Fisher Scientific

Material Safety Data Sheet

Formaldehyde solution 10% w/w or formalin solution 10%

MSDS# 41130

Section 1 - Chemical Product and Company Identification

MSDS Name:	Formaldehyde solution 10% w/w or formalin solution 10%
Catalog Numbers:	SF96-20, SF98-20, SF98-4
Synonyms:	None.
Company Identification:	Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410
For information in the US, call:	201-796-7100
Emergency Number US:	201-796-7100
CHEMTREC Phone Number, US:	800-424-9300

Section 2 - Composition, Information on Ingredients

Risk Phrases: 43

CAS#:	50-00-0
Chemical Name:	Formaldehyde
%:	3.9-9.8
EINECS#:	200-001-8
Hazard Symbols:	XI

Risk Phrases: 11 23/24/25 39/23/24/25

CAS#:	67-56-1
Chemical Name:	Methyl alcohol
%:	1.6-4.0
EINECS#:	200-659-6
Hazard Symbols:	F T

Risk Phrases:

CAS#:	7732-18-5
Chemical Name:	Water
%:	86.2-93.4
EINECS#:	231-791-2
Hazard Symbols:	

Text for R-phrases: see Section 16

Hazard Symbols: T

Risk Phrases: 45 20/21/22 36/37/38 43

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! May cause central nervous system depression. May cause blindness if swallowed. Cannot be made non-poisonous. May cause liver and kidney damage. Harmful if swallowed, inhaled, or absorbed through the skin. Contains formaldehyde which can cause cancer. May cause allergic respiratory and skin reaction. Causes eye, skin, and respiratory tract irritation. Target Organs: Kidneys, central nervous system, liver, respiratory system, eyes, skin.

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 nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause asthmatic attacks due to allergic sensitization of the respiratory tract.
Chronic:	Contains formaldehyde which can cause cancer in humans. There is sufficient evidence that formaldehyde causes nasopharyngeal cancer in humans, a rare cancer in developed countries. There is limited evidence that formaldehyde causes cancer of the nasal cavity and paranasal sinuses and strong but not sufficient evidence for leukemia. Repeated exposure may cause skin discoloration and thickening and nail decay.

Section 4 - First Aid Measures

Eyes:	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed.
Skin:	Immediately flush skin with plenty of 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 and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Notes to Physician:	

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. 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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated.
Extinguishing Media:	For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Cool containers with flooding quantities of water until well after fire is out.
Autoignition Temperature:	Not applicable.
Flash Point:	Not available
Explosion Limits: Lower:	Not available
Explosion Limits: Upper:	Not available
NFPA Rating:	health: 2; flammability: 1; instability: 0;

Section 6 - Accidental Release Measures

General Information:	Use proper personal protective equipment as indicated in Section 8.
	Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid

Spills/Leaks: runoff into storm sewers and ditches which lead to waterways. Remove all sources of ignition. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Avoid breathing vapor or mist.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Formaldehyde	0.3 ppm Ceiling	0.016 ppm TWA 20 ppm IDLH	0.75 ppm TWA; 0.5 ppm Action Level; 0.75 ppm TWA; 2 ppm STEL (Irritant and potential cancer ha zard - see 29 CFR 1910.1048)
Methyl alcohol	200 ppm; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous r oute	200 ppm TWA; 260 mg/m3 TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m3 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: None listed

Engineering Controls:

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. See 29CFR 1910.1048 for regulatory requirements pertaining to all occupational exposures to formaldehyde, i.e., from formaldehyde gas, its solutions, and materials that release formaldehyde.

Exposure Limits

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

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 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Color: colorless

Odor: formaldehyde

pH: Not available

Vapor Pressure: Not available

Vapor Density: >1.00

Evaporation Rate: Not available

Viscosity: Not available

Boiling Point: 100 deg C (212.00°F)

Freezing/Melting Point: 0 deg C (32.00°F)
Decomposition Temperature: Not available
Solubility in water: soluble in water
Specific Gravity/Density: >1.00
Molecular Formula: Mixture
Molecular Weight: Not available

Section 10 - Stability and Reactivity

Chemical Stability:	Stable under normal temperatures and pressures.
Conditions to Avoid:	Excess heat, confined spaces.
Incompatibilities with Other Materials	Strong oxidizing agents.
Hazardous Decomposition Products	Carbon monoxide, carbon dioxide.
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:
RTECS:
CAS# 50-00-0: Draize test, rabbit, eye: 750 ug/24H Severe;
Draize test, rabbit, eye: 750 ug Severe;
Draize test, rabbit, eye: 10 mg Severe;
Draize test, rabbit, eye: 37% Severe;
Draize test, rabbit, skin: 2 mg/24H Severe;
Draize test, rabbit, skin: 50 mg/24H Moderate;
Inhalation, mouse: LC50 = 454 mg/m3/4H;
Inhalation, mouse: LC50 = 505 mg/m3/2H;
Inhalation, rat: LC50 = 203 mg/m3;
Inhalation, rat: LC50 = 578 mg/m3/2H;
Inhalation, rat: LC50 = 250 ppm/2H;
Oral, mouse: LD50 = 42 mg/kg;
Oral, mouse: LD50 = 385 mg/kg;
Oral, mouse: LD50 = 500 mg/kg;
Oral, rat: LD50 = 100 mg/kg;
Oral, rat: LD50 = 500 mg/kg;
Skin, rabbit: LD50 = 270 uL/kg;
Skin, rabbit: LD50 = 270 mg/kg;
.
RTECS:
CAS# 67-56-1: Draize test, rabbit, eye: 40 mg Moderate;
Draize test, rabbit, eye: 100 mg/24H Moderate;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, rabbit: LC50 = 81000 mg/m3/14H;
Inhalation, rat: LC50 = 64000 ppm/4H;
Oral, mouse: LD50 = 7300 mg/kg;
Oral, rabbit: LD50 = 14200 mg/kg;
Oral, rat: LD50 = 5600 mg/kg;
Skin, rabbit: LD50 = 15800 mg/kg;
.
RTECS:
CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg;
.

Carcinogenicity:
Formaldehyde - ACGIH: A2 - Suspected Human Carcinogen California: carcinogen, initial date 1/1/88 (gas) NTP: Suspect carcinogen IARC: Group 1 carcinogen
Methyl alcohol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Water - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

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

Section 14 - Transport Information

US DOT
Shipping Name: AVIATION REGULATED LIQUID, N.O.S.
Hazard Class: 9
UN Number: UN3334
Packing Group:
Canada TDG
Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:

USA RQ: CAS# 50-00-0: 100 lb final RQ; 45.4 kg final RQ
USA RQ: CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T

Risk Phrases:

R 45 May cause cancer.

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 43 May cause sensitization by skin contact.

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 50-00-0: 2

CAS# 67-56-1: 1

CAS# 7732-18-5: Not available

Canada

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

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

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

Canadian WHMIS Classifications: B3, D1B, D2A

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

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

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.

Section 16 - Other Information

MSDS Creation Date: 7/12/1999

Revision #9 Date 2/15/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility 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 the company 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 the company has been advised of the possibility of such damages.
