Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name Buffered Neutral Formalin 10%

Product Code R04586

Manufacturer EMD Chemicals Inc.
P.O. Box 70
480 Democrat Road
Gibbstown, NJ 08027
Prior to January 1, 2003 EMD Chemicals Inc. was EM Industries, Inc. or EM Science, Division of EM Industries, Inc.

Effective Date **10/14/2005**

For More Information Call
856-423-6300 Technical Service
Monday-Friday: 8:00 AM - 5:00 PM

In Case of Emergency Call
800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Synonym None.
Material Uses Laboratory Reagent
Chemical Family Mixture.

Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
Formaldehyde.	50-00-0	3.7
Methanol	67-56-1	1.5
Sodium Phosphate, Dibasic	7558-79-4	<0.7
Sodium Dihydrogen Phosphate,Monohydrate	10049-21-5	<0.5
Water	7732-18-5	>94

+ Section 3. Hazards Identification

Physical State and Appearance Liquid.

Emergency Overview WARNING !
HARMFUL IF SWALLOWED.
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
CANCER HAZARD
CONTAINS MATERIAL WHICH CAN CAUSE CANCER
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: MUCOUS MEMBRANES, GASTROINTESTINAL TRACT, RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.
WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Routes of Entry Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Potential Acute Health Effects

Eyes Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.

Skin Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Non-permeator by skin.

Inhalation Hazardous in case of inhalation (lung irritant). Non-hazardous in case of inhalation.

Ingestion Hazardous in case of ingestion. Do not take internally.

Potential Chronic Health Effects

Carcinogenic Effects Classified + (Proven.) by OSHA [Formaldehyde.]. Classified A2 (Suspected for human.) by ACGIH, 2A (Probable for human.) by IARC [Formaldehyde.].

Additional information See Toxicological Information (section 11)

Medical Conditions Aggravated by Overexposure: Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4. First Aid Measures

Eye Contact Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

+ Section 5. Fire Fighting Measures

Flammability of the Product	Non-flammable.
Auto-ignition Temperature	Not applicable.
Flash Points	Not applicable.
Flammable Limits	Not applicable.
Products of Combustion	Not applicable.
Fire Hazards in Presence of Various Substances	Not applicable.
Explosion Hazards in Presence of Various Substances	**Risks of explosion of the product in presence of static discharge:** Slightly explosive in presence of open flames, sparks and static discharge. **Risks of explosion of the product in presence of mechanical impact:** Slightly explosive in presence of shocks.
Fire Fighting Media and Instructions	Not applicable.
Protective Clothing (Fire)	Not applicable.
Special Remarks on Fire Hazards	Development of hazardous combustion gases or vapors possible in the event of fire.
Special Remarks on Explosion Hazards	Not available.

+ Section 6. Accidental Release Measures

Small Spill and Leak	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
Large Spill and Leak	Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
Spill Kit Information	The following EMD Chemicals Inc. SpillSolv (TM) absorbent is recommended for this product: SX1340 Formaldehyde Treatment Kit

Section 7. Handling and Storage

Handling	Avoid prolonged contact with eyes, skin, and clothing. Avoid contact with eyes. Do not ingest. Avoid breathing vapors or spray mists. Avoid prolonged or repeated contact with skin. Use only with adequate ventilation. Wash thoroughly after handling.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

+ Section 8. Exposure Controls/Personal Protection

Engineering Controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits.

Personal Protection

Eyes Splash goggles.

Body Lab coat.

Respiratory Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hands Gloves.

Feet Not applicable.

Protective Clothing (Pictograms)

Personal Protection in Case of a Large Spill Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Product Name	Exposure Limits
Formaldehyde.	**EH40-MEL (United Kingdom (UK), 1997).** STEL: 2.5 mg/m3 15 minute(s). STEL: 2 ppm 15 minute(s). TWA: 2.5 mg/m3 8 hour(s). TWA: 2 ppm 8 hour(s). **ACGIH (United States, 2000).** CEIL: 0.37 mg/m3 CEIL: 0.3 ppm **NIOSH REL (United States, 1994).** CEIL: 0.1 ppm 15 minute(s). TWA: 0.01 ppm 10 hour(s). **OSHA Final Rule (United States, 1989).** STEL: 2 ppm 15 minute(s). TWA: 0.75 ppm 8 hour(s). **OSHA Transitional Rule (United States, 1993).** STEL: 2 ppm 15 minute(s). TWA: 0.75 ppm 8 hour(s).

Methanol	**ACGIH (United States, 1994). Skin** TWA: 262 mg/m3 STEL: 328 mg/m3 **OSHA (United States, 1989). Skin** TWA: 260 mg/m3 STEL: 325 mg/m3 **ACGIH (United States, 1994). Skin** STEL: 328 mg/m3 15 minute(s). STEL: 250 ppm 15 minute(s). TWA: 262 mg/m3 8 hour(s). TWA: 200 ppm 8 hour(s). **NIOSH REL (United States, 1994). Skin** STEL: 325 mg/m3 15 minute(s). STEL: 250 ppm 15 minute(s). TWA: 260 mg/m3 10 hour(s). TWA: 200 ppm 10 hour(s). **OSHA Final Rule (United States, 1989). Skin** STEL: 325 mg/m3 15 minute(s). STEL: 250 ppm 15 minute(s). TWA: 260 mg/m3 8 hour(s). TWA: 200 ppm 8 hour(s).
Sodium Phosphate, Dibasic	Not available.
Sodium Dihydrogen Phosphate,Monohydrate	Not available.
Water	Not available.

Section 9. Physical and Chemical Properties

Odor	Pungent.
Color	Clear. Colorless.
Physical State and Appearance	Liquid.
Molecular Weight	Not applicable.
Molecular Formula	Not applicable.
pH	7 [Neutral.]
Boiling/Condensation Point	The lowest known value is 64.55°C (148.2°F) (Methanol). Weighted average: 99.27°C (210.7°F)
Melting/Freezing Point	May start to solidify at -0.1°C (31.8°F) based on data for: Water. Weighted average: -4.96°C (23.1°F)
Specific Gravity	Weighted average: 0.98 (Water = 1)
Vapor Pressure	The highest known value is 12.9 kPa (97 mmHg) (@ 20°C) (METHANOL).
Vapor Density	The highest known value is 1.11 (Air = 1) (METHANOL). Weighted average: 1.06 (Air = 1)
Volatility	99.9% (v/v). (METHANOL.)
Odor Threshold	The lowest known value is 0.05 ppm (Formaldehyde.) Weighted average: 28.88 ppm
Evaporation Rate	0.36 (Water) compared to(n-Butyl Acetate =1)
VOC	5 (%)
LogKow	Not available.
Solubility	Soluble in water.

+ Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Highly reactive with oxidizing agents, acids, alkalis. Slightly reactive to reactive with metals.
Rem/Incompatibility	Not available.
Hazardous Decomposition Products	COx , Na2O
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

RTECS Number:

Formaldehyde	LP8925000
Methanol	PC1400000
Sodium Phosphate, Dibasic, Anhydrous	WC4500000
Sodium dihydrogen phosphate monohydrate	Not available.
Water	ZC0110000

Toxicity	Acute oral toxicity (LD50): 100 mg/kg [Rat]. (Formaldehyde.). Acute dermal toxicity (LD50): 15800 mg/kg [Rabbit]. (Methanol). Acute toxicity of the vapor (LC50): 64000 ppm 4 hour(s) [Rat]. (Methanol).
Chronic Effects on Humans	**CARCINOGENIC EFFECTS**: Classified + (Proven.) by OSHA [Formaldehyde.]. Classified A2 (Suspected for human.) by ACGIH, 2A (Probable for human.) by IARC [Formaldehyde.].
Acute Effects on Humans	Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Non-permeator by skin. Hazardous in case of inhalation (lung irritant). Non-hazardous in case of inhalation. Hazardous in case of ingestion.
Synergetic Products (Toxicologically)	Not available.

Irritancy	Draize Test: Not available.
Sensitization	Not available.
Carcinogenic Effects	Classified + (Proven.) by OSHA [Formaldehyde.]. Classified A2 (Suspected for human.) by ACGIH, 2A (Probable for human.) by IARC [Formaldehyde.].
Toxicity to Reproductive System	Not available.
Teratogenic Effects	Not available.
Mutagenic Effects	Not available.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.

Section 13. Disposal Considerations

EPA Waste Number	U122 U154
Treatment	Incineration, fuels blending or recycle. Contact your local permitted waste disposal site (TSD) for permissible treatment sites. ALWAYS CONTACT PERMITTED WASTE DISPOSER (TSD) TO ASSURE COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

Section 14. Transport Information

DOT Classification	Not available.
TDG Classification	Not available.
IMO/IMDG Classification	Not available.
ICAO/IATA Classification	Not available.

+ Section 15. Regulatory Information

U.S. Federal Regulations	TSCA 8(b) inventory: Formaldehyde.; Methanol; Sodium Phosphate, Dibasic ; Sodium Dihydrogen Phosphate,Monohydrate; Water SARA 302/304/311/312 extremely hazardous substances: Formaldehyde. SARA 302/304 emergency planning and notification: Formaldehyde. SARA 302/304/311/312 hazardous chemicals: Formaldehyde.; Methanol; Sodium Phosphate, Dibasic SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Formaldehyde.: Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard; Methanol: Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard; Sodium Phosphate, Dibasic : Immediate (Acute) Health Hazard SARA 313 toxic chemical notification and release reporting: Formaldehyde. 3.7%; Methanol 1.5% Clean Water Act (CWA) 307: No products were found. Clean Water Act (CWA) 311: Formaldehyde.; Sodium Phosphate, Dibasic Clean air act (CAA) 112 accidental release prevention: Formaldehyde. Clean air act (CAA) 112 regulated flammable substances: No products were found. Clean air act (CAA) 112 regulated toxic substances: Formaldehyde.
WHMIS (Canada)	Class D-2A: Material causing other toxic effects (VERY TOXIC). CEPA DSL: Formaldehyde.; Methanol; Sodium Phosphate, Dibasic ; Water This product has been classifed in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.
International Regulations	
EINECS	Formaldehyde. 200-001-8 Methanol 200-659-6 Sodium Phosphate, Dibasic 231-448-7 Sodium Dihydrogen Phosphate,Monohydrate 231-449-2 Water 231-791-2
DSCL (EEC)	R22- Harmful if swallowed. R36/38- Irritating to eyes and skin.
International Lists	Australia (NICNAS): Formaldehyde.; Methanol; Sodium Phosphate, Dibasic ; Sodium Dihydrogen Phosphate,Monohydrate; Water Japan (MITI): Formaldehyde.; Methanol; Sodium Phosphate, Dibasic ; Water Japan (MOL): Formaldehyde. Korea (TCCL): Formaldehyde.; Methanol; Sodium Phosphate, Dibasic ; Water Philippines (RA6969): Formaldehyde.; Methanol; Sodium Phosphate, Dibasic ; Water China: No products were found.
State Regulations	Pennsylvania RTK: Formaldehyde.: (special hazard, environmental hazard, generic environmental hazard); Methanol: (environmental hazard, generic environmental hazard); Sodium Phosphate, Dibasic : (environmental hazard, generic environmental hazard) Massachusetts RTK: Formaldehyde.; Methanol; Sodium Phosphate, Dibasic New Jersey: Buffered Neutral Formalin 10%

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Formaldehyde.
California prop. 65 (no significant risk level): Formaldehyde.
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Formaldehyde.

Section 16. Other Information

National Fire Protection Association (U.S.A.)

Health	**2**	**1**	**0**	**Fire Hazard**
				Reactivity
				Specific Hazard

Changed Since Last Revision +

Notice to Reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.

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