

DATE: 08/06/99 ACCT: 888235001
 INDEX: D92172444 CAT NO: SB98500 PO NBR: MARY PINKERTON VC 8-5-99

**** MATERIAL SAFETY DATA SHEET ****

Buffer Solution pH 4.0
41132

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Buffer Solution pH 4.0

Catalog Numbers:
S79829, NC9574936, SB98 1, SB98 10, SB98 20, SB98 500, SB981, SB9810,
SB9820, SB98500, XXSB9910LI

Synonyms:
None.

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	%	EINECS#
50-00-0	Formaldehyde	0.05	200-001-8
67-56-1	Methyl alcohol	0.02	200-659-6
877-24-7	Potassium Hydrogen Phthalate	1.0	212-889-4
7732-18-5	Water	Balance	231-791-2

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: clear, colorless.

Caution! May cause eye and skin irritation. May cause respiratory and digestive tract irritation. May cause cancer based on animal studies. Contains formaldehyde.

Target Organs: None.

Potential Health Effects

Eye:

May cause eye irritation.

Skin:

May cause mild skin irritation. Low hazard for usual industrial handling.

Ingestion:

Low hazard for usual industrial handling. May cause gastric disturbances and electrolytic imbalance.

Inhalation:

May cause allergic respiratory reaction. May cause respiratory tract irritation. Low hazard for usual industrial handling.

Chronic:

May cause cancer according to animal studies.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:

Get medical aid. Gently lift eyelids and flush continuously with water.

Skin:

Get medical aid if irritation develops or persists. Wash clothing before reuse. Flush skin with plenty of soap and water.

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.

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

Antidote:

None reported.

**** 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. 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. Use extinguishing media appropriate to the surrounding fire. Substance is noncombustible.

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Containers may explode when heated.
 Extinguishing Media:
 Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.
 Autoignition Temperature: Not available.
 Flash Point: Not available.
 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:

Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:

Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes. Keep container tightly closed. Wash clothing before reuse.

Storage:

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

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:

Good general ventilation should be sufficient to control airborne levels.

Chemical Name	Exposure Limits		
	ACGIH	NIOSH	OSHA - Final PELs
Formaldehyde mg/m3	C 0.3 ppm; C 0.37	0.016 ppm TWA; NIOSH Potential Occupational Carcinogen - see Appendix A Potential NIOSH carcinogen.	PEL: 0.75 ppm TWA 2 ppm STEL; 0.5 ppm TWA action level; Irritant and potential c ancer hazard (29 CFR 1910.1048)
Methyl alcohol	200 ppm ; 262 mg/m3; 250 ppm STEL; 328 mg/m3	200 ppm TWA; 260 mg/m3 TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m3 TWA
Potassium Hydrogen Phthalate	none listed	none listed	none listed
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

Potassium Hydrogen Phthalate:
No OSHA Vacated PELs are listed for this chemical.

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 gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to minimize contact with skin.

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: clear, colorless
Odor: odorless
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: Not available.
Freezing/Melting Point: Not available.
Decomposition Temperature: Not available.
Solubility: soluble
Specific Gravity/Density: Not available.
Molecular Formula: Not available.
Molecular Weight: Not available.

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable.
Conditions to Avoid:
None reported.
Incompatibilities with Other Materials:
None reported.
Hazardous Decomposition Products:
Formaldehyde.
Hazardous Polymerization: Has not been reported

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 50-00-0: LP8925000
CAS# 67-56-1: PC1400000
CAS# 877-24-7 unlisted.
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# 877-24-7
CAS# 7732-18-5: Oral, rat: LD50 = 90 mL/kg.
Carcinogenicity:
Formaldehyde -
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
Methyl alcohol -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Potassium Hydrogen Phthalate -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Water -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
Methanol has been shown to produce fetotoxicity in the embryo or fetus in laboratory animals. Specific developmental abnormalities include: musculoskeletal, urogenital and cardiovascular systems.
Teratogenicity:
Effects on the newborn by exposure to formaldehyde have been reported in rats by inhalation, such as behavioral effects, biochemical and metabolic effects and reduced weight gain. Cytological changes were also noted. Specific developmental abnormalities were reported by the intraperitoneal route of exposure in mice.
Reproductive Effects:
Paternal effects were reported in male rats by inhalation, oral ingestion and intraperitoneal injection of formaldehyde. Organs affected included the prostate, seminal vesicle, Cowpers gland, urethra, testes, sperm duct and epididymis. Spermatogenesis was also affected.
Neurotoxicity:
No information available.
Mutagenicity:
No information available.
Other Studies:
No data available.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Not available.
Environmental Fate:
No information reported.
Physical/Chemical:
No information available.
Other:
None.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.
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
No information available
IMO
No information available.
IATA
No information available.
RID/ADR
No information available.
Canadian TDG
No information available.

**** 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# 877-24-7 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.
CAS # 877-24-7: acute.
Section 313
This material contains Formaldehyde (CAS# 50-00-0, 0.05%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
This chemical is not at a high enough concentration to be reportable under Section 313.
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
Formaldehyde can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
Methyl alcohol can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
Potassium Hydrogen Phthalate is not present on state lists from CA, PA, MN, MA, FL, or NJ.
Water 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

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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:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 50-00-0: 2

CAS# 67-56-1: 1

CAS# 877-24-7: No information available.

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# 877-24-7 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 Not controlled..

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# 877-24-7 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

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 2/13/1995 Revision #6 Date: 2/24/1999

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 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, however arising, even if the company has been advised of the possibility of such damages.