

MATERIAL SAFETY DATA SHEET

FR308 EPOXY PUTTY (COMPONENT B – HARDENER)

Section 1. Chemical Product And Company Identification

Common Name: FR308 Epoxy Putty (Component B – Hardener) **Code:** FR308
Synonym: Not available **Validation Date:** 15.04.2013
Trade Name: FR308 **Print Date:** 15.04.2013
 (Component B – Hardener)
Material Uses: Putty
Manufacturer: Star International, Star House, Turbine Road, Turbine Business Park, Birkenhead, Merseyside, CH41 9BA
 Tel: +44 (0) 1244 504 500
www.star-international.co.uk

Section 2. Composition, Information on Ingredients

Substance/Preparation: Preparation

Ingredient Name	CAS Number	%	EC Number	EU/SABS 0265 Classification
Calcium Carbonate	N/a	<50	N/a	Not regulated
Magnesium Silicate	N/a	<40	N/a	Not regulated
Formulated Polyaminoamide	68910-90-7	>20		R20/22 R42/43 S16/24/25
See Section 16 for the full text of the R Phrases declared above				

* Occupational Exposure Limit(s), if available, are listed in section 8

Section 3. Hazardous Identification

The preparation is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification: Xi; R36/38
 R43
Human health hazards: Irritating to eyes and skin.
 May cause sensitisation by skin contact.
See Section 11 for more detailed information on health effects and symptoms.

Section 4. First Aid Measures

Eye Contact: In cases of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin Contact: Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation: If inhaled, remove to fresh air. Get medical attention if symptoms appear.
Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.
Notes to Physician: No specific treatment, treat symptomatically.
See Section 11 for more detailed information on health effects and symptoms.

Section 5. Fire Fighting Measures

Flammability of the Product:	May be combustible at high temperatures
Auto-ignition Temperature:	The lowest known value is 336.9°C (638.4°F) (Triethylenetetramine).
Flash Points:	The lowest known value is Closed cup: 98.9°C (210°F). Open cup: 97.9°C (208°F). (Cleveland). (Diethylenetriamine).
Flammable Limits:	Not available
Products of Combustion:	These products are carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂ ...).
Fire Hazards in Presence of Various Substances:	Slightly flammable to flammable in presence of open flames, sparks and static discharge, or heat.
Explosion Hazards in Presence of Various Substances:	None identified
Fire Fighting Media and Instructions:	In case of fire, use water spray (fog), foam, dry chemical, or CO ₂ .
Special protective Equipment for fire-fighters:	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
Special Remarks on Fire Hazards:	When heated to decomposition, it emits toxic fumes. (Diethylenetriamine)
Special Remarks on Explosion Hazards:	No additional remark.

Section 6. Accidental Release Measures

Personal precautions:	Use suitable protective equipment (Section 8). Follow all fire fighting procedures (Section 5).
Environmental Precautions and Clean-up Methods:	Minimize contact of spilled material with soils to prevent runoff to surface waterways. See Section 13 for Waste Disposal Information. If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills like spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

Note: See section 8 for personal protective equipment and section 13 for waste disposal.

Section 7. Handling and Storage

Handling:	Do not ingest. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Use suitable protective equipment (Section 8).
Storage:	Keep container tightly closed. Keep container in a cool, well-ventilated area.
Packaging materials Recommended:	Use original container.

Section 8. Exposure Controls, Personal Protection

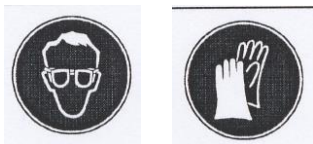
Exposure Controls

Occupational exposure

Controls:	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Respiratory protection:	A respirator is not needed under normal and intended conditions of product use. Wear appropriate respirator when ventilation is inadequate.
Hand protection:	Rubber gloves. Neoprene gloves.
Eye protection:	Safety glasses. Goggles, face shield, or other full-face protection if potential exists for direct exposure to aerosols or splashes.
Skin protection:	Additional body garments should be used based upon the task being performed (e.g. sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Appropriate techniques should be used to remove potentially contaminated clothing.

Section 8. Exposure Controls, Personal Protection (Continue/...)

Personal protective
Equipment (Pictograms):



Occupational exposure limits:

Ingredient Name:	Occupational Exposure Limits
Calcium Carbonate	OSHA permissible exposure limit (PEL) 15 mg/m ³ total dust, 5 mg/m ³ respirable fraction for nuisance dusts ACGIH Threshold limit value (TVL) 10mg/m ³ total dust containing no asbestos and < 1% crystalline silica for particulates not otherwise classified
Magnesium Silicate	OSHA permissible exposure limit (PEL) 20 MPPCF for talc containing no asbestos ACGIH Threshold limit value (TVL) 2 mg/m ³ (TWA) respirable dust for talc containing no asbestos

Engineering control measures: A system of local and/or general exhaust is recommended to keep employee exposures below the airborne exposure limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Personal protection – respiratory: If the exposure limit is exceeded a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respiratory supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator.

Personal protection – hands: Gloves

Personal protection – eye: Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

Personal protection – skin: Lab coat, apron or coveralls

Other protection: None

Triethylenetetramine **AIHA WHEEL (United States, 2003). Skin Notes:**
TWA: 1 ppm 8 hour(s)

Section 9. Physical and Chemical Properties

Physical State and

Appearance: Putty

Colour: Beige

Odour: Not available

Taste: Not available

Molecular Weight: Not applicable

Molecular Formula: Not applicable

pH: Basic

Boiling/Condensation Point: The lowest known value is 207.05°C (404.7°F) (Diethylenetriamine).

Melting/Freezing Point: May start to solidify at 12°C (53.6°F) based on data for: Triethylenetetramine.

Section 9. Physical and Chemical Properties (Continue /...)

Critical Temperature:	The lowest known value is 459.9°C (859.8°F) (Triethylenetetramine).
Specific Gravity:	2.0 – 2.2 g/cm ³
Vapour Pressure:	The highest known value is 0.03 kPa (0.2 mmHg) (at 20°C) (Diethylenetriamine).
Vapour Density:	The highest known value is 5.04 (Air = 1) (Triethylenetetramine).
Volatility:	Not available
Odour Threshold:	Not available
Evaporation Rate:	0.005 (Diethylenetriamine) compared to Butyl acetate.
VOC:	Not available
Viscosity:	Paste
LogK_{ow}:	The product is partly soluble in water and octanol.
Ionicity (in Water):	Not available
Dispersion Properties:	Is not dispersed in cold water, hot water.
Solubility:	Partly soluble in cold water, hot water, methanol, diethyl ether, n-octanol.
Physical Chemical Comments:	No additional remark.

Section 10. Stability and Reactivity

Stability and Reactivity:	The product is stable
Conditions of Instability:	None identified.
Incompatibility with Various Substances:	Reactive with acids. Slightly reactive to reactive with OXIDIZING AGENTS.
Hazardous Decomposition Products:	These products are carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂ ...)
Hazardous Polymerization:	Will not occur.

Section 11. Toxicological Information

Potential Acute Health Effects

Inhalation:	Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath.
Ingestion:	Ingestion may cause gastrointestinal irritation and diarrhea.
Skin contact:	Irritating to skin. May cause sensitisation by skin contact.
Eye contact:	Irritating to eyes.

Acute toxicity

<u>Ingredient Name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
Diethylenetriamine	LD50	1080 mg/kg	Oral	Rat
	LD50	1090 mg/kg	Dermal	Rabbit
Triethylenetetramine	LD50	2500 mg/kg	Oral	Rat
	LD50	5500 mg/kg	Oral	Rabbit
	LD50	1600 mg/kg	Oral	Mouse
	LD50	805 mg/kg	Dermal	Rabbit
Calcium Carbonate	No data available			
Magnesium Silicate	No data available			

Potential Chronic Health Effects

<u>Ingredient Name</u>	<u>Carcinogenic Effects</u>	<u>Mutagenic Effects</u>	<u>Developmental toxicity</u>	<u>Impairs fertility</u>
Triethylenetetramine	No data	Some evidence	No data	n/a

Over-exposure signs/symptoms

Target Organs:	Contains material, which causes damage to the following organs: kidneys, lungs, liver, gastrointestinal tract, upper respiratory tract, skin, eye, lens or cornea.
Other adverse effects:	None identified.

Section 12. Ecological Information

Ecotoxicity Data

Ingredient Name	Species	Period	Result
Triethylenetetramine	No data available		
BOD and COD:	Not available.		
Biodegradable/OECD:	Not available.		
Mobility:	Not available.		
Products of Degradation:	These products are carbon oxides (CO, CO ₂) and water, nitrogen oxides (NO, NO ₂ ...).		
Toxicity of the Products of Biodegradation:	The products of degradation are less toxic than the product itself.		
Special Remarks on the Products of Biodegradation:	Not available		

Section 13. Disposal Considerations

Waste Disposal:	Incinerate in a licensed high temperature hazardous waste incinerator. Dispose of according to all federal, state and local applicable regulations.
Waste Stream:	Not applicable.
Waste Classification:	Not applicable.
European Waste Catalogue (EWC):	Not applicable.
Consult your local or regional authorities.	

Section 14. Transport Information

Regulatory Information	UN number	Proper shipping name	Class	Packing Group	Label	Additional information
ADR/RID/SABS 0228 Class	Not regulated					
IMDG Class	Not regulated					
IATA-DGR Class	Not regulated					

Section 15. Regulatory Information

EU / SABS 0265 Classification

Hazard symbol(s):



Risk phrases:	Irritant R36/38- Irritating to eyes and skin. R43- May cause sensitisation by skin contact.
Safety phrases:	S24- Avoid contact with skin. S37- Wear suitable gloves. S46- If swallowed, seek medical advice immediately and show this container or label.
Contains:	Triethylenetetramine 203-950-6
Product Use:	Classification and labelling have been performed according to EU directives 67/548/EEC, 1999/45/EC including amended and the intended use. - Industrial applications.

Section 16. Other information

Full text of R phrases referred to in Section 2 and 3:

R21- Harmful in contact with skin.
R21/22- harmful in contact with skin and if swallowed.
R36- Irritating to eyes
R36/37/38- Irritating to eyes, respiratory system and skin.
R36/38 Irritating to eyes and skin.
R43- May cause sensitisation by skin contact.
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications referred to in Sections 2 and 3:

Date of print: Xi- Irritant 15.04.2013
Date of Issue: 15.04.2013
Date of Previous Issue: Previous Validation 24.04.2006
Version: 3

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