

## SAFETY DATA SHEET

## 1. Identification

<b>Product identifier</b>	<b>TuffRez MMP Primer - Hardener/ Side B</b>	
<b>Other means of identification</b>		
<b>SKU#</b>	TR010H	
<b>Recommended use</b>	Not available.	
<b>Recommended restrictions</b>	None known.	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Manufacturer</b>		
<b>Company name</b>	ITW Engineered Polymers	
<b>Address</b>	130 Commerce Drive Montgomeryville, PA 18936 US	
<b>Telephone</b>	US Customer Service	(215) 855-8450
<b>Website</b>	www.itwcoatings.com	
<b>E-mail</b>	orders@itwcoatings.com	
<b>Contact person</b>	EHS Department	
<b>Emergency phone number</b>	CHEMTREC	(800) 424-9300
	International	(703) 527-3887

## 2. Hazard(s) identification

<b>Physical hazards</b>	Flammable liquids	Category 4
<b>Health hazards</b>	Acute toxicity, oral	Category 4
	Acute toxicity, dermal	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
<b>OSHA defined hazards</b>	Not classified.	

## Label elements



<b>Signal word</b>	Danger
<b>Hazard statement</b>	Combustible liquid. Harmful if swallowed. Harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>Prevention</b>	Keep away from flames and hot surfaces-No smoking. Wear protective gloves/eye protection/face protection. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing. In case of inadequate ventilation wear respiratory protection.
<b>Response</b>	If swallowed: Call a poison center/doctor if you feel unwell. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse mouth. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. If experiencing respiratory symptoms: Call a poison center/doctor. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.
<b>Storage</b>	Store in a well-ventilated place. Keep cool.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	Not classified.

<b>Environmental hazards</b>	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 3

#### Supplemental information

<b>Hazard statement</b>	Toxic to aquatic life. Harmful to aquatic life with long lasting effects.
<b>Prevention</b>	Avoid release to the environment.

68.55% of the mixture consists of component(s) of unknown acute oral toxicity. 76.19% of the mixture consists of component(s) of unknown acute dermal toxicity. 84.82% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment.

### 3. Composition/information on ingredients

#### Mixtures

<b>Hazardous components</b>			
<b>Chemical name</b>	<b>Common name and synonyms</b>	<b>CAS number</b>	<b>%</b>
4-tert-butylphenol		98-54-4	10 - 30
1,3-Benzenedimethanamine		1477-55-0	5 - 10
Trimethylhexamethylendiamin		25620-58-0	5 - 10
Diethylenetriamine		111-40-0	1 - 5
Ethylenediamine		107-15-3	1 - 5
Piperazine		110-85-0	1 - 5
Triethylolamine		102-71-6	1 - 5
Nonylphenol		25154-52-3	< 1
Other components below reportable levels			60 - 100

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

### 4. First-aid measures

<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
<b>Skin contact</b>	Remove contaminated clothing. Wash off with soap and plenty of water. If skin irritation or rash occurs: Get medical advice/attention. For minor skin contact, avoid spreading material on unaffected skin.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
<b>Most important symptoms/effects, acute and delayed</b>	Irritation of eyes and mucous membranes. May cause allergic skin reaction. May cause allergic respiratory reaction.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Wash contaminated clothing before reuse.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	By heating and fire, harmful vapors/gases may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.
<b>Fire-fighting equipment/instructions</b>	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk. In the event of fire and/or explosion do not breathe fumes.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors or mists. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the MSDS.

**Methods and materials for containment and cleaning up** Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. For waste disposal, see section 13 of the MSDS.

**Environmental precautions** Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

**Precautions for safe handling** Keep away from open flames, hot surfaces and sources of ignition. Do not get this material in contact with skin. Do not taste or swallow. Avoid breathing vapor. Avoid contact with eyes. Avoid prolonged exposure. Avoid contact with clothing. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Avoid release to the environment. Do not empty into drains.

**Conditions for safe storage, including any incompatibilities** Keep away from heat, sparks and open flame. Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Keep in an area equipped with sprinklers.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Ethylenediamine (CAS 107-15-3)	PEL	25 mg/m3 10 ppm

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
1,3-Benzenedimethanamine (CAS 1477-55-0)	Ceiling	0.1 mg/m3	
Diethylenetriamine (CAS 111-40-0)	TWA	1 ppm	
Ethylenediamine (CAS 107-15-3)	TWA	10 ppm	
Piperazine (CAS 110-85-0)	TWA	0.03 ppm	Inhalable fraction and vapor.
Triethylamine (CAS 102-71-6)	TWA	5 mg/m3	

#### US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
1,3-Benzenedimethanamine (CAS 1477-55-0)	Ceiling	0.1 mg/m3
Diethylenetriamine (CAS 111-40-0)	TWA	4 mg/m3 1 ppm

**US. NIOSH: Pocket Guide to Chemical Hazards**

Components	Type	Value
Ethylenediamine (CAS 107-15-3)	TWA	25 mg/m3 10 ppm

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Exposure guidelines****US - California OELs: Skin designation**

1,3-Benzenedimethanamine (CAS 1477-55-0) Can be absorbed through the skin.  
Diethylenetriamine (CAS 111-40-0) Can be absorbed through the skin.

**US - Minnesota Haz Subs: Skin designation applies**

Diethylenetriamine (CAS 111-40-0) Skin designation applies.

**US - Tennessee OELs: Skin designation**

1,3-Benzenedimethanamine (CAS 1477-55-0) Can be absorbed through the skin.

**US ACGIH Threshold Limit Values: Skin designation**

1,3-Benzenedimethanamine (CAS 1477-55-0) Can be absorbed through the skin.  
Diethylenetriamine (CAS 111-40-0) Can be absorbed through the skin.  
Ethylenediamine (CAS 107-15-3) Can be absorbed through the skin.

**US NIOSH Pocket Guide to Chemical Hazards: Skin designation**

1,3-Benzenedimethanamine (CAS 1477-55-0) Can be absorbed through the skin.  
Diethylenetriamine (CAS 111-40-0) Can be absorbed through the skin.

**Appropriate engineering controls**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields (or goggles). Wear a full-face respirator, if needed.

**Hand protection** Wear protective gloves.

**Other** Wear appropriate chemical resistant clothing.

**Respiratory protection** Wear positive pressure self-contained breathing apparatus (SCBA).

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

**9. Physical and chemical properties**

<b>Appearance</b>	Liquid.
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Amber
<b>Odor</b>	Slight.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	> 175.00 °F (> 79.44 °C)
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.

<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Flammability class</b>	Combustible IIIA estimated
<b>Specific gravity</b>	0.99
<b>VOC (Weight %)</b>	0.28 lb/gal Mixed components

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Heat, flames and sparks. Avoid temperatures exceeding the flash point.
<b>Incompatible materials</b>	Alkaline metals. Peroxides. Phenols.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion</b>	Harmful if swallowed.
<b>Inhalation</b>	Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>Skin contact</b>	Harmful in contact with skin. May cause an allergic skin reaction.
	Prolonged or repeated exposure may cause liver and kidney damage. These effects have not been observed in humans.
<b>Eye contact</b>	Causes serious eye irritation.

<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Irritant effects.
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### Information on toxicological effects

<b>Acute toxicity</b>	Harmful if inhaled. Harmful if swallowed. Harmful in contact with skin. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction.
<b>Skin corrosion/irritation</b>	Causes skin irritation.
<b>Serious eye damage/eye irritation</b>	Causes serious eye irritation.
<b>Respiratory sensitization</b>	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>Skin sensitization</b>	May cause an allergic skin reaction.
	Prolonged or repeated exposure may cause liver and kidney damage. These effects have not been observed in humans.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	Due to lack of data the classification is not possible.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	
Triethylamine (CAS 102-71-6)	3 Not classifiable as to carcinogenicity to humans.
<b>Reproductive toxicity</b>	Not available.
<b>Specific target organ toxicity - single exposure</b>	Due to lack of data the classification is not possible.

<b>Specific target organ toxicity - repeated exposure</b>	Due to lack of data the classification is not possible.
<b>Aspiration hazard</b>	Due to lack of data the classification is not possible.
<b>Chronic effects</b>	Prolonged inhalation may be harmful. May be harmful if absorbed through skin.  Prolonged or repeated exposure may cause liver and kidney damage. These effects have not been observed in humans.

## 12. Ecological information

<b>Ecotoxicity</b>	Toxic to aquatic life. Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.
<b>Persistence and degradability</b>	No data is available on the degradability of this product.
<b>Bioaccumulative potential</b>	No data available for this product.
<b>Partition coefficient n-octanol / water (log Kow)</b>	
Triethylamine	-1
Piperazine	-1.17
Ethylenediamine	-2.04, at pH 13
Nonylphenol	5.71
<b>Mobility in soil</b>	Not available.
<b>Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

<b>DOT</b>	Not regulated as a hazardous material by DOT.
<b>IATA</b>	Not regulated as a dangerous good.
<b>IMDG</b>	Not regulated as a dangerous good.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	This substance/mixture is not intended to be transported in bulk.

## 15. Regulatory information

<b>US federal regulations</b>	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.	
<b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)</b>		
Not regulated.		
<b>CERCLA Hazardous Substance List (40 CFR 302.4)</b>		
Ethylenediamine (CAS 107-15-3)	LISTED	
<b>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>		
Not listed.		
<b>SARA 304 Emergency release notification</b>		
Ethylenediamine (CAS 107-15-3)	5000 lbs	

## Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories** Immediate Hazard - No  
Delayed Hazard - Yes  
Fire Hazard - Yes  
Pressure Hazard - No  
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance** No

**SARA 311/312 Hazardous chemical** No

## Other federal regulations

### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Ethylenediamine (CAS 107-15-3)

**Safe Drinking Water Act (SDWA)** Not regulated.

### DEA Essential Chemical Code Number

Not regulated.

**Food and Drug Administration (FDA)** Not regulated.

## US state regulations

### US. Massachusetts RTK - Substance List

1,3-Benzenedimethanamine (CAS 1477-55-0)  
Diethylenetriamine (CAS 111-40-0)  
Ethylenediamine (CAS 107-15-3)  
Nonylphenol (CAS 25154-52-3)  
Piperazine (CAS 110-85-0)  
Triethylolamine (CAS 102-71-6)

### US. New Jersey Worker and Community Right-to-Know Act

Ethylenediamine (CAS 107-15-3) 500 lbs

### US. Pennsylvania RTK - Hazardous Substances

1,3-Benzenedimethanamine (CAS 1477-55-0)  
Diethylenetriamine (CAS 111-40-0)  
Ethylenediamine (CAS 107-15-3)  
Nonylphenol (CAS 25154-52-3)  
Piperazine (CAS 110-85-0)  
Triethylolamine (CAS 102-71-6)

### US. Rhode Island RTK

Ethylenediamine (CAS 107-15-3)

### US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

## International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

<b>Issue date</b>	09-03-2013
<b>Version #</b>	01
<b>Further information</b>	Not available.
<b>HMIS® ratings</b>	Health: 2* Flammability: 2 Physical hazard: 1
<b>NFPA ratings</b>	Health: 2 Flammability: 2 Instability: 1
<b>Disclaimer</b>	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release.
<b>Revision Information</b>	Product and Company Identification: Product and Company Identification Composition / Information on Ingredients: Undisclosed Ingredient Statement Physical & Chemical Properties: Multiple Properties Transport Information: Proper Shipping Name/Packing Group Regulatory Information: United States GHS: Classification