300 mg/m³) OEL-GERMANY:TWA 200 ppm (260 mg/m³);Skin OEL-HUNGARY:TWA 50 mg/m³;STEL 100 mg/m³;Skin JAN9 OEL-JAPAN:TWA 200 ppm (260 mg/m³);Skin OEL-THE NETHERLANDS:TWA 200 ppm (260 mg/m³);Skin OEL-THE PHILIPPINES:TWA 200 ppm (260 mg/m³) OEL-POLAND:TWA 100 mg/m³ OEL-RUSSIA:TWA 200 ppm;STEL 5 mg/m³;Skin OEL-SWEDEN:TWA 200 ppm (250 mg/m³);STEL 250 ppm (350 mg/m³);Skin OEL-SWITZERLAND:TWA 200 ppm (260 mg/m³);STEL 400 ppm;Skin OEL-THAILAND:TWA 200 ppm (260 mg/m³) OEL-TURKEY:TWA 200 ppm (260 mg/m³) OEL-UNITED KINGDOM:TWA 200 ppm (260 mg/m³);STEL 250 ppm;Skin OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Additional Information

MSDS Creation Date: 8/31/1995

Revision #7 Date: 6/02/1998

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 way shall Fisher 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 Fisher has been advised of the possibility of such damages.

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