MATERIAL SAFETY DATA SHEET

DMF BLEND

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: Tarr, Incorporated
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PRODUCT NAME: **DMF BLEND**

PRODUCT NUMBER: DMFB

UPC NUMBER:

PREPARED BY: Patricia Rodabaugh

DATE PREPARED: 9/18/2002

LAST REVISION: 9/18/2002

SYNONYMS:

Portland, Oregon
Phoenix, Arizona
Auburn, Washington
Vancouver, Washington

Print Date: 10/28/2004

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV	NOTE
Xylenes, Mixed Isomers	1330-20-7	30-40	100 ppm	100 ppm	
Ethyl benzene	100-41-4	3-4	100 ppm	50 ppm (skin)	
Toluene	108-88-3	30-40	200 ppm	50 ppm (skin)	
Methyl isobutyl ketone	108-10-1	25-35	50 ppm	50 ppm	

3. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! Flammable liquid and vapor. Harmful or fatal if swallowed. Vapors are heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Can cause severe lung damage and may be fatal if swallowed. Causes skin irritation. May be harmful if swallowed. May cause CNS depression.

POTENTIAL HEALTH EFFECTS

EYE CONTACT: Liquid is moderately irritating to the eyes. High vapor concentrations may also be irritating.

INHALATION: Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death. Vapors may be irritating to the nose, throat and respiratory tract. Prolonged and repeated exposures to high concentrations may cause hearing loss. Chronic hydrocarbon abuse (for example, sniffing glue or light hydrocarbons such as contained in this material) has been associated with irregular heart rhythms and potential cardiac arrest.

INGESTION: Liquid is moderately toxic and may be harmful if swallowed. Ingestion of product may result in vomiting; aspiration (breathing) of vomitus into the lungs must be avoided as even small quantities may result in aspir. pneumontis. Serious lung damage and possibly fatal chemical pneumonia (chemical pneumonitis) can develop if this occurs. May cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Significant exposure may result in unconsciousness and death.

SKIN CONTACT: Liquid is mildly irritating to the skin. May cause a burning sensation, redness and/or swelling. Prolonged or repeated contact can result in defatting and drying of the skin which may result in a burning sensation and a dried, cracked appearance.

SIGNS AND SYMPTOMS OF EXPOSURE:

Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness, and nausea; in extreme cases, unconsciousness and death may occur. Aspiration pneumonitis may be evidenced by coughing, labored breathing and cyanosis (bluish skin).

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision or swelling persist, contact a physician.

INHALATION: Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Get medical attention.

INGESTION: DO NOT INDUCE VOMITING. Have victim rinse mouth out with water, then drink sips of water to remove taste from mouth. DO NOT GIVE LIQUIDS TO A DROWSY, CONVULSING OR UNCONSCIOUS PERSON. If vomiting occurs spontaneouusly, keep head below hips to prevent aspiration. Get medical attention.

SKIN CONTACT: Remove contaminated clothing/shoes. Wipe off excess material from exposed area. Flush with large amounts of water for at least 15 minutes, by the clock, and follow by washing with soap if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment. Do not reuse clothing until cleaned.

AGGRAVATED MEDICAL CONDITIONS:

Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product. Impared function from preexisiting disorders may be aggravated by exposure to this product. The following organs and/or organ systems may be damaged by overexposure to the material. Heart, kidney, liver, auditory system. In severe cases death may result.

SUPPLEMENTAL HEALTH INFORMATION:

Light hydrocarbons like this one have been associated with cardiac sensitization in abuser situations. Hypoxia or the injection of adrenaline-like substances enhances these effects. Note to physician: If more than 2.0 ml per kg has been ingested and vomiting has not occurred, emesis may be induced with supervision. Keep victim's head below hips to prevent aspiration.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: 60 F **FLASH POINT METHOD USED:** Tag Closed Cup

AUTOIGNITION: 986 F **LEL:** 0.008 **UEL:** 0.075

EXTINGUISHING MEDIA:

Use water fog, "alcohol" foam, dry chemical, or CO2. Do nut use a direct stream of water. Material will float and can be re-ignited on surface of water.

SPECIAL FIRE FIGHTING PROCEDURES:

WARNING. Flammable Liquid. Vapors are heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Clear fire area of unprotected personnel. Do not enter confined fire space without full bunker gear, including a positive pressure NIOSH approved SCBA. Cool fire exposed containers with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

When heated above the flash point this material emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mist or spray may be flammable at temperatures below the flash point.

COMBUSTION PRODUCTS:

Carbon monoxide and unidentified organic compounds may be formed during combustion.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

WARNING. Flammable. Ventilate area of leak or spill. Remove all sources of ignition. Clean-up personnel require protective clothing and respiratory protection from vapors. Only specially trained or qualified personnel should handle the emergency.

7. HANLDING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Do not taste or swallow. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Keep away from heat, sparks, and flame. Surfaces that are hot may ignite even liquid product in the absence of sparks or flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors are gone.

OTHER PRECAUTIONS:

KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

RESPIRATORY PROTECTION:

If exposure may or does exceed occupational exposure limits (Sec. 2) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134 use either an atmosphere-suppling respir. of an air-purifying respir. for organic vapors.

VENTILATION:

Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PROTECTIVE GLOVES:

Test data indicate the best protection is provided by butyl, neoprene or nitrile gloves.

EYE PROTECTION:

Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Where splashing is possible, full chemically resistant protective clothing (e.g., acid suit) and boots are required.

WORK / HYGENIC PRACTICES:

Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

ENGINEERING CONTROLS:

Facilities storing or utilizing this material should be equipped with and eyewash facility and a safety shower.

EXPOSURE GUIDELINES:

May be harmful or fatal if swallowed. May irritate body tissues. Use with adequate ventillation. Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

SOLUBILITY IN WATER: Solubility negligible in water

APPEARANCE AND ODOR: Clear, colorless liquid with aromatic hydrocarbon odor.

BOILING POINT:	231 F	**PERCENT VOLATILE:**	100
VAPOR PRESSURE:	7 - 22	**PH:**	neutral
EVAPORATION RATE:	Less than 1 (n-Butyl Acetate = 1)	**MOLECULAR WEIGHT:**	
POUNDS PER GALLON:	7.11	**VAPOR DENSITY:**	Heavier Than Air
SPECIFIC GRAVITY:	0.853	**OTHER PROPERTIES:**	VOC's: 7.11 lb/gal. @60 F
MELTING POINT:	-54 F		
FREEZING POINT:	NDA		

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Stable under normal conditions.

INCOMPATIBILITY:

Avoid strong oxidizers. Xylene will attack some forms of plastics, rubber and coatings.

HAZARDOUS DECOMPOSITION OR BY PRODUCTS:

Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liqiuds and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: Avoid heat, flame, and other sources of ignition.

11. TOXICOLOGY INFORMATION

This product may contain benzene (CAS No. 71-43-2) at a concentration of <5 ppm. Acute Toxicity for Xylene: Dermal - LD50, results: Approximately 5 ml/kg (rabbit); Inhalation - LC50, results: 6700 ppm (v) (rat) 4 hour(s); Oral - LD50, results: 3.523 g/kg (rat). Eye Irritation: Draize - 9.0/110 (rabbit), skin irritation: Slight to moderate (rabbit). Repeat Dose Testing: While there is no evidence that industrially acceptable levels of light hydrocarbon vapors (e.g., the occupational exposrue limit) have produced cardiac effects in humans, animals studies have shown that inhalation of high levels produced cardiac sensitazation. Such sensitization may cause fatal changes inheart rhythms, which was shown to be enhanced by hpoxia or the injection of adrenaline-like substances. Carcinogenicity: Chronic inhalation exposure to 750 ppm ethyl benzene vapor produced increased incidences of renal tubular hyperplasia and noeplasms (males and females) and testicular adenomas in F344/N rats and alveolar/bronchiolar (males) and hepatocellular (females) neoplasms in B6C3F1 mice. Genetic toxicology studies found ethyl benzene not to be mutagenic or clastogenic. The relevance of these effectgs to humans are unclear. Ethylbenzene is listed by the IARC as a Group 2B - possible carcinogen. Reproductive and Developmental Toxicity: In developmental toxicity studies conducted in laboratory animals, there is no evidence of teratogenicity following inhalation exposure to xylene, but delayed development and behavioral impairments have been observed at does levels causing no or only slight maternal toxicity. Neurotixicity: Prolonged and repeated exposures to high concentrations of some volatile hydrocarbon solvents have resulted in hearing loss in rats. Solvent abusers and noise interaction with these solvents in the work environment may cause symptoms of hearing loss. Short term repeated inhalation exposure of humans to m-xylene (200 ppm or greater) was reported to produce slight impairment of vestibular and visual function and reaction time. In these studies, there was no evidence of cumulative effects but some evidence of tolerance or adaptation. Other Information: Over exposures of humans to xylene or xylene solvent mixtures produced predominated central nervous system (CNS) efects with less common effects reported to the lung, gastrointestinal tract, liver, kidney and heart. High exposures to xylene in some animal studies, often at levels toxic to the mother, affected embryo/fetal development. The significance of this finding to humans is not known. Ethylbenzene Acute Data: LD50 Oral Rat = 3500 mg/kg, LC50 Inhalation Rat = 4000 ppm for 4 hours, LD50 Dermal Rabbit = 17.8 mL/kg.

12. ECOLOGICAL INFORMATION

Avoid uncontrolled releases of this material. Where spills are possible, a comprehensive spill response plan should be developed and implemented.

13. DISPOSAL CONSIDERATIONS

The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

14. TRANSPORTATION INFORMATION

DOT Proper Shipping Name:	Flammable liquids, n.o.s., (Toluene, Xylenes)	**PACKING GROUP:**	II
		GUIDE NUMBER:	128
HAZARD CLASS:	3	**DOT CLASS:**	Flammable liquid
UN NUMBER:	UN 1993		

15. REGULATORY INFORMATION

This product is listed on the EPA/TSCA inventory of chemical substances. Per 40 CFR part 82, this product does not contain nor was it directly manufactured with any class I or class II ozone depleting substance.

16. OTHER INFORMATON

HMIS INFORMATION: **HEALTH:** 2 **FLAMMABILITY:** 3 **REACTIVITY:** 0 **PROTECTIVE:** H

SARA Title III Information:

SARA 302:	To the best of our knowledge, this product is not listed as an extremely hazardous substance.
SARA 311/312:	This product should be reported as an immediate (acute) health hazard, delayed (chronic) health hazard, and a fire hazard.
SARA 313:	Xylene (1330-20-7), ethyl benzene (100-41-4), toluene (108-88-3), methyl isobutyl ketone (108-10-1)
Additional Information:	This product contains the following chemicals known to the State of California to cause cancer & reproductive toxicity: Benzene, Toluene

California Proposition 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the state of California to cause cancer. BENZENE.

Toluene is not known to be mutagenic or carcinogenic. However, the available human and experimental data are limited and insufficient to assess carcinogenic potential. Toluene is not listed as a carcinogen by NTP, IARC, or OSHA. Intentional abuse of toluene vapors has been linked to damage of brain, liver, kidney and to death. Many case studies involving abuse during pregnancy clearly indicate that toluene is a developmental toxicant. Developmental toxic effects comparable to those observed in humans have been seen in lab animals but the effects were generally associated with maternal toxicity.

N/A = Not Applicable
NDA = No Data Available

Disclaimer

The information contained herein is based on the data available to us and is believed to be accurate. However, Tarr, Incorporated makes no warranty, expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Tarr, Inc. assumes no responsibility for injuries from the use of the product described herein.