Fisher Scientific

Part of Thermo Fisher Scientific

Material Safety Data Sheet

Creation Date 08-Feb-2010 **Revision Date** 05-Jun-2012 **Revision Number** 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **Formaldehyde solution 37%**

Cat No. **F75F-1GAL; F75P-1GAL; F75P-4; F75P-20; F77-20; F77-200; F77P-4; F77P-20; F79-1; F79-4; F79-4LC; F79-20; F79-200; F79-500; F79P-4; F79P-20**

Synonyms Formalin; Methanal; Methylene oxide; Oxymethane; Formic aldehyde; Methyl aldehyde (Preserved/Stabilized/USP/Molecular Biology/Certified ACS)

Recommended Use Laboratory chemicals

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Flammable liquid and vapor. Cancer hazard. Poison, may be fatal or cause blindness if swallowed. Cannot be made non-poisonous. Toxic by inhalation, in contact with skin and if swallowed. Causes burns by all exposure routes. Vapor harmful. May cause an allergic skin reaction. May cause central nervous system effects. WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Appearance Colorless **Physical State** Liquid **odor** pungent

Target Organs Gastrointestinal tract (GI), Central nervous system (CNS), Eyes, Respiratory system, Skin, Optic nerve, Heart, Liver, Kidney, spleen, Blood

Potential Health Effects

Acute Effects
Principle Routes of Exposure

Eyes Causes burns.
Skin Causes burns. Toxic in contact with skin. May produce an allergic reaction.
Inhalation Causes burns. Toxic by inhalation. Inhalation may cause central nervous system effects.

Ingestion May be fatal or cause blindness if swallowed. Causes burns. May cause central nervous system effects. May cause adverse liver effects. May cause adverse kidney effects.

Chronic Effects May cause cancer. Tumorigenic effects have been reported in experimental animals.. Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects. May cause adverse kidney effects. Repeated contact may cause allergic reactions in very susceptible persons. Component substance is listed on California Proposition 65 as a developmental hazard.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions Central nervous system disorders. Gastrointestinal tract. Preexisting eye disorders. Skin disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Water	7732-18-5	45 - 48
Formaldehyde	50-00-0	37 - 40
Methyl alcohol	67-56-1	15

4. FIRST AID MEASURES

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point 50°C / 122°F

Method No information available.

Autoignition Temperature No information available.

Explosion Limits

Upper No data available

Lower No data available

Suitable Extinguishing Media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media No information available.

Hazardous Combustion Products No information available.

Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Specific Hazards Arising from the Chemical
Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.

Protective Equipment and Precautions for Firefighters
Thermal decomposition can lead to release of irritating gases and vapors.

NFPA **Health** 3 **Flammability** 2 **Instability** 0 **Physical hazards** N/A

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use personal protective equipment. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Take precautionary measures against static discharges. Do not get in eyes, on skin, or on clothing.
Environmental Precautions	Should not be released into the environment.
Methods for Containment and Clean Up	Remove all sources of ignition. Soak up with inert absorbent material. Take precautionary measures against static discharges. Keep in suitable, closed containers for disposal..

7. HANDLING AND STORAGE

Handling	Use only under a chemical fume hood. Remove all sources of ignition. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Formaldehyde	Ceiling: 0.3 ppm	(Vacated) TWA: 3 ppm (Vacated) STEL: 10 ppm (Vacated) Ceiling: 5 ppm TWA: 0.75 ppm STEL: 2 ppm	IDLH: 20 ppm TWA: 0.016 ppm Ceiling: 0.1 ppm
Methyl alcohol	TWA: 200 ppm STEL: 250 ppm Skin	(Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m^3 (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m^3 Skin TWA: 200 ppm TWA: 260 mg/m^3	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m^3 STEL: 250 ppm STEL: 325 mg/m^3

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Formaldehyde	Ceiling: 2 ppm Ceiling: 3 mg/m^3	Peak: 2 ppm Peak: 3 mg/m^3	STEL: 1.0 ppm CEV: 1.5 ppm
Methyl alcohol	TWA: 200 ppm TWA: 262 mg/m^3 STEL: 250 ppm STEL: 328 mg/m^3 Skin	TWA: 200 ppm TWA: 260 mg/m^3 STEL: 250 ppm STEL: 310 mg/m^3	TWA: 200 ppm STEL: 250 ppm Skin

NIOSH IDLH: *Immediately Dangerous to Life or Health*

Personal Protective Equipment

Eye/face Protection 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 and body protection Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection 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

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Colorless
odor	pungent
Odor Threshold	No information available.
pH	No information available.
Vapor Pressure	No information available.
Vapor Density	> 1.0
Viscosity	No information available.
Boiling Point/Range	101°C / 213.8°F
Melting Point/Range	0°C / 32°F
Decomposition temperature	No information available.
Flash Point	50°C / 122°F
Evaporation Rate	No information available.
Specific Gravity	No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Solubility Soluble in water
log Pow No data available

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Heat, flames and sparks.

Incompatible Materials Strong oxidizing agents, Strong bases, nitriles, Acids, Isocyanates, Acid anhydrides, Metals, Acid chlorides

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2), Hydrogen, Formaldehyde

Hazardous Polymerization Hazardous polymerization does not occur

Hazardous Reactions . None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation (Dust)
Formaldehyde	500 mg/kg (Rat)	Not listed	0.578 mg/L (Rat) 4 h
Methyl alcohol	5628 mg/kg (Rat)	15800 mg/kg (Rabbit)	64000 ppm (Rat) 4 h 83.2 mg/L (Rat) 4 h

Irritation Causes burns by all exposure routes

Toxicologically Synergistic Products No information available.

Chronic Toxicity

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH	IARC	NTP	OSHA	Mexico
Formaldehyde	A2	Group 1	Reasonably Anticipated	X	A2

ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC: (International Agency for Research on Cancer)
IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
NTP: (National Toxicity Program)
NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

Sensitization May cause sensitization by skin contact

Mutagenic Effects Mutagenic effects have occurred in humans.

Reproductive Effects Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects Developmental effects have occurred in experimental animals. Component substance is listed on California Proposition 65 as a developmental hazard.

Teratogenicity Teratogenic effects have occurred in experimental animals..

Other Adverse Effects Tumorigenic effects have been reported in experimental animals.. See actual entry in RTECS for complete information.

Endocrine Disruptor Information No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

. Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Formaldehyde	Not listed	Leuciscus idus: LC50 = 15 mg/L 96h	Not listed	EC50 = 20 mg/L 96h EC50 = 2 mg/L 48h
Methyl alcohol	Not listed	Pimephales promelas: LC50 > 10000 mg/L 96h	EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min	EC50 > 10000 mg/L 24h

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility .

Component	log Pow
Formaldehyde	-0.35
Methyl alcohol	-0.74

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Formaldehyde - 50-00-0	U122	-
Methyl alcohol - 67-56-1	U154	-

14. TRANSPORT INFORMATION

DOT

UN-No	UN1198
Proper Shipping Name	FORMALDEHYDE, SOLUTIONS, FLAMMABLE
Hazard Class	3
Subsidiary Hazard Class	8
Packing Group	III

TDG

UN-No	UN1198
Proper Shipping Name	FORMALDEHYDE, SOLUTIONS, FLAMMABLE
Hazard Class	3
Subsidiary Hazard Class	8
Packing Group	III

IATA

UN-No	UN1198
Proper Shipping Name	FORMALDEHYDE, SOLUTIONS, FLAMMABLE
Hazard Class	3
Subsidiary Hazard Class	8
Packing Group	III

IMDG/IMO

UN-No	UN1198
Proper Shipping Name	FORMALDEHYDE, SOLUTIONS, FLAMMABLE
Hazard Class	3
Subsidiary Hazard Class	8
Packing Group	III

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Water	X	X	-	231-791-2	-		X	-	X	X	X
Formaldehyde	X	X	-	200-001-8	-		X	X	X	X	X
Methyl alcohol	X	X	-	200-659-6	-		X	X	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Formaldehyde	50-00-0	37 - 40	0.1
Methyl alcohol	67-56-1	15	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Formaldehyde	X	100 lb	-	-

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Formaldehyde	X		-
Methyl alcohol	X		-

OSHA

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Formaldehyde	2 ppm STEL 0.5 ppm Action Level 0.75 ppm TWA	TQ: 1000 lb

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Formaldehyde	100 lb	100 lb

Component	Hazardous Substances RQs	CERCLA EHS RQs
Methyl alcohol	5000 lb	-

California Proposition 65
This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65	Prop 65 NSRL
Formaldehyde	50-00-0	Carcinogen	40 µg/day
Methyl alcohol	67-56-1	Methanol	-

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Formaldehyde	X	X	X	X	X
Methyl alcohol	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product contains the following DHS chemicals:

Component	DHS Chemical Facility Anti-Terrorism Standard
Formaldehyde	11250 lb STQ (solution)

Other International Regulations

Mexico - Grade Moderate risk, Grade 2

Canada

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

WHMIS Hazard Class
B3 Combustible liquid
D1A Very toxic materials
D2A Very toxic materials
D2B Toxic materials
E Corrosive material

16. OTHER INFORMATION

Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
Creation Date	08-Feb-2010
Print Date	05-Jun-2012
Revision Summary	"***", and red text indicates revision

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS