

SAFETY DATA SHEET

Creation Date 26-Sep-2009 Revision Date 24-Dec-2021 **Revision Number** 8

1. Identification

Product Name Formalin, Buffered, 10%

SF99-4; SF99-20 Cat No.:

Synonyms Formaldehyde solution, buffered (Acetate Buffer/Certified)

Recommended Use Laboratory chemicals.

Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Fisher Scientific Company 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. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids Category 4 Skin Corrosion/Irritation Category 2 Serious Eye Damage/Eye Irritation Category 2 Skin Sensitization Category 1 Germ Cell Mutagenicity Category 2 Carcinogenicity Category 1A Specific target organ toxicity (single exposure) Category 1 Target Organs - Respiratory system, Central nervous system (CNS), Optic nerve.

Specific target organ toxicity - (repeated exposure) Category 2

Target Organs - Kidney, Liver, Blood.

Label Elements

Signal Word

Danger

Hazard Statements

Combustible liquid

Causes skin irritation

Causes serious eye irritation

May cause an allergic skin reaction

May cause respiratory irritation

May cause drowsiness or dizziness

Suspected of causing genetic defects

May cause cancer

Causes damage to organs

May cause damage to organs through prolonged or repeated exposure



Precautionary Statements

Prevention

Obtain special instructions before use

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

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Contaminated work clothing should not be allowed out of the workplace

Wear protective gloves

Do not breathe dust/fume/gas/mist/vapors/spray

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep cool

Response

IF exposed: Call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor/physician if you feel unwell

Skin

IF ON SKIN: Wash with plenty of soap and water

Take off contaminated clothing and wash before reuse

If skin irritation or rash occurs: Get medical advice/attention

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a POISON CENTER or doctor/physician

Fire

In case of fire: Use CO2, dry chemical, or foam for extinction

Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

WARNING. Reproductive Harm - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS No	Weight %

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Water	7732-18-5	82 - 82.9
Formaldehyde	50-00-0	3.9 - 4.0
Sodium acetate	127-09-3	1.2 - 2.0
Methyl alcohol	67-56-1	2

4. First-aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If

eye irritation persists: Get medical advice/attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists,

call a physician.

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth

method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Immediate medical attention is required.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Most important symptoms and

effects

Notes to Physician

Difficulty in breathing. May cause allergic skin reaction. Irritating to eyes. Irritating to skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist may

be used to cool closed containers.

Unsuitable Extinguishing Media No information available

Flash Point 90 °C / 194 °F

Method - No information available

Autoignition Temperature

Explosion Limits

No information available

Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Combustible material. Risk of ignition. Containers may explode when heated. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂).

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health **Flammability** Instability Physical hazards N/A

6. Accidental release measures

Personal Precautions

Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges. Should not be released into the environment. Do not flush into surface water or sanitary

Environmental Precautions

sewer system. See Section 12 for additional Ecological Information.

Up

Methods for Containment and Clean Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition.

7. Handling and storage

Handling

Use only under a chemical fume hood. Do not get in eyes, on skin, or on clothing. Do not breathe mist/vapors/spray. Wear personal protective equipment/face protection. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition.

Storage.

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame.

8. Exposure controls / personal protection

Exposure Guidelines

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

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers

are close to the workstation location. Ensure adequate ventilation, especially in confined

areas.

Personal Protective Equipment

Eye/face Protection Tight sealing safety goggles.

Wear appropriate protective gloves and clothing to prevent skin exposure. Skin and body protection

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.

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Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical StateLiquidAppearanceClearOdorpungent

Odor Threshold No information available

pH

Melting Point/Range 0 °C / 32 °F

Boiling Point/Range No information available - 100 °C / - 212 °F

Flash Point 90 °C / 194 °F

Evaporation Rate > 1.0

Flammability (solid,gas) Not applicable

Flammability or explosive limits

UpperNo data availableLowerNo data available

Vapor PressureNo information availableVapor Density1.0

Specific Gravity 1.10
Solubility miscible

Partition coefficient; n-octanol/waterNo data availableAutoignition TemperatureNo information availableDecomposition TemperatureNo information availableViscosityNo information available

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Excess heat. Keep away from open flames, hot surfaces and

sources of ignition.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO2)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product InformationNo acute toxicity information is available for this product

Oral LD50Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.Dermal LD50Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.Vapor LC50Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	ı
Formaldehyde	500 mg/kg (Rat)	LD50 = 270 mg/kg (Rabbit)	0.578 mg/L (Rat) 4 h
Sodium acetate	LD50 = 3530 mg/kg (Rat)	LD50 > 10 g/kg(Rabbit)	LC50 > 30 g/m³ (Rat) 1 h
Methyl alcohol	LD50 = 1187 - 2769 mg/kg (Rat)	LD50 = 17100 mg/kg (Rabbit)	LC50 = 128.2 mg/L (Rat) 4 h

Toxicologically Synergistic

No information available

Products

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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to eyes, respiratory system and skin

Sensitization No information available

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

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed				
Formaldehyde	50-00-0	Group 1	Known	A1	X	A2
Sodium acetate	127-09-3	Not listed				
Methyl alcohol	67-56-1	Not listed				

IARC (International Agency for Research on Cancer)

NTP: (National Toxicity Program)

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)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human

Carcinogen

ACGIH: (American Conference of Governmental Industrial

Mexico - Occupational Exposure Limits - Carcinogens

Hygienists)

A1 - Known Human Carcinogen A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

A1 - Confirmed Human Carcinogen A2 - Suspected Human Carcinogen A3 - Confirmed Animal Carcinogen

A4 - Not Classifiable as a Human Carcinogen

A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects No information available

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

Developmental effects have occurred in experimental animals. **Developmental Effects**

Teratogenic effects have occurred in experimental animals. **Teratogenicity**

STOT - single exposure Respiratory system Central nervous system (CNS) Optic nerve

STOT - repeated exposure Kidney Liver Blood

No information available Aspiration hazard

delayed

Symptoms / effects,both acute and Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling

of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information No information available

Tumorigenic effects have been reported in experimental animals. See actual entry in Other Adverse Effects

RTECS for complete information.

12. Ecological information

Ecotoxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. Contains a substance which is:. Toxic to aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Formaldehyde	Not listed	Leuciscus idus: LC50 = 15	Not listed	EC50 = 20 mg/L 96h
		mg/L 96h		EC50 = 2 mg/L 48h
Sodium acetate	-	LC50: > 100 mg/L, 96h	= 7200 mg/L EC50	EC50: > 1000 mg/L, 48h
		semi-static (Danio rerio)	Pseudomonas putida 18 h	(Daphnia magna)

Formalin, Buffered, 10%

Methyl alcohol	Not listed		EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min	EC50 > 10000 mg/L 24h
		> 10000 mg/2 00m	EC50 = 43000 mg/L 5 min	

Persistence and Degradability

Miscible with water Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation

No information available.

Mobility

. Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Formaldehyde	-0.35
Sodium acetate	-4.22
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

COMBUSTIBLE LIQUID, NOT REGULATED FOR TRANSPORT IN THIS QUANTITY According to 49 CFR §173.150(f)(1), this material should reclassified as NA1993, Combustible Liquid, NOS if it is shipped in bulk.

UN-No Proper Shipping Name

NA1993 Combustible liquid, n.o.s.

Packing Group

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TDG Not regulated Not regulated Not regulated Not regulated Not regulated Not regulated

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Water	7732-18-5	X	ACTIVE	-
Formaldehyde	50-00-0	X	ACTIVE	-
Sodium acetate	127-09-3	X	ACTIVE	-
Methyl alcohol	67-56-1	X	ACTIVE	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL

Water	7732-18-5	Х	-	231-791-2	Х	Х		Х	Х	KE-35400
Formaldehyde	50-00-0	Χ	-	200-001-8	Χ	Χ	Х	Х	Χ	KE-17074
Sodium acetate	127-09-3	Χ	-	204-823-8	Χ	Χ	Х	Х	Χ	KE-00061
Methyl alcohol	67-56-1	Χ	-	200-659-6	Χ	Х	Х	Х	Х	KE-23193

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313

Component	CAS No	Weight %	SARA 313 - Threshold Values %
Formaldehyde	50-00-0	3.9 - 4.0	0.1
Methyl alcohol	67-56-1	2	1.0

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

STIA (Glean 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 - Occupational Safety and

Not applicable

Health Administration

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

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
Ī	Formaldehyde	100 lb	100 lb
Ī	Methyl alcohol	5000 lb	-

California Proposition 65

This product contains the following Proposition 65 chemicals.

Component CAS No		California Prop. 65 Prop 65		Category
Formaldehyde	50-00-0	Carc. (Gaseous only)	40 μg/day	Carcinogen
Methyl alcohol	67-56-1	Developmental	-	Developmental

U.S. State Right-to-Know Regulations

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

U.S. Department of Transportation

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

U.S. Department of Homeland

This product contains the following DHS chemicals:

Security

Legend - STQs = Screening Threshold Quantities, APA = A placarded amount

Component	DHS Chemical Facility Anti-Terrorism Standard
Formaldehyde	Release STQs - 15000lb (solution)

Other International Regulations

Mexico - Grade Slight risk, Grade 1

Authorisation/Restrictions according to EU REACH

	Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
	Formaldehyde	-	Use restricted. See item 72. (see link for restriction details) Use restricted. See item 28. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	- 1
F	Methyl alcohol	-	Use restricted. See item 69. (see link for restriction details)	-

https://echa.europa.eu/substances-restricted-under-reach

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Water	7732-18-5	Listed	Not applicable	Not applicable	Not applicable
Formaldehyde	50-00-0	Listed	Not applicable	Not applicable	Not applicable
Sodium acetate	127-09-3	Listed	Not applicable	Not applicable	Not applicable
Methyl alcohol	67-56-1	Listed	Not applicable	Not applicable	Not applicable

Component	CAS No	for Major Accident	(2012/18/EC) - Qualifying Quantities for Safety Report	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Water	7732-18-5	Notification Not applicable	Requirements Not applicable	Not applicable	Not applicable
Formaldehyde	50-00-0	5 tonne	50 tonne	Not applicable	Not applicable
Sodium acetate	127-09-3	Not applicable	Not applicable	Not applicable	Not applicable
Methyl alcohol	67-56-1	500 tonne	5000 tonne	Not applicable	Not applicable

16. Other information

Prepared By Regulatory Affairs

Thermo Fisher Scientific

Email: EMSDS.RA@thermofisher.com

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Revision Summary

This document has been updated to comply with the US OSHA HazCom 2012 Standard

replacing the current legislation under 29 CFR 1910.1200 to align with the Globally

Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in 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 guidance for safe handling, use, processing, storage,

transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

End of SDS