

MATERIAL SAFETY DATA SHEET

MSDS IDENTIFICATION NAME: TYFO® 103, Component B
MSDS NUMBER: TYFO-103B-001

DATE: April 6, 2010 **PAGE:** 1 OF 4
SUPERSEDES MSDS: 3/5/2008

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 703-527-3887
INFORMATION TELEPHONE NUMBER:
858-642-0694

PRODUCTION IDENTIFICATION NUMBER: TYFO® 103, Component B
CHEMICAL FAMILY: Amine Mixture

SECTION II: HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT	CAS NUMBER	% BY WEIGHT	OSHA(PEL)	ACGIH(TLV)	STEL
POLYAMINE	*	<75	N/E	N/E	N/E
ALIPHATIC AMINE	111-40-0	<10	10 -30 ppm	4.2 mg/m ³	N/E
BISPHENOL A	80-05-7	<5	N/E	N/E	N/E

* Specific chemical identity of this mixture is being held as trade secret information in accordance with CFR 1910.1200
N/E = NOT ESTABLISHED

SECTION III: HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:

APPEARANCE AND ODOR:

Amber Liquid with ammonia-like odor

PRIMARY ROUTES OF EXPOSURE:

EYES--Yes SKIN CONTACT--Yes INHALATION--Yes INGESTION--NO

HMS RATING:

HEALTH--3 FLAMMABILITY--1 REACTIVITY--0 SPECIAL--NONE

INHALATION:

Vapors/mist may be corrosive to upper respiratory tract. Repeated or prolonged exposure can result in lung damage. Lung damage may be evident by shortness of breath and may be accompanied by chronic cough.

EYES:

Product may cause irritation to the eyes. Corrosive to the eyes and may cause severe damage including blindness.

SKIN CONTACT:

Corrosive to the skin. May cause skin sensitization.

SKIN ABSORPTION:

No known information available.

INGESTION:

Not expected to be a relevant route of exposure. However, may cause permanent damage to mouth, throat and stomach.

CHRONIC:

Repeated exposure may cause skin sensitization, or sensitization to the respiratory tract and development of an asthmatic reaction to future exposure. Preexisting eye, skin, and respiratory disorders may be aggravated by exposure to this product.

SECTION IV: FIRST AID MEASURES

EYES: In case of eye contact, immediately flush eyes with water, lifting upper and lower lids occasionally, for at least 15 minutes. Seek medical attention.

SKIN: In case of contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Seek medical attention if irritation develops. Do not re-use clothing until thoroughly cleaned.

INHALATION: Remove victim from exposure. If difficulty with breathing, administer oxygen. If breathing has stopped, administer artificial respiration. Seek medical attention.

INGESTION: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Give one glass of water unless victim is drowsy, convulsing or unconscious. Seek medical attention.

SECTION V: FIRE FIGHTING MEASURES

FLASH POINT/METHOD OF DETERMINATION: >200°F, CC

AUTO-IGNITION TEMP.: Not available

LIMITS OF FLAMMABILITY: LEL: Not available UEL: Not available

MEANS OF EXTINCTION: Use water fog, dry chemical or CO₂ to extinguish fires. Use water to cool containers.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS: Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup, which could result in container rupture. Delayed lung damage can be experienced after exposure to combustion product. Nitrogen oxides and nitrogen containing organic compounds may be released upon combustion.

SECTION VI: ACCIDENTAL RELEASE MEASURES

PROCEDURES IN CASE OF ACCIDENTAL RELEASE OF LEAKAGE: Danger. Corrosive. Prevent all bodily contact with spilled material. Clean up personnel must be equipped with self-contained breathing apparatus, rubber gloves and protective clothing. Dike and contain the spill. Soak up residue with an absorbent such as clay, sand, or other suitable material. Dispose of the absorbent material in accordance with federal, state and local regulations. Residual resin may be removed with hot soapy water.

WASTE DISPOSAL METHOD: Dispose in compliance with federal, state and local regulations.

SECTION VII: HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Store in a cool, dry place with adequate ventilation. Store in closed containers. Keep sealed from dirt and moisture. Keep away from open flames, strong oxidizers and high temperatures.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

ADDITIONAL PROTECTIVE MEASURES: Use ventilation to control vapors or mists concentrations. Eye wash fountains and safety showers should be available for emergency use.

RESPIRATORY PROTECTION: Do not breathe vapors/mists. Use a NIOSH approved respirator to prevent overexposure. In accord with 29 cfr 1910.134, use a full face, air supplying respirator or an air-purifying respirator for organic vapors. Avoid breathing vapors which may be produced under some conditions such as application of uncured material in confined spaces or over large surfaces.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION (CONTINUED)

PROTECTIVE CLOTHING: Avoid eye and skin contact. Wear chemical resistant protective clothing, gloves, and boots. Wear chemical type goggles or glasses with safety side shields to prevent contact with eyes.

GENERAL HYGIENE RECOMMENDATIONS: Before eating, drinking, smoking or using toilet facilities, wash face and hand thoroughly with soap and water. Remove any contaminated clothing and laundry 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 AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR	Amber liquid with an ammonia-like odor
BOILING POINT (°F/°C)	N/AV
FREEZING POINT (°F/°C)	N/AV
SPECIFIC GRAVITY (WATER = 1)	1.20
pH OF UNDILUTED PRODUCT	N/AV
VAPOR PRESSURE (MM Hg.)	N/AV
VAPOR DENSITY (AIR-1)	>AIR
VISCOSITY	N/AV
PERCENT (%) VOC	0.1%
SOLUBILITY IN WATER	Negligible
ODOR THRESHOLD	N/AV
WATER/OIL DISTRIBUTION COEFFICIENT	N/AV
EVAPORATION RATE	N/AV

SECTION X: STABILITY AND REACTIVITY

STABILITY: Stable under normal handling and storage conditions.

INCOMPATIBLE MATERIALS: Avoid heat, flame and contact with strong oxidizing agents.

PRODUCTS EVOLVED FROM HEAT OF COMBUSTION OR DECOMPOSITION: Nitrogen oxides, carbon monoxide and unidentified organic compounds may be formed during combustion.

HAZARDOUS POLYMERIZATIONS: Will not occur under normal conditions of use.

SECTION XI: TOXICOLOGICAL INFORMATION

MATERIAL OR COMPONENT TOXICITY DATA:

INHALATION:	Vapors may be corrosive to upper respiratory tract.	
LC(50) INHAL.	N/AV	
EYES:	May cause severe damage including blindness.	
SKIN CONTACT:	Corrosive to the skin. In some individuals, it may cause sensitization.	
SKIN ABSORPTION:	No information available.	
INGESTION:	Not expected to be a route of entry. May cause permanent damage to mouth, throat, and stomach.	
LD (50) ORAL:	CAS NO.	
	111-40-0	3.99 g/kg (rat)
	68477-31-6	2,622 mg/kg (rat)
CHRONIC:	Product does not contain chemicals considered to be a carcinogenic by NTP, IARC, or OSHA.	

SECTION XII: ECOLOGICAL INFORMATION

Marine Pollutant: NL

(NL = Not Listed; P = Moderate; PP = Severe; ND = Not Determined)

SECTION XIII: DISPOSAL CONSIDERATIONS**WASTE DISPOSAL METHODS:** Dispose in a manner which complies with local, state and federal regulations.**SECTION XIV: TRANSPORTATION INFORMATION****DOT AND IATA:**

DOT SHIPPING NAME	polyamines, corrosive liquid, N.O.S. (Alkaline amine)
DOT HAZARD CLASS	Class 8 (corrosive liquid) , PGIII
DOT PLACARD	Corrosive
OTHER REQUIREMENTS	UN1760, Class 60

SECTION XV: REGULATORY INFORMATION**SARA TITLE III:**

SECTION 302/304: No reportable materials.

SECTION 311/ 312: Health hazard: Immediate
Physical hazard: Fire

SECTION 313: No reportable materials.

SECTION XVI: OTHER INFORMATION**SPECIAL PRECAUTIONS:** Empty containers will retain some of the product residue. When handling 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'S CHARACTERISTICS AS DEFINED IN THE MSDS, AMOUNT AND DURATION OF EXPOSURES, OTHER CHEMICAL PRESENT AND PREEXISTING INDIVIDUAL DIFFERENCES IN RESPONSE TO THE EXPOSURE.**The data provided is based on the information received from our raw material suppliers and other sources believed to be reliable. **THIS DATA DOES NOT CONSTITUTE A GUARANTEE (EXPRESSED OR IMPLIED), WARRANTY (INCLUDING A PARTICULAR PURPOSE) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY US WITH RESPECT OT THE DATA, THE PRODUCT DESCRIBED OR ITS USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO US. WE DISCLAIM LIABILITY FOR DAMAGE OR INJURY INCURRING DIRECTLY OR INDIRECTLY FROM THE US OF THIS PRODUCT.**APPROVED AND AUTHORIZED BY: *Edward R. Fyfe*