



Fisher Scientific

Part of Thermo Fisher Scientific

Material Safety Data Sheet

Creation Date 02-Feb-2012

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Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Neutral Buffered Formalin (Concentrated)

Cat No. 22-046-361

Synonyms No information available.

Recommended Use Laboratory chemicals

Company
Richard Allan Scientific
A Subsidiary of Thermo Fisher Scientific
4481 Campus Drive
Kalamazoo, MI 49008
Tel: (800) 522-7270

Emergency Telephone Number
Chemtrec US: (800) 424-9300
Chemtrec EU: 001 (202) 483-7616

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Combustible liquid. Cancer hazard. Poison, may be fatal or cause blindness if swallowed. Cannot be made non-poisonous. Vapor harmful. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. May cause central nervous system effects. May cause an allergic skin reaction. Aspiration hazard if swallowed - can enter lungs and cause damage. Possible risks of irreversible effects.

Appearance Colorless

Physical State Liquid

odor pungent

Target Organs Respiratory system, Eyes, Skin, Central nervous system (CNS), Optic nerve, Liver, Kidney

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes

Irritating to eyes.

Skin

Harmful in contact with skin. Irritating to skin. May produce an allergic reaction.

Inhalation

Harmful by inhalation. Irritating to respiratory system. Inhalation may cause central nervous system effects.

Ingestion

May be fatal or cause blindness if swallowed. Aspiration hazard. May cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects

Cancer hazard.. 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.

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 %
Sodium phosphate, monobasic	7558-80-7	1 - 2
Formaldehyde	50-00-0	18 - 20
Methyl alcohol	67-56-1	5 - 6
Sodium phosphate dibasic	7558-79-4	3 - 3.5
Water	7732-18-5	70 - 71

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 73.3°C / 163.9°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

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

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 2** **Flammability 2** **Instability 0** **Physical hazards N/A**

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use personal protective equipment. Remove all sources of ignition. 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	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. Wear personal protective equipment. Keep away from open flames, hot surfaces and sources of ignition. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest.
Storage	Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat and sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures

Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure adequate ventilation, especially in confined areas. 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 TWA EV
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

6.83

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

73.3°C / 163.9°F

Evaporation Rate

No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity	1.089
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, Acids, Acid anhydrides, Acid chlorides, Peroxides, Metals, nitriles, Isocyanates
Hazardous Decomposition Products	Carbon monoxide (CO), Formaldehyde, Methanol
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
Sodium phosphate, monobasic	8290 mg/kg (Rat)	7940 mg/kg (Rabbit)	Not listed
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
Sodium phosphate dibasic	17 g/kg (Rat)	Not listed	Not listed

Irritation Irritating to eyes, respiratory system and skin

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	No information available.
Reproductive Effects	Experiments have shown reproductive toxicity effects on laboratory animals.
Developmental Effects	Developmental effects have occurred in experimental animals.
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 UN3334
 Proper Shipping Name AVIATION REGULATED LIQUID, N.O.S.
 Proper technical name (FORMALDEHYDE)
 Hazard Class 9

TDG

UN-No UN3334
 Proper Shipping Name AVIATION REGULATED LIQUID, N.O.S.
 Hazard Class 9

IATA

UN-No UN3334
 Proper Shipping Name AVIATION REGULATED LIQUID, N.O.S.
 Hazard Class 9

IMDG/IMO

Not regulated

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Sodium phosphate, monobasic	X	X	-	231-449-2	-		X	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
Sodium phosphate dibasic	X	X	-	231-448-7	-		X	X	X	X	X
Water	X	X	-	231-791-2	-		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	18 - 20	0.1
Methyl alcohol	67-56-1	5 - 6	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	-	-
Sodium phosphate dibasic	X	5000 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
Methyl alcohol	5000 lb	-
Sodium phosphate dibasic	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

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
Sodium phosphate dibasic	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
Sodium phosphate, monobasic	2000 lb STQ
Formaldehyde	11250 lb STQ (solution)

Other International Regulations

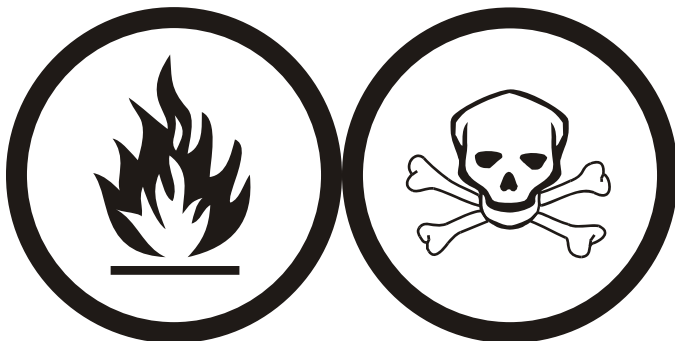
Mexico - Grade Moderate risk, Grade 2

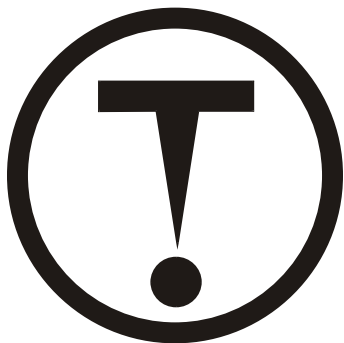
Canada

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
- D1B Toxic materials
- D2A Very toxic materials
- D2B Toxic materials





16. OTHER INFORMATION

Prepared By Regulatory Affairs
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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