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DATE: 03/17/03 ACCT: 888235001
 INDEX: D30739872 CAT NO: SF1004 PO NBR: MEG WARACZYNSKI/VC/03-14

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

Formalin Neutral Buffered 10% w/v
 1127

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

SDS Name: Formalin Neutral Buffered 10% w/v
 atalog Numbers:

SF100-20, SF100-200, SF100-4

ynonyms:

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	4.0	200-001-8
67-56-1	Methyl alcohol	1.0-2.0	200-659-6
7558-79-4	Sodium phosphate dibasic	0.65	231-448-7
7732-18-5	Water	91.9-92	231-791-2
10049-21-5	Sodium phosphate, Monobasic, Monohydrate	0.4	unlisted

Hazard Symbols: XN

Risk Phrases: 20/21/22 42/43 45

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

EMERGENCY OVERVIEW

Appearance: clear liquid. Flash Point: 185 deg F.
 Warning! This substance has caused adverse reproductive and fetal effects in animals. May cause central nervous system depression. Contains formaldehyde, potential cancer hazard. May cause allergic skin and respiratory reaction. Combustible liquid and vapor. Causes eye, skin, and respiratory tract irritation.
 Target Organs: Central nervous system, lungs, skin.

Potential Health Effects

Eye: Causes eye irritation. Contact may cause ulceration of the conjunctiva and cornea. May cause chemical conjunctivitis and corneal damage.

Skin: Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May cause cyanosis of the extremities.

Ingestion: Causes gastrointestinal irritation with nausea, vomiting and diarrhea. 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 systemic toxicity including central nervous system depression, convulsions, coma, and possible death due to respiratory depression.

Inhalation: May cause asthmatic attacks due to allergic sensitization of the respiratory tract. Aspiration may lead to pulmonary edema. Inhalation at high concentrations may cause CNS depression and asphyxiation.

Chronic: Effects may be delayed. Formaldehyde has been associated with nasal and nasopharyngeal cancers. 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 or keep eyes closed.

Skin: Immediately flush skin with plenty of soap and 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:

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Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupsful 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 to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: Treat symptomatically and

**** 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. Combustible Liquid. 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. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out. with flooding quantities of water until well after fire is out.

Autoignition Temperature: Not applicable.

Flash Point: 185 deg F (85.00 deg C)

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 2; Instability: 0

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as saw dust. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

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

Handling:

Wash thoroughly after handling. Use only in a well-ventilated area. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage:

Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

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

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

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Formaldehyde	0.3 ppm Ceiling	0.016 ppm TWA 20 ppm IDLH	0.75 ppm TWA PEL; 2 ppm STEL; 0.5 ppm TWA action level; Irritant and potential cancer hazard (29 CFR 1910.1048)
Methyl alcohol	200 ppm; 250 ppm STEL; skin -	200 ppm TWA; 260 mg/m3 TWA 6000	200 ppm TWA; 260 mg/m3 TWA

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	potential for cutaneous absorption	ppm IDLH	
Sodium phosphate dibasic	none listed	none listed	none listed
Water	none listed	none listed	none listed
Sodium phosphate, Monobasic, Monohydrate	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
 Sodium phosphate dibasic:
 No OSHA Vacated PELs are listed for this chemical.
 Water:
 No OSHA Vacated PELs are listed for this chemical.
 Sodium phosphate, Monobasic, Monohydrate:
 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 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. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Liquid
 Color: clear
 Odor: strong odor - pungent odor
 pH: 6.9-7.1
 Vapor Pressure: Not available.
 Vapor Density: 1.0
 Evaporation Rate: >1.0
 Viscosity: Not available.
 Boiling Point: 201-212 deg F
 Freezing/Melting Point: 32 deg F
 Decomposition Temperature: Not available.
 Solubility in water: Soluble in water.
 Specific Gravity/Density: 1.10
 Molecular Formula: Mixture
 Molecular Weight: 0

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

Chemical Stability:
 Stable under normal temperatures and pressures.
 Conditions to Avoid:
 Incompatible materials, ignition sources, excess heat, oxidizers.
 Incompatibilities with Other Materials:
 Oxidizing agents
 Hazardous Decomposition Products:
 Carbon monoxide, irritating and toxic gases, irritating and toxic fumes and gases, carbon dioxide, formaldehyde.
 Hazardous Polymerization: Has not been reported.

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

RTECS#:
 CAS# 50-00-0: LP8925000
 CAS# 67-56-1: FC1400000
 CAS# 7558-79-4: WC4500000
 CAS# 7732-18-5: ZC0110000
 CAS# 10049-21-5 unlisted.
 LD50/LC50:
 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, skin: 2 mg/24H Severe; Draize test, rabbit, skin: 50 mg/24H Moderate; Inhalation, mouse: LC50 = 454

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gm/m³/4H; Inhalation, rat: LC50 = 203 mg/m³; Oral, mouse: LD50 = 42 mg/kg; Oral, rat: LD50 = 100 mg/kg; Skin, rabbit: LD50 = 270 uL/kg.
 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, 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# 7558-79-4.
 CAS# 7732-18-5.
 CAS# 10049-21-5.

Carcinogenicity:
 Formaldehyde -
 ACGIH: A2 - Suspected Human Carcinogen
 California: carcinogen; initial date 1/1/88
 NIOSH: potential occupational carcinogen
 NTP: Suspect carcinogen
 OSHA: Possible Select carcinogen
 IARC: Group 2A carcinogen
 Methyl alcohol
 Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
 Sodium phosphate dibasic -
 Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
 Water -
 Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
 Sodium phosphate, Monobasic, Monohydrate -
 Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
 Epidemiology:
 No data available.
 Teratogenicity:
 No data available.
 Reproductive Effects:
 No data available.
 Neurotoxicity:
 No data available.
 Mutagenicity:
 No data available.
 Other Studies:
 No data available.

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

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

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
 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
 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# 7558-79-4 is listed on the TSCA inventory.
 CAS# 7732-18-5 is listed on the TSCA inventory.
 CAS# 10049-21-5 is not on the TSCA inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).
 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
 CERCLA Hazardous Substances and corresponding RQs
 CAS# 50-00-0: 100 lb final RQ; 45.4 kg final RQ
 CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ
 CAS# 7558-79-4: 5000 lb final RQ; 2270 kg final RQ
 SARA Section 302 Extremely Hazardous Substances
 CAS# 50-00-0: 500 lb TPQ; 100 lb EPCRA RQ
 SARA Codes

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CAS # 50-00-0: acute, chronic.
 CAS # 67-56-1: acute, flammable.

Section 313

This material contains Formaldehyde (CAS# 50-00-0, 4 0%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.
 This material contains Methyl alcohol (CAS# 67-56-1, 1 0 2 0%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

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.
 CAS# 7558-79-4 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:

None of the chemicals in this product are 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.

Sodium phosphate dibasic can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

Water is not present on state lists from CA, PA, MN, MA, FL, or NJ.

Sodium phosphate, Monobasic, Monohydrate 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 state of California to cause cancer.

California No Significant Risk Level:

CAS# 50-00-0: 40 ug/day NSRL

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
 R 42/43 May cause sensitization by inhalation and skin contact.
 R 45 May cause cancer.

Safety Phrases:

S 9 Keep container in a well-ventilated place.
 S 16 Keep away from sources of ignition - No smoking.
 S 33 Take precautionary measures against static discharges.

WGK (Water Danger/Protection)

CAS# 50-00-0: 2
 CAS# 67-56-1: 1
 CAS# 7558-79-4: 1
 CAS# 7732-18-5: No information available.
 CAS# 10049-21-5: 1

United Kingdom Occupational Exposure Limits

CAS# 67-56-1: OES-United Kingdom, TWA 200 ppm TWA; 266 mg/m3 TWA
 CAS# 67-56-1: OES-United Kingdom, STEL 250 ppm STEL; 333 mg/m3 STEL
 CAS# 67-56-1: OES-United Kingdom, STEL 250 ppm STEL; 333 mg/m3 STEL

United Kingdom Maximum Exposure Limits

CAS# 50-00-0: MEL-United Kingdom, TWA 2 ppm TWA; 2.5 mg/m3 TWA
 CAS# 50-00-0: MEL-United Kingdom, STEL 2 ppm STEL; 2.5 mg/m3 STEL
 CAS# 50-00-0: MEL-United Kingdom, STEL 2 ppm STEL; 2.5 mg/m3 STEL

Canada

CAS# 50-00-0 is listed on Canada's DSL List.
 CAS# 67-56-1 is listed on Canada's DSL List.
 CAS# 7558-79-4 is listed on Canada's DSL List.
 CAS# 7732-18-5 is listed on Canada's DSL List.
 This product has a WHMIS classification of B3, D1B, D2A.
 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# 7558-79-4 is not listed on Canada's Ingredient Disclosure List.
 CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.
 CAS# 10049-21-5 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

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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: 7/12/1999 Revision #6 Date: 8/15/2001

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