

-----  
M A T E R I A L S A F E T Y D A T A S H E E T

=====  
 | SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION |  
 =====

PRODUCT NAME : ENCORE MACHINE GRADE FOAM PART A  
 IDENTIFICATION NUMBER: ENCORE MACHINE GRADE FOAM PT A  
 PRODUCT USE/CLASS : Polyurethane activator

SUPPLIER:

Encore Rail Systems  
 2350 West Midway Boulevard  
 Broomfield, CO  
 INFORMATION: 866-712-7622

PREPARER: Technical Department, PHONE: 866-712-7622, PREPARE DATE: 08/18/06

=====  
 | SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS |  
 =====

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT%
01	4,4'-diphenylmethanediisocyanate	101-68-8	30.0-60.0
02	Polymethylenepolyphenyl isocyanate	9016-87-9	30.0-60.0

----- EXPOSURE LIMITS -----

ITEM	ACGIH		OSHA		COMPANY	SKIN
	TLV-TWA	TLV-STEL	PEL-TWA	PEL-CEILING	TLV-TWA	
01	0.005 ppm	0.02 ppm*	N/A	0.02ppm	NIOSH .005pp	NO
02	N.E.	N.E.	N.E.	N/E	5 ppb	NO

(See Section 16 for abbreviation legend), \* - Ceiling Value

=====  
 | SECTION 3 - HAZARDS IDENTIFICATION |  
 =====

EMERGENCY OVERVIEW: May cause target organ or system damage. Refer to chronic health effects section. Contents may develop pressure if exposed to water. At elevated temperatures, vapors are irritating to the eyes and respiratory tract. May cause allergic skin reaction. May cause allergic respiratory reaction. May cause skin and eye irritation.

ACUTE EFFECTS - EYE CONTACT: Moderately irritating to the eyes.

ACUTE EFFECTS - SKIN CONTACT: Contact causes skin irritation. May cause allergic skin reaction. Moderate irritant. Prolonged contact may cause dermatitis.

ACUTE EFFECTS - INHALATION: Harmful if inhaled. Vapors and/or aerosols formed at elevated temperatures can be irritating. Causes respiratory tract irritation. Strong respiratory sensitizer. Previously sensitized persons may experience reactions even at levels below recommended exposure limits. Symptoms may include coughing, difficulty breathing, and a feeling of tightness in the chest. Impaired lung function has been associated with extreme or repeated overexposure to isocyanates.

ACUTE EFFECTS - INGESTION: Irritating to mouth, throat and stomach, with nausea.

Continued on Page 2)

=====

```

=====|
|           SECTION 3 - HAZARDS IDENTIFICATION           |
|=====|

```

CHRONIC OVEREXPOSURE EFFECTS: \*When processed at room temperature under conditions of good general ventilation, use of this product is not expected to result in release of vapors above the recommended TLV/PEL. It should be noted, however, that chronic overexposure to isocyanate may cause respiratory sensitization which may cause future reactions even at levels below the TLV. Reaction may be immediate or delayed up to several hours after exposure. Additionally, there are reports that sensitized individuals can experience symptoms when exposed to dust, cold air, or other irritants. Such sensitization and/or increased lung sensitivity may be temporary or permanent. Dermal/respiratory cross-sensitization reactions are possible. Respiratory overexposure to isocyanates has also been reported to cause lung damage (including decrease in lung function) which may be permanent. \*Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated overexposure to 4,4'diphenylmethane (MDI) and/or polymeric MDI aerosols. Lung tumors have been observed in animals exposed to aerosol droplets for their lifetime (@ 6 mg/m3). No effects are anticipated to occur at levels at or below recommended safe exposure limits. Aerosol formation is not expected to occur under recommended usage conditions.

OTHER INFORMATION: Not Applicable.

PRIMARY ROUTE(S) OF ENTRY: INHALATION, SKIN CONTACT, EYE CONTACT,

```

=====|
|           SECTION 4 - FIRST AID MEASURES           |
|=====|

```

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT: Immediately flush affected area(s) thoroughly with water at least 15 minutes. Remove and wash contaminated clothing. Contaminated leather articles should be disposed of. Obtain medical attention.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

INGESTION: Swallowing less than an ounce will not cause significant harm. For larger amounts, do not induce vomiting, but give one or two glasses of water to drink and get medical attention.

NOTES TO PHYSICIAN: The manifestations of respiratory symptoms, including pulmonary edema, resulting from acute overexposure, may be delayed. No specific antidote. Supportive care. Treat symptomatically.

```

=====|
|           SECTION 5 - FIRE FIGHTING MEASURES           |
|=====|

```

FLASH POINT: 400 F	LOWER EXPLOSIVE LIMIT: N.A.
(PENSKY-MARTENS C.C.)	UPPER EXPLOSIVE LIMIT: N.A.

AUTOIGNITION TEMPERATURE: No data

EXTINGUISHING MEDIA:FOAM, DRY CHEMICAL, CO2

=====

=====  
| SECTION 5 - FIRE FIGHTING MEASURES |  
=====

UNUSUAL FIRE AND EXPLOSION HAZARDS: Closed containers may rupture or explode (due to pressure build-up) when exposed to extreme heat. Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion. Closed containers contaminated with water during fire suppression may rupture or explode due to pressure build-up.

SPECIAL FIREFIGHTING PROCEDURES: Use NIOSH-approved self-contained breathing apparatus and full protective clothing. Use water to cool exposed containers. Water stream directed into fire may cause frothing with subsequent spread of flame.

=====  
| SECTION 6 - ACCIDENTAL RELEASE MEASURES |  
=====

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Dike or contain spill away from drains, soil, and waterways if safe to do so. Wash spill area with soap and water. Treat waste material in waste container with neutralizing solution of 90% water, 8% concentrated ammonia, and 2% detergent. Add about 10 parts neutralizer per one part of isocyanate, with mixing. Allow to stand uncovered for 48 hours. Rinse floor with same solution as above, letting the solution remain on the contaminated area for at least 15 minutes before removal.

=====  
| SECTION 7 - HANDLING AND STORAGE |  
=====

HANDLING: Use only in a well ventilated area. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing vapors from heated material. Avoid contact with eyes, skin, and clothing. DO NOT take internally. FOR INDUSTRIAL USE ONLY.

STORAGE: Store away from heat. Store in a tightly closed container. Keep under a nitrogen blanket.

=====  
| SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION |  
=====

ENGINEERING CONTROLS: No special ventilation normally required. Local exhaust as needed to control vapor or dust levels to below lowest component TLV.

RESPIRATORY PROTECTION: If use is performed in a poorly-ventilated space, if vapor levels exceed TLV/PEL, or if effects occur, use NIOSH-approved positive-pressure supplied-air respirator in accordance with applicable health and safety regulations and manufacturer's recommendations. \*Use of vapor cartridge respirators is not recommended due to the poor warning properties of this material.

SKIN PROTECTION: Clean clothing to cover skin. Saranex gloves. Butyl rubber gloves. Nitrile gloves. Supported PVA gloves.

EYE PROTECTION: Chemical splash goggles.

OTHER PROTECTIVE EQUIPMENT: Accessible eye wash and safety shower.

HYGIENIC PRACTICES: Follow good general industrial safety practices during use. Do not smoke or eat during use. Wash after handling. Use only with adequate ventilation. DO NOT reuse empty containers without commercial clean or recondition.

Continued on Page 4)

=====

Product: TRT MACHINE GRADE FOAM PT A

Preparation Date: 08/18/06

Page 4

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE : 381 - 400 F VAPOR DENSITY : Is heavier than air  
ODOR : Mild musty ODOR THRESHOLD : No data  
APPEARANCE : Brown EVAPORATION RATE: Is slower than Butyl  
SOLUBILITY IN H2O : Reacts with water Acetate  
FREEZE POINT : No data SPECIFIC GRAVITY: 1.2392  
VAPOR PRESSURE : <0.1 mmHg @ 20C pH @ 0.0 % : N/A  
PHYSICAL STATE : Liquid VISCOSITY : Low  
COEFFICIENT OF WATER/OIL DISTRIBUTION: No data  
(See Section 16 for abbreviation legend)

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Prolonged exposure to heat. Exposure to moisture.  
INCOMPATIBILITY: Strong Lewis or mineral acids. Strong bases or oxidants.  
Metals. Surface-active compounds. Water. Alcohols. Amines.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon. Oxides of nitrogen,  
ammonia. Toxic monomers. Traces of hydrogen cyanide in oxygen-deficient  
environments.

HAZARDOUS POLYMERIZATION: Could occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

SECTION 11 - TOXICOLOGICAL PROPERTIES

COMPONENT TOXICOLOGICAL INFORMATION:

CHEMICAL NAME	LD50	LC50
4,4'-diphenylmethanediisocyanate	Orl-rat=9200mg/m3	Inh-rat=178mg/m3
Polymethylenepolyphenyl isocyanate	Derm-rbt >10 g/kg	No data

SECTION 12 - ECOLOGICAL INFORMATION

ECOLOGICAL TEST DATA: Not Applicable.

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Review all current federal, state, and local regulations  
regarding health and disposal for appropriate disposal procedures.  
Product disposed of in "as sold" condition is not considered a hazardous  
waste per Federal RCRA regulations. Landfilling of free liquid NOT  
recommended. Treatment with stabilization or incineration recommended  
for liquid.

SECTION 14 - TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Not regulated

DOT TECHNICAL NAME: N/A

DOT HAZARD CLASS: N/A

HAZARD SUBCLASS: N/A

DOT UN/NA NUMBER: N/A

PACKING GROUP: N/A

RESP. GUIDE PAGE:

INTERNATIONAL SHIPPING NAME: Not regulated

INTERNATIONAL ID NUMBER: N/A

IMDG CLASS (1∞,2∞): N/A

PACKING GROUP: N/A

IMDG EMS: N/A

IATA CLASS (1∞,2∞): N/A

Continued on Page 5)

```

=====
|                                     |
|                SECTION 15 - REGULATORY INFORMATION                |
|                                     |
=====

```

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

CERCLA - SARA HAZARD CATEGORY:

This product has been reviewed, and is considered, under applicable definitions, to meet the following categories:  
IMMEDIATE HEALTH HAZARD CHRONIC HEALTH HAZARD

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 and 40 CFR part 372:

----- CHEMICAL NAME -----	CAS NUMBER	WT/WT % IS LESS THAN
4,4'-diphenylmethanediisocyanate	101-68-8	30.0-60.0

TOXIC SUBSTANCES CONTROL ACT:

The chemical substances in this product are on the TSCA Section 8 Inventory.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States: NONE

NEW JERSEY RIGHT-TO-KNOW:

The following materials are non-hazardous, but are among the top five components in this product:

----- CHEMICAL NAME -----	CAS NUMBER
---------------------------	------------

No non-hazardous materials are among the top five ingredients.

PENNSYLVANIA RIGHT-TO-KNOW:

The following non-hazardous ingredients are present in the product at greater than 3%:

----- CHEMICAL NAME -----	CAS NUMBER
---------------------------	------------

No non-hazardous ingredients are present at greater than 3%.

CALIFORNIA PROPOSITION 65:

No Proposition 65 chemicals known to exist in this product.

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for use of the 16 headings.

CANADIAN WHMIS CLASS: D2A

COMPONENT RCRA CLASSIFICATIONS: Not regulated

COMPONENT RCRA CODES: Not Applicable.

CERCLA RQ VALUE (MINIMUM): None known

```

=====
|                                     |
|                SECTION 16 - OTHER INFORMATION                |
|                                     |
=====

```

HMIS RATINGS - HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 1

PREVIOUS MSDS REVISION DATE: 03/03/06

REASON FOR REVISION: revised format

VOLATILE ORGANIC COMPOUNDS (VOCS): 0 grams/ltr

Continued on Page 6)

=====

=====  
| SECTION 16 - OTHER INFORMATION |  
=====

LEGEND: N.A. - Not Applicable, N.E. - Not Established,  
N.D. - Not Determined

ABBREVIATIONS: ACGIH = American Conference of Governmental Industrial Hygienists; OSHA = US Occupational Health and Safety Administration; UK = United Kingdom; TLV-TWA = Threshold Limit Value-Time Weighted Average (8 hrs); STEL = Short-Term Exposure Limit (15 min); C = Ceiling Value; PEL = Permissible Exposure Limit

DISCLAIMER: To the best of our knowledge, the information contained in this MSDS is accurate or is obtained from sources believed to be accurate. However, no liability, expressed or implied, is assumed for the accuracy or completeness of the information contained herein. Buyer assumes liability in its use of the material.

=====  
=====

<END OF MSDS>