



SAFETY DATA SHEET BRONZE PUTTY HARDENER

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

PRODUCT NAME	BRONZE PUTTY HARDENER
APPLICATION	Hardener
SUPPLIER	ITW DEVCON BAY 150 SHANNON INDUSTRIAL ESTATE SHANNON CO CLARE IRELAND T: +353 (0)61471299 F: 353(0)61471285
EMERGENCY TELEPHONE	+44 (0)208 762 8322

2 HAZARDS IDENTIFICATION

Harmful in contact with skin. Causes burns. May cause sensitisation by skin contact. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

CLASSIFICATION Xn;R21. C;R34. R43. R52/53.

HUMAN HEALTH

Corrosive. Prolonged contact causes serious eye and tissue damage.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
2-PIPERAZIN-1-YLETHYLAMINE	205-411-0	140-31-8	1-10%	C;R34 Xn;R21/22 R43 R52/53
NONYL PHENOL	246-672-0	25154-52-3	1-5%	Xn;R22. C;R34. N;R50/53.
TITANIUM DIOXIDE	236-675-5	13463-67-7	1-5%	-
TRIETHYLENETETRAMINE	203-950-6	112-24-3	30-60%	C;R34 Xn;R21 R43 R52/53

The Full Text for all R-Phrases are Displayed in Section 16

4 FIRST-AID MEASURES

GENERAL INFORMATION

In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). Do not breathe vapour/spray. Avoid contact with eyes.

INHALATION

Move the exposed person to fresh air at once. Contact physician if discomfort continues.

INGESTION

Do not induce vomiting. Drink plenty of water. Get medical attention.

SKIN CONTACT

Remove affected person from source of contamination. Wash skin thoroughly with soap and water for several minutes. Contact physician if irritation persists.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention. Contact physician if irritation persists.

BRONZE PUTTY HARDENER

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Fire can be extinguished using: Water. Foam. Dry chemicals. Carbon dioxide (CO2).

SPECIAL FIRE FIGHTING PROCEDURES

Keep up-wind to avoid fumes. Avoid water in straight hose stream; will scatter and spread fire. Keep run-off water out of sewers and water sources. Dike for water control.

SPECIFIC HAZARDS

Avoid breathing fire vapours.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Avoid contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

SPILL CLEAN UP METHODS

Absorb spillage with non-combustible, absorbent material. Transfer to a container for disposal. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS

Use only in well-ventilated areas. Provide good ventilation. Avoid inhalation of vapours. Avoid contact with skin and eyes. Do not eat, drink or smoke when using the product. Do not use in confined spaces without adequate ventilation and/or respirator. Observe good industrial hygiene practices.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry and cool place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	TWA - 8 hrs		STEL - 15 min		Notes
TITANIUM DIOXIDE			10 mg/m3 total dust			

PROTECTIVE EQUIPMENT



PROCESS CONDITIONS

Provide eyewash, quick drench.

ENGINEERING MEASURES

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

If ventilation is insufficient, suitable respiratory protection must be provided.

HAND PROTECTION

Use protective gloves made of: Rubber or plastic.

BRONZE PUTTY HARDENER**EYE PROTECTION**

Wear approved chemical safety goggles where eye exposure is reasonably probable.

HYGIENE MEASURES

Keep away from food, drink and animal feeding stuffs. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site. Do not eat, drink or smoke when using the product. Change work clothing daily before leaving work place.

SKIN PROTECTION

Avoid contact with skin. Wear apron or protective clothing in case of contact.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Paste		
COLOUR	Cream		
ODOUR	Amine.		
SOLUBILITY	Soluble in water		
BOILING POINT (°C)	>232	RELATIVE DENSITY	0.98 20 °C
VAPOUR PRESSURE	<0.01 mmHg	pH-VALUE, CONC. SOLUTION	10.5 @ 20 °C
FLASH POINT (°C)	>93		

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions and recommended use.

CONDITIONS TO AVOID

Avoid heat, flames and other sources of ignition. Avoid excessive heat for prolonged periods of time. Avoid exposure to high temperatures or direct sunlight.

MATERIALS TO AVOID

Avoid contact with acids and oxidising substances.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire or high temperatures create: Nitrous gases (NO_x). Oxides of: Carbon monoxide (CO). Carbon dioxide (CO₂). Vapours/gases/fumes of: Ammonia or amines.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 2000 mg/kg (oral rat)

INHALATION

Vapour from this chemical can be hazardous when inhaled.

INGESTION

Harmful if swallowed.

SKIN CONTACT

May be absorbed through the skin. Prolonged or repeated exposure may cause severe irritation. May cause sensitisation by skin contact. Risk of sensitisation or allergic reactions among sensitive individuals.

EYE CONTACT

Risk of serious damage to eyes.

HEALTH WARNINGS

Causes burns.

ROUTE OF ENTRY

Inhalation. Skin absorption. Ingestion. Skin and/or eye contact.

TARGET ORGANS

Prolonged or repeated exposure may cause: Risk of serious damage to eyes. May cause damage to the liver. May cause damage to the kidneys. Central and/or peripheral nervous system damage.

12 ECOLOGICAL INFORMATION

BRONZE PUTTY HARDENER

ECOTOXICITY

Avoid release to the environment. The product contains substances which are toxic to aquatic organisms and which may cause long term adverse effects in the aquatic environment.

MOBILITY

The product is soluble in water. Do not discharge into drains, water courses or onto the ground.

WATER HAZARD CLASSIFICATION

WGK 2

13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Dispose of waste and residues in accordance with local authority requirements.

WASTE CLASS

08 04 99

14 TRANSPORT INFORMATION

GENERAL

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

No transport warning sign required.

15 REGULATORY INFORMATION

LABELLING



Corrosive



Harmful

CONTAINS

2-PIPERAZIN-1-YLETHYLAMINE
 TRIETHYLENETETRAMINE

RISK PHRASES

- R21 Harmful in contact with skin.
- R34 Causes burns.
- R43 May cause sensitisation by skin contact.
- R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SAFETY PHRASES

- S25 Avoid contact with eyes.
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).
- S60 This material and its container must be disposed of as hazardous waste.

16 OTHER INFORMATION

REVISION DATE 02/10/2008

REV. NO./REPL. SDS GENERATED 3

DATE 06.01.05

BRONZE PUTTY HARDENER

RISK PHRASES IN FULL

NC	Not classified.
R21	Harmful in contact with skin.
R21/22	Harmful in contact with skin and if swallowed.
R22	Harmful if swallowed.
R34	Causes burns.
R43	May cause sensitisation by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

DISCLAIMER

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



SAFETY DATA SHEET BRONZE PUTTY RESIN

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

PRODUCT NAME	BRONZE PUTTY RESIN
PRODUCT NO.	X0003
SUPPLIER	ITW DEVCON BAY 150 SHANNON INDUSTRIAL ESTATE SHANNON CO CLARE IRELAND T: +353 (0)61471299 F: 353(0)61471285
EMERGENCY TELEPHONE	+44 (0)208 762 8322

2 HAZARDS IDENTIFICATION

May cause sensitisation by skin contact. Irritating to eyes and skin. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

CLASSIFICATION Xi;R36/38. R43. N;R51/53.

HUMAN HEALTH

Preparation contains an epoxy resin, which may cause sensitisation and development of allergy.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
EPOXY RESIN (Number average MW <= 700)	500-033-5	25068-38-6	10-30%	R43 Xi;R36/38 N;R51/53

The Full Text for all R-Phrases are Displayed in Section 16

4 FIRST-AID MEASURES

GENERAL INFORMATION

Avoid contact with skin and eyes. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).

INHALATION

Move the exposed person to fresh air at once. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Contact physician if discomfort continues.

INGESTION

Rinse mouth thoroughly. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Get medical attention.

SKIN CONTACT

Remove affected person from source of contamination. Wash skin thoroughly with soap and water for several minutes. Contact physician if irritation persists.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention. Contact physician if irritation persists.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Extinguish with foam, carbon dioxide or dry powder.

BRONZE PUTTY RESIN

SPECIAL FIRE FIGHTING PROCEDURES

Avoid breathing fire vapours. Keep up-wind to avoid fumes. Keep run-off water out of sewers and water sources. Dike for water control.

SPECIFIC HAZARDS

By heating and fire, irritating vapours/gases may be formed.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Provide adequate ventilation. Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

SPILL CLEAN UP METHODS

Absorb with sand or other inert absorbent. Transfer to a container for disposal. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS

Provide good ventilation. Use only in well-ventilated areas. Handle and open container with care. Keep away from heat, sparks and open flame. Do not use in confined spaces without adequate ventilation and/or respirator. Do not eat, drink or smoke when using the product. Observe good industrial hygiene practices.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry, cool and well-ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

PROTECTIVE EQUIPMENT



PROCESS CONDITIONS

Provide eyewash, quick drench.

ENGINEERING MEASURES

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

If ventilation is insufficient, suitable respiratory protection must be provided.

HAND PROTECTION

Use protective gloves made of: Rubber or plastic. Butyl rubber gloves are recommended.

EYE PROTECTION

Wear approved chemical safety goggles where eye exposure is reasonably probable.

HYGIENE MEASURES

Keep away from food, drink and animal feeding stuffs. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site. Do not eat, drink or smoke when using the product. Change work clothing daily before leaving work place.

SKIN PROTECTION

Avoid contact with skin. Protection suit must be worn.

9 PHYSICAL AND CHEMICAL PROPERTIES

BRONZE PUTTY RESIN

APPEARANCE	Paste		
COLOUR	Brown		
ODOUR	Slight odour		
SOLUBILITY	Slightly soluble in water.		
BOILING POINT (°C)	>260	MELTING POINT (°C)	n/d
RELATIVE DENSITY	2.80 20 °C	VAPOUR DENSITY (air=1)	>1
VAPOUR PRESSURE	0.03mmHg	EVAPORATION RATE	<<1 (butyl acetate=1)
pH-VALUE, CONC. SOLUTION	7.0 @ 20 °C	FLASH POINT (°C)	> 204
AUTO IGNITION TEMPERATURE (°C)	>300		

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions and recommended use.

CONDITIONS TO AVOID

Avoid heat, flames and other sources of ignition. Avoid excessive heat for prolonged periods of time. Avoid exposure to high temperatures or direct sunlight.

MATERIALS TO AVOID

Avoid contact with: Strong oxidising agents. Strong acids. Amines.

HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Vapours/gases/fumes of: Acids - organic. Aldehydes.

11 TOXICOLOGICAL INFORMATION**SKIN CONTACT**

Irritating to skin. May cause sensitisation by skin contact. The product contains a small amount of sensitising substance which may provoke an allergic reaction among sensitive individuals after repeated contact.

EYE CONTACT

Irritating to eyes.

HEALTH WARNINGS

Preparation contains an epoxy resin, which may cause sensitisation and development of allergy.

ROUTE OF ENTRY

Inhalation. Ingestion. Skin and/or eye contact.

Name	EPOXY RESIN (Number average MW <= 700)
Toxic Dose 1 - LD 50	>2000 mg/kg (oral rat)
Toxic Dose 2 - LD 50	>2000 mg/kg (oral rat)

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Avoid releasing to the environment. Dangerous for the environment: May cause long-term adverse effects in the aquatic environment.

MOBILITY

Do not allow ANY environmental contamination. Do not discharge into drains, water courses or onto the ground.

WATER HAZARD CLASSIFICATION

WGK 2

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Dispose of waste and residues in accordance with local authority requirements.

WASTE CLASS

08 04 99

BRONZE PUTTY RESIN

14 TRANSPORT INFORMATION



UK ROAD CLASS	9	UK ROAD PACK GR.	III
PROPER SHIPPING NAME	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXY RESIN (Number average MW <= 700))		
UN NO. ROAD	3082	ADR CLASS	Class 9: Miscellaneous dangerous substances and articles.
ADR CLASS NO.	9	HAZARD No. (ADR)	90
ADR PACK GROUP	III	HAZCHEM CODE	2X
ADR LABEL NO.	9	RID CLASS NO.	9
CEFIC TEC(R) NO.	90GM6-III	UN NO. SEA	3082
RID PACK GROUP	III	IMDG PAGE NO.	9
IMDG CLASS	9	EMS	F-A, S-F
IMDG PACK GR.	III	MARINE POLLUTANT	No.
MFAG	See Guide	AIR CLASS	9
UN NO. AIR	3082		
AIR PACK GR.	III		

15 REGULATORY INFORMATION

LABELLING



Irritant



Dangerous for the environment

CONTAINS EPOXY RESIN (Number average MW <= 700)

RISK PHRASES

R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R43	May cause sensitisation by skin contact.
R36/38	Irritating to eyes and skin.

SAFETY PHRASES

S24/25	Avoid contact with skin and eyes.
S37/39	Wear suitable gloves and eye/face protection.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28	After contact with skin, wash immediately with plenty of water.
S61	Avoid release to the environment. Refer to special instructions/safety data sheets.
P5	Contains epoxy constituents. See information supplied by the manufacturer.

16 OTHER INFORMATION

REVISION DATE 02/10/2008

REVISION DATE: 02/10/2008

BRONZE PUTTY RESIN

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DATE 05.01.05

RISK PHRASES IN FULL

R36/38	Irritating to eyes and skin.
R43	May cause sensitisation by skin contact.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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