

MATERIAL SAFETY DATA SHEET**SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT NAME: ECCOSTOCK® SH

DESCRIPTION: Toluene Diisocyanate-based Urethane Foam

INTENDED USE: **Load Low Loss/Low Dielectric Foam Product** - Rigid, closed-cell, polyurethane foam sheet series capable of withstanding temperatures as high as 275 °F

COMPANY NAME: Emerson & Cuming Microwave Products, Inc.
ADDRESS: 28 York Ave, Randolph, MA 02368

CONTACT: 781-961-9600

EMERGENCY PHONE NUMBER CHEMTREC USA: 1-800-424-9300
 INTERNATIONAL: 703-527-3887 (COLLECT)

DATE OF MSDS REVISION: 09-19-2011

SECTION 2. COMPOSITION AND INFORMATION ON INGREDIENTS

| ELEMENT | CAS NUMBER | WEIGHT PERCENT | OSHA PEL* (mg/m ³) | |
|---|------------|----------------|--------------------------------|-----------|
| | | | TWA | STEL |
| Cured Toluene Diisocyanate-based Urethane Foam. May contain traces of: Toluene-2,4-Diisocyanate | 584-84-9 | Unknown | NE [0.036] | NE [0.14] |

*ACGIH TLVs different from OSHA PELs are shown in brackets. NE = Not Established.

All components of this product are listed on the EPA Toxic Substance Control Act Inventory

(*)This material is regulated by the SARA amendments to RCRA.

SECTION 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Danger: Poison. Seek medical attention if inhaled or ingested. Contains Toluene Diisocyanate (TDI). Contact with eyes and skin results in serious burns. Inhalation of vapors causes severe irritation to lungs. Pulmonary edema may occur.

POTENTIAL HEALTH EFFECTS:

Pulmonary edema may occur. Pulmonary sensitization can occur in some individuals leading to asthma-like spasms of the bronchial tubes and difficulty breathing. Individuals with a history of respiratory illness, asthmatic conditions, eye damage or TDI sensitization should not be exposed to this product. TDI is included in the NTP Annual Report on carcinogens. Preliminary results from a TDI health study indicate that overexposure to a respiratory irritant (chlorine or phosgene for example), resulting in lower respiratory tract symptoms could increase the risks of developing asthma-like reactions from subsequent TDI exposure.

INHALATION:

TDI is severely toxic to the respiratory system and to the mucous membranes. Inhalation of TDI vapors at low concentrations can cause respiratory and mucous membrane irritation, tightness of the chest, coughing, headache, shortness of breath, difficulty in breathing and reduction in lung function. Full development of symptoms may be delayed for several hours after an overexposure has taken place. Extensive exposure to TDI vapors by inhalation can cause bronchitis, bronchial spasm, pulmonary edema.

INGESTION:

If swallowed, TDI can cause irritation and corrosive action in the mouth, stomach and digestive tract.

SKIN:

TDI is a skin irritant. Prolonged contact with skin can cause reddening, swelling, blistering, and in some individuals skin sensitization and dermatitis.

EYES:

TDI is severely irritating to eyes. Corneal injury can occur which can be slow to heal.

CHRONIC HEALTH EFFECTS:

Overexposure to TDI has resulted in decreased pulmonary function and fibrosis in workers. Oral gavage administration of TDI in corn oil to rats and mice for two years resulted in an increased incidence of tumors. Six hour daily inhalation exposures to rats and mice of 0.05 and 0.15 ppm TDI for two years did not produce tumors. Since inhalation is the usual route of human exposure, the carcinogenic potential of TDI to

humans has not been established. However, TDI is included in the NTP list of substances "reasonably anticipated" to be carcinogenic in humans.

TARGET ORGANS:

Skin, eyes, respiratory organs

CARCINOGENICITY:

Carcinogenic effects: IARC Carcinogen List – YES

NTP Carcinogen List – YES

OSHA Carcinogenic List – NO

California Proposition 65 Information:

WARNING: This product contains a chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm: Toluene (108-88-3)

CONDITIONS AGGRAVATED BY EXPOSURE:

TDI is a pronounced allergic sensitizer. Therefore much lower levels of exposure can cause severe problems in persons who have been sensitized. Symptoms can be immediate or delayed, and include chest tightness, wheezing, coughing, shortness of breath, or asthmatic attacks. Persons with asthma-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with isocyanates.

SECTION 4. EMERGENCY AND FIRST AID MEASURES

INHALATION:

Remove the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible.

INGESTION:

DO NOT induce vomiting. If victim is conscious and alert, dilute by giving water to drink. Never give anything by mouth to a drowsy, unconscious, or convulsing person. Get immediate medical attention.

SKIN:

Remove any contaminated clothing and flush the affected area of the skin thoroughly with plenty of water. Follow by washing with soap and water. Seek medical attention. Do not reuse contaminated clothing until properly cleaned.

EYES:

Immediately wash (irrigate) the eyes with large amounts of water, occasionally lifting the lower and upper lids. Get medical attention immediately.

MEDICAL TREATMENT:

Treat symptoms and eliminate overexposure.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point:

Not established

Explosive Limits:

Not established

Extinguishing Media:

Use carbon dioxide, dry chemical, foam, water fog.

Special Firefighting Procedures:

Firefighters/rescue personnel should wear positive pressure self contained breathing apparatus and full protective equipment. Cool exposed containers

with water to prevent pressure buildup. If large quantities of material are involved, evacuate area and fight fire from a safe distance.

Unusual Fire/Explosion Hazards: During combustion and decomposition, irritating and toxic gases/vapors including nitrogen oxides and isocyanate vapors will be generated. This material contains isocyanate which is highly reactive with water or steam. Keep dry. Water or moist air should never be in contact with this material in a closed container since CO₂ will be liberated and generate high internal gas pressure.

NFPA and HMIS Rating: Flammability: 1 Health: 3
Reactivity: 2 Special Hazards: none

Autoignition Temperature: Not established

SECTION 6. ACCIDENTAL RELEASE MEASURES

Spill response operations must be conducted in accordance with the provisions of OSHA 29 CFR 1910.120. Review the entire MSDS before proceeding with spill response.

Small Spills: Not applicable (cured material)

Large Spills: Not applicable (cured material)

SECTION 7. HANDLING AND STORAGE

The recommendations described in this section are provided as general guidance for minimizing exposure when handling this product. Because usage conditions will vary depending on customer application, specific safe handling procedures should be developed by a person knowledgeable in the intended usage conditions and equipment. Employees must be properly trained in safe handling of this product prior to use.

Personal Protection: Dusts generated during machining or grinding operations may cause skin and eye irritation. Wear proper eye protection during operations that may involve machining or grinding of material. Wear appropriate protective gloves. Normal work clothing should be washed before reuse. Wash hands and face thoroughly after handling this product and before eating, drinking or smoking.

Ventilation Recommendations and Respiratory Protection:

Provide effective mechanical exhaust ventilation to draw dusts or fumes away from the worker during machining operations and prevent routine inhalation. Ventilation must be sufficient to maintain airborne levels of Section 2 ingredients below PEL/TLV values. Use an appropriate, properly fitted respirator if exposures exceed PEL/TLV values. The type of respiratory protection selected (SCBA, air-purifying, etc.) will depend on the conditions of use. Observe OSHA regulations for respiratory protection (29 CFR 1910.134). When evaluating ventilation and respirator requirements, it must be noted that susceptible workers may experience allergic respiratory reactions at levels below the PEL/TLV; and that engineering controls and personal protective equipment may not be sufficient to protect persons already sensitized to this material.

Storage: Keep away from open flames and heat sources. Consult the product Technical Bulletin for detailed storage information.

SECTION 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

| | |
|--|--|
| VENTILATION AND ENGINEERING CONTROLS: | Monitor the workplace to be sure that OSHA PEL levels are not exceeded. Good ventilation is necessary to avoid inhalation. |
| RESPIRATORY PROTECTION: | Use NIOSH-approved respirator or air supply respirator (positive pressure) at all times when Toluene diisocyanate vapors may be present at levels near or at the OSHA PEL level. Monitor the workplace to be sure that OSHA PEL levels are not exceeded. |
| PROTECTIVE GLOVES: | Wear Neoprene, butyl rubber or other solvent-resistant gloves with gauntlets to give maximum skin protection. |
| EYE PROTECTION: | Wear side-shield chemical safety goggles or full face shield. |
| OTHER PROTECTIVE EQUIPMENT: | Wear disposable protective coveralls to keep material off skin and clothing. Discard disposable protective coveralls every day. If clothing becomes wet or contaminated with product, remove clothing immediately. Have employee shower and scrub down thoroughly with soap and water immediately and at the end of the work shift. Any clothing that is contaminated with TDI should not be re-worn. It should either be discarded, or the TDI removed from the clothing. If the clothing is to be laundered or otherwise cleaned, the person performing the operation must be informed of the hazardous properties of TDI. |
| OTHER REQUIREMENTS: | Wash hands and face thoroughly after handling this product and before eating, drinking or smoking. Emergency eye wash facilities and safety shower must be available. |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|-----------------|
| Appearance: | Cured Pink Foam |
| Odor: | Not established |
| Volatile Organic Compound content: | Not established |
| Physical State: | Solid |
| Boiling Point: | Not established |
| Vapor Pressure: | Not established |
| Evaporation Rate: | Not established |
| Specific Gravity: | 0.03-0.14 |
| Vapor Density: | Not established |
| Solubility in Water: | Not established |

SECTION 10. STABILITY AND REACTIVITY

| | |
|--|--|
| Stability: | Product is stable under normal handling and storage conditions. However, review reactivity data concerning conditions to avoid and incompatible substances. |
| Incompatibility: | Direct contact with strong oxidizers, acids, bases. |
| Hazardous Decomposition Products: | Carbon dioxide, carbon monoxide, aldehydes, organic acids, isocyanates; traces of cyanides may be formed during combustion. The chemical nature and quantity of decomposition by-products will vary widely depending on the condition of combustion. |
| Hazardous Polymerization: | Data not available. |
| Conditions to Avoid: | Avoid exposure to open flame or heat sources, and direct contact with incompatible substances. |

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological Data for Toluene-2,4-Diisocyanate (TDI):

TDI is very toxic, and may be fatal, if inhaled. Skin, eye and respiratory irritant. Inhalation or skin contact may cause sensitization. Limited evidence of carcinogenicity. Note that this material is an important cause of occupational asthma.

Oral gavage administration of TDI in corn oil to rats and mice for two years resulted in an increased incidence of tumors. Six hour daily inhalation exposures to rats and mice of 0.05 and 0.15 ppm TDI for two years did not produce tumors. Since inhalation is the usual route of human exposure, the carcinogenic potential of TDI to humans has not been established. However, TDI is included in the NTP list of substances "reasonably anticipated" to be carcinogenic in humans.

Acute Oral Toxicity

LD50: 4,130-5,110 mg/kg (Rat, Male/Female)

Acute Inhalation Toxicity

LC50: 66 ppm (480 mg/m³), 1 hour (Rat, Male/Female)

LC50: 49-50.4 ppm (350-360 mg/m³), aerosol, 4 h (Rat, Male/Female)

RD50: 2.12 ppm, vapor 3 hour (Rat, Male)

Acute Dermal Toxicity

LD50: >9,400 mg/kg (Rabbit, Male/Female)

SECTION 12. ECOLOGICAL INFORMATION

Ecological data not established for Toluene-2,4-Diisocyanate

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal: Incinerate waste TDI in a RCRA-permitted facility.
Container Disposal: Empty containers (as defined by RCRA, Section 261.7 and applicable state regulations) should be neutralized before leaving the generator facility and punctured or crushed to prevent reuse. TDI is listed as a hazardous waste and requires special handling for disposal. Also, under no circumstances should empty drums be burned or cut open with a gas or electric torch as toxic decomposition products may be liberated.

SECTION 14. TRANSPORT INFORMATION

| | |
|---|----------------------|
| DOT Hazardous Material Description | Not available |
| Proper Shipping Name | Toluene Diisocyanate |
| Hazard Class | 6.1 |
| ID Number | UN2078 |
| Packing Group | II |
| Canadian Transportation of Dangerous Goods Classification: | 156 |

SECTION 15. REGULATORY INFORMATION

TSCA Status: All compounds of this product are listed in the EPA Toxic Substance Control Act Inventory.

SARA Section 313 Information: The components listed in Section 2 that are substances regulated by the SARA Section 313 amendments to RCRA are as follows: Toluene-2,4-Diisocyanate (584-84-9)

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

WHMIS (Canada):

CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):

R26- Very toxic by inhalation. R38- Irritating to skin. R41- Risk of serious damage to eyes. R45- May cause cancer.

SECTION 16. OTHER INFORMATION

DISCLAIMER OF LIABILITY

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.