MATERIAL SAFETY DATA SHEET

MSDS IDENTIFICATION NAME: TYFO® MB-3, Component B **DATE:** April 6, 2010 **PAGE:** 1 OF 6
MSDS NUMBER: TYFO-MB-3B-001 **SUPERSEDES MSDS:** Mar. 9, 2009

SECTION I: MATERIAL AND MANUFACTURER IDENTIFICATION

MANUFACTURER:
FYFE CO. LLC
8380 Miralani Drive, Suite A
San Diego, CA 92126

EMERGENCY TELEPHONE NUMBER:
800-424-9300 or 703-5217-3887
INFORMATION TELEPHONE NUMBER:
858-642-0694

PRODUCTION IDENTIFICATION NUMBER: TYFO® MB-3, Component B
CHEMICAL FAMILY: Hardener

SECTION II: HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT	CAS NUMBER	% BY WEIGHT	OSHA(PEL)	ACGIH(TLV)
Proprietary component #1	Proprietary	89-95	Not determined	Not determined
Proprietary component #2	Proprietary	5-6	Not determined	Not determined
Proprietary component #3	Proprietary	0-6	Not determined	Not determined

THE PERCENTAGES WILL VARY DEPENDING ON THE INDIVIDUAL MATERIAL OR COMPONENT VARIATION.

SECTION III: HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:

APPEARANCE AND ODOR:
Pale yellow to clear liquid with an ammonia-like odor.

STATEMENTS OF HAZARD:
DANGER! CORROSIVE! CAUSE SEVERE EYE AND SKIN BURNS.

MAY CAUSE BLINDNESS.

HARMFUL IF ABSORBED THROUGH SKIN.
HARMFUL OR FATAL IF SWALLOWED AND CAN CAUSE LUNG INJURY IF SWALLOWED AND ASPIRATED.

MAY CAUSE RESPIRATORY TRACT IRRITATION.

PRIMARY ROUTES OF EXPOSURE:
EYES--YES SKIN CONTACT--YES INHALATION--YES INGESTION--NO

HMIS RATING:
HEALTH--3 FLAMMABILITY--1 REACTIVITY--0 SPECIAL--NONE

SECTION III: HAZARD IDENTIFICATION (CONTINUED)

POTENTIAL HEALTH EFFECTS:
EYES: Cause irritation with pain and excess blinking and tear production with excess redness and swelling and chemical burns of the eye. Severe eye damage may cause blindness. This product contains one or amines which may produce temporary and reversible hazy or blurred vision.

SKIN: Causes severe irritation with pain; severe excess redness and swelling with chemical burns, blister formation and possible tissue destruction. Repeated skin contact may cause persistent irritation or dermatitis and result in the absorption of harmful amounts of material.

INHALATION: Inhalation of vapor or mist may cause irritation to the nose, throat or chest. Repeated or severe over exposure may result in difficulty in breathing, headache, nausea, vomiting and drowsiness. Prolonged or repeated over-exposure may result in lung damage.

INGESTION: Cause burning of mouth, throat and stomach with abdominal pain, nausea, vomiting, diarrhea, thirst, weakness and collapse. Aspiration may occur during swallowing or vomiting resulting in lung damage.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Preexisting conditions such as asthma, allergies, eczema, bronchitis, inflammatory or fibrotic respiratory disease and other lung and skin disorders may be aggravated by exposure to the product.

OTHER: The components present in this material at concentrations equal to or greater than 0.1% are not listed or regulated by IARC, NTP, OSHA OR ACGIH as a carcinogen. Dust from machining the cured product may cause mechanical irritation of the eyes, skin, nose, throat and upper respiratory tract.

	OSHA(PEL)	**ACGIH(TLV)**
EXPOSURE LIMITS FOR CURED PRODUCT DUST:	15 mg/m^3 (Total) 5 mg/ m^3 (Respirable)	10 mg/m^3 (Total) 3 mg/ m^3 (Respirable)

SECTION IV: FIRST AID MEASURES

EYES: In case of eye contact, immediately flush eyes with large amounts of water for at least 15 minutes, keeping the eyelids open. Get medical attention.

SKIN CONTACT: In case of contact, immediately wash skin with soap and plenty of water. Get medical attention if irritation develops.

INHALATION: If excessive inhalation of vapor occurs, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, qualified personnel may administer oxygen. Get medical attention.

INGESTION: If swallowed, get medical attention immediately. Do not induce vomiting.

SECTION V: FIRE FIGHTING MEASURES

FLASH POINT/METHOD OF DETERMINATION: Not determined

MEANS OF EXTINCTION: Use water-spray, dry chemical, foam or $C0_2$ to extinguish fires. Use water to cool containers.

SPECIAL FIRE HAZARDS: Avoid exposure through use of a self-contained, positive-pressure breathing apparatus.

SECTION VI: ACCIDENTAL RELEASE MEASURES

PROCEDURES IN CASE OF ACCIDENTAL RELEASE OF LEAKAGE: Ventilate area. Avoid breathing vapor. Use self-contained breathing apparatus or supplied air of large spills or confined areas. Avoid contact with skin, eyes or clothing (See Section VIII). Contain spill if possible. Absorb or wipe up with suitable material, put into a container and dispose of properly (See Section XIII). Prevent entry into sewers and waterways.

SECTION VII: HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Minimum feasible handling temperatures should be maintained. Avoid exposure to temperatures above 100°F/38°C. Avoid water contamination. Have an eyewash and shower available for emergencies.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE/FACE PROTECTION: Avoid eye and skin contact. Wear chemical type goggles and a faceshield.

SKIN PROTECTION: Protective clothing such as uniforms, coveralls or lab coats must be worn. Launder or dry-clean when soiled. Gloves resistant to chemicals and petroleum distillates are required. When handling large quantities, impervious suits, gloves and rubber boots must be worn.

RESPIRATORY PROTECTION: Airborne concentrations should be kept to the lowest levels possible. If vapor or mist is generated, use a NIOSH approved organic vapor respirator. Supplied air respiratory protection should be used for cleaning large spills or upon entry into tank, vessels or other confined spaces. If sufficient dust is generated during machining of the cured product, use a NIOSH approved dust respirator.

VENTILATION: Local exhaust ventilation recommended sufficient to control the vapor, mist or dust being generated. If exhaust ventilation is not available or is inadequate, use a NIOSH approved respirator, as appropriate.

GENERAL HYGIENE RECOMMENDATIONS: Before eating, drinking, smoking or using toilet facilities, wash face and hands thoroughly with soap and water. Remove any contaminated clothing and launder before reuse. Properly dispose of shoes and clothing that are extremely contaminated. Use vacuum equipment to remove cured product dust from clothing and work areas. Compressed air is not recommended.

SECTION IX: PHYSICAL AHD CHEMICAL PROPERTIES

APPEARANCE AND ODOR	Pale yellow to clear-liquid with an ammonia-like odor
BOILING POINT (°F/°C)	Not determined
MELTING POINT (°F/°C)	Not determined
SPECIFIC GRAVITY (WATER=1)	Not determined
pH OF UNDILUTED PRODUCT	11.5-12.5
VAPOR PRESSURE (mm Hg.)	Not determined
VAPOR DENSITY (AIR-1)	Not determined
VISCOSITY	Not determined
PERCENT (%) VOC	0.0%; Tested per ASTM D2369-95 with TYFO® MB-3, Component A and Component B mixed together
SOLUBILITY IN WATER	Not determined

SECTION X: STABILITY AND REACTIVITY

STABILITY: Stable under normal handling and storage conditions.

INCOMPATIBLE MATERIALS: Reacts violently with acids. Do not add nitrites. This product contains amines which can combine with nitrites or other nitrosating agents to form nitrosamines which some have been found to cause cancer in animals.

PRODUCTS EVOLVED FROM HEAT OF COMBUSTION OR DECOMPOSITION:
The products of combustion and decomposition depend on other materials present in the fire and the actual conditions of the fire. Burning will produce ammonia, combustion products of nitrogen, carbon monoxide, carbon dioxide, irritating aldehydes, ketones and other unidentified gases and vapors which may to toxic. Avoid inhalation.

HAZARDOUS POLYMERIZATIONS: Will not occur under normal conditions of use. When mixed with the resin, Component A of a resin system and/or rapid heating of the product in bulk may produce an uncontrolled exothermic reaction which may char and decompose the resin system, generating unidentified gases and vapors which may be toxic. Avoid inhalation.

SECTION XI: TOXICOLOGICAL INFORMATION

MATERIAL OR COMPONENT TOXICITY DATA:

MEDIAN LETHAL DOSE (SPECIES):

ORAL (LD_{50})	Proprietary component #1	2,880 mg/kg (Rat)
	Proprietary component #2	1,100 mg/kg (Rat)
	Proprietary component #3	3,300 mg/kg. (Rat)
DERMAL (LD_{50})	Proprietary component #1	2,980 mg/kg (Rabbit)
	Proprietary component #2	980 mg/kg (Rabbit)
	Proprietary component #3	>3,000 mg/kg (Rabbit)

IRRITATION INDEX, ESTIMATION OF IRRITATION (SPECIES):

SKIN	Proprietary component #1	(Draize) Believed to be >6.50-8.00/8.0 (Rabbit); corrosive.
	Proprietary component #2	(Draize) 4.60/8.0 (Rabbit), corrosive
	Proprietary component #3	3.25/8.0 (Rabbit), moderate irritation
EYES	Proprietary component #1	(Draize) Believed to be 80.00 110.00/110 (Rabbit), extreme irritation
	Proprietary component #2	(Draize) 94.00/110 (Rabbit), extreme irritation
	Proprietary component #3	41.5/110 (Rabbit), severe irritation
SENSITIZATION	Proprietary component #1	Negative-skin (Guinea Pig)
	Proprietary component #2	Negative-skin (Guinea Pig)

OTHER: None

SECTION XII: ECOLOGICAL INFORMATION

No ecological date has been determined.

SECTION XIII: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS: Material for disposal should be placed in appropriate sealed containers to avoid potential human and environmental exposure. It is the responsibility of the generator to comply with all federal, state, provincial and local laws and regulations. We recommend that you contact an appropriate waste disposal contractor and environmental agency for relevant laws and regulation. Under the US, Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification and to assure proper disposal.

SECTION XIV: TRANSPORTATION INFORMATION

DOT AND IATA:

PROPER SHIPPING NAME	Amines, liquid, corrosive, n.o.s. (Polyoxypropylenediamine, Polyetheramine)
HAZARD CLASS	Class 8
IDENTIFICATION NUMBER	UN 2735
PACKING GROUP	II
LABEL REQUIRED	Corrosive

SECTION XV: REGULATORY INFORMATION

SARA TITLE III:
SECTION 302/304 EXTREMELY HAZARDOUS SUBSTANCE:
None

SECTION 311 HAZARDOUS CATEGORIZATION:
Proprietary mixture, Class 1 (Acute)

SECTION 313 TOXIC CHEMICALS:
None

CERCLA SECTION 102(a) HAZARDOUS SUBSTANCE:
This product is not listed as a Hazardous Substance in 40 CFR, Part 302.4.

RCRA INFORMATION:
Currently, this product is not listed in federal hazardous waste regulation 40 CFR, Part 261.33, paragraphs (e) or (f), i.e. chemical products that are considered hazardous if they become wastes. It does not exhibit any of the hazardous characteristics listed in 40 CFR, Part 261, and Subpart C. State or local hazardous waster regulations may apply if they are different from the federal regulation. It is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification and to assure proper disposal.

WHMIS (CANADA):
CLASSIFICATION:
Class D, Division 1, Subdivision B: Toxic
Class E: Corrosive

INGREDIENT DISCLOSURE LIST:
Piperazine (CAS # 110-85-0)

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (PROPOSITION 65):
WARNING! THE STATE OF CALIFORNIA HAS DETERMINED THAT THE FOLLOWING LISTED MATERIAL OR COMPONENT CHEMICALS IN THIS PRODUCT MAY CAUSE CANCER, BIRTH DEFECT OR OTHER REPRODUCTIVE HARM:
NONE

ALL MATERIALS OF COMPONENTS OF THIS PRODUCT ARE EITHER LISTED OR ARE NOT REQUIRED TO BE LISTED IN THE EPA TSCA INVENTORY.

THIS PRODUCT DOES NOT CONTAIN OR IS NOT MANUFACTURED WITH OZONE DEPLETING SUBSTANCES AS IDENTIFIED IN THE TITLE VI, CLEAN AIR ACT "STRATOSPHERIC OZONE PROTECTION" AND THE REGULATIONS SET FORTH IN 40 CFR, PART 82.

SECTION XVI: OTHER INFORMATION

SPECIAL PRECAUTIONS: Empty containers will retain some of the product residue. When handing or disposing of them, follow all label warnings, other instructions and waste disposal procedures.

EXPLANATION AND DISCLAIMER: Wherever such words or phrases as “hazardous,” “toxic,” “carcinogen,” etc. appear herein, they are used as defined or described under state employee right-to-know laws, Federal OSHA laws or the direct sources for these laws such as the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), etc. The use of such words or phrases should not be taken to mean that we deem or imply any substance or exposure to be toxic, hazardous or otherwise harmful. **ANY EXPOSURE CAN ONLY BE UNDERSTOOD WITHIN THE ENTIRE CONTEXT OF ITS OCCURRENCE, WHICH INCLUDES SUCH FACTORS AS THE SUBSTANCE’ CHARACTERISTICS AS DEFINED IN THE MSDS, AMOUNT AND DURATION OF EXPOSURES, OTHER CHEMICALS PRESENT AND PREEXISTING INDIVIDUAL DIFFERENCES IN RESPONSE TO THE EXPOSURE.**

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APPROVED AND AUTHORIZED BY: *Edward R. Fyfe*