

SAFETY DATA SHEET

TITANIUM PUTTY (Ti) HARDENER.

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

PRODUCT NAME TITANIUM PUTTY (Ti) HARDENER.
 PRODUCT NO. X0018
 SUPPLIER ITW Devcon
 Shannon Industrial Estate
 Co. Clare
 Ireland
 353(61)471299
 353(61)471285
 EMERGENCY TELEPHONE +44 (0)208 762 8322

2 HAZARDS IDENTIFICATION

Causes burns. May cause sensitisation by skin contact. Harmful in contact with skin and if swallowed.

CLASSIFICATION Xn;R21/22. C;R34. R43.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
2-ETHYL-4-METHYLIMIDAZOLE		931-36-2	1-5%	Xn;R22. Xi;R41.
PHENOL	203-632-7	108-95-2	1-5%	Muta. Cat. 3;R68 T;R23/24/25 C;R34 Xn;R48/20/21/22
TRIETHYLENETETRAMINE	203-950-6	112-24-3	1-10%	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

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.

SPECIAL FIRE FIGHTING PROCEDURES

Avoid breathing fire vapours. 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

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

TITANIUM PUTTY (Ti) HARDENER.

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

Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation. In case of inadequate ventilation, use respiratory protection. Do not smoke, use naked flames or other sources of ignition. Avoid contact with skin and eyes.

ENVIRONMENTAL PRECAUTIONS

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

Use only in well-ventilated areas. Handle and open container with care. Keep away from heat, sparks and open flame. 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, cool and well-ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	TWA - 8 hrs	STEL - 15 min	Notes
PHENOL	WEL	2 ppm(Sk)		

WEL = Workplace Exposure Limit.

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. Wear approved, tight fitting safety glasses where splashing is 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.

SKIN PROTECTION

Wear apron or protective clothing in case of contact.

9 PHYSICAL AND CHEMICAL PROPERTIES

TITANIUM PUTTY (Ti) HARDENER.

APPEARANCE	Paste		
COLOUR	White / off-white		
ODOUR	Amine.		
SOLUBILITY	Slightly soluble in water.		
BOILING POINT (°C)	>177	MELTING POINT (°C)	n/d
RELATIVE DENSITY	1.78 @ 20 °C	VAPOUR PRESSURE	<0.01 mmHg
pH-VALUE, CONC. SOLUTION	9.75 @ 20 °C	VISCOSITY	640-1600 Pas @ 25
FLASH POINT (°C)	136		

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. Chlorinated hydrocarbons.

HAZARDOUS DECOMPOSITION PRODUCTS

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

11 TOXICOLOGICAL INFORMATION**INHALATION**

Irritating to respiratory system. May cause sensitisation by inhalation.

INGESTION

Harmful if swallowed.

SKIN CONTACT

Irritating to skin. Harmful in contact with skin. May cause sensitisation by skin contact.

EYE CONTACT

Irritating to eyes.

HEALTH WARNINGS

Causes burns.

ROUTE OF ENTRY

Inhalation. Skin absorption. Ingestion.

TARGET ORGANS

Prolonged or repeated exposure may cause: May cause damage to the liver and kidneys. Respiratory system, lungs. Central nervous system.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Avoid release to the environment.

MOBILITY

Do not discharge into drains, water courses or onto the ground.

DEGRADABILITY

Phenol: Biological degradability % : 99.5 % .

WATER HAZARD CLASSIFICATION

WGK 2

13 DISPOSAL CONSIDERATIONS

TITANIUM PUTTY (Ti) HARDENER.

DISPOSAL METHODS

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

WASTE CLASS

08 04 99

14 TRANSPORT INFORMATION



UK ROAD CLASS	8		
PROPER SHIPPING NAME	CORROSIVE LIQUID, N.O.S. (TRIETHYLENETETRAMINE, 1-METHYLIMIDAZOLE)		
UN NO. ROAD	1760	UK ROAD PACK GR.	III
ADR CLASS NO.	8	ADR CLASS	Class 8: Corrosive substances.
ADR PACK GROUP	III	HAZARD No. (ADR)	80
ADR LABEL NO.	8	HAZCHEM CODE	2X
CEFIC TEC(R) NO.	80GC9-II+III	RID CLASS NO.	8
RID PACK GROUP	III	UN NO. SEA	1760
IMDG CLASS	8	IMDG PACK GR.	III
EMS	F-A, S-B	MFAG	See Guide
MARINE POLLUTANT	No.	UN NO. AIR	1760
AIR CLASS	8	AIR PACK GR.	III

15 REGULATORY INFORMATION

LABELLING



Corrosive



Harmful

CONTAINS

PHENOL
TRIETHYLENETETRAMINE

RISK PHRASES

R34	Causes burns.
R43	May cause sensitisation by skin contact.
R21/22	Harmful in contact with skin and if swallowed.

SAFETY PHRASES

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.
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).

16 OTHER INFORMATION

REVISION DATE 09/10/2008

REV. NO./REPL. SDS GENERATED 10

TITANIUM PUTTY (Ti) HARDENER.

DATE 06.01.05

RISK PHRASES IN FULL

R21	Harmful in contact with skin.
R22	Harmful if swallowed.
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R34	Causes burns.
R41	Risk of serious damage to eyes.
R43	May cause sensitisation by skin contact.
R48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R68	Possible risk of irreversible effects.

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

TITANIUM PUTTY (Ti) RESIN.

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

PRODUCT NAME TITANIUM PUTTY (Ti) RESIN.
 PRODUCT NO. X0007
 SUPPLIER ITW DEVCON
 BAY 150
 SHANNON INDUSTRIAL ESTATE
 SHANNON
 CO CLARE
 IRELAND
 T: 353(61)471299
 F: 353(61)471285
 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. 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.

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.

TITANIUM PUTTY (Ti) RESIN.

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 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

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

In case of inadequate ventilation use suitable respirator.

HAND PROTECTION

Use protective gloves made of: Rubber or plastic.

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

APPEARANCE

Paste

COLOUR

Dark Grey

ODOUR

Slight odour

SOLUBILITY

Slightly soluble in water.

BOILING POINT (°C)

>260

MELTING POINT (°C)

N/D

TITANIUM PUTTY (Ti) RESIN.

RELATIVE DENSITY	2.5 @ 20 °C	VAPOUR DENSITY (air=1)	>1
VAPOUR PRESSURE	0.03mmHg 20	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**INHALATION**

Not relevant at normal room temperatures. When heated, irritating vapours may be formed.

INGESTION

Irritating. May cause nausea, stomach pain and vomiting.

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.

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 release 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

14 TRANSPORT INFORMATION

TITANIUM PUTTY (Ti) RESIN.

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

S28	After contact with skin, wash immediately with plenty of water.
S37/39	Wear suitable gloves and eye/face protection.
P5	Contains epoxy constituents. See information supplied by the manufacturer.

16 OTHER INFORMATION

REVISION DATE 09/10/2008

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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.

TITANIUM PUTTY (Ti) RESIN.

DISCLAIMER

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