

Safety Information Sheet

in accordance with Directive 91/155/EEC

1. Product and company identification

Trade name: **TX Component B**

Address/Telephone no. **SICOMIN Composites**
RN 568 Quartier la Moutte BP 23
13 161 Châteauneuf-les-Martigues Cédex-France
Tel: 33.04.42.81.51 Fax: 33.04.42.81.29.29

2. Composition/Information on components

Dangerous components	CAS number	%	Symbol	Risk Classification
Diphenylmethane diisocyanate(MDI)	026447-40-5	Below 1	Xn	20 36/37/38 42

Chemical characterisation: Polyurethane pre-polymer base.

3. Identification of dangers

Xn: Harmful

R 36/37/38	Irritant for eyes, respiratory tracts and skin
R 20	Harmful if inhaled or if in contact with skin
R 42/43	May cause sensitisation through inhalation or skin contact

4. First aid

Inhalation:	Harmful.	May cause sensitisation
Skin contact:	Irritant.	Wipe with absorbent paper then wash with soap and water. Do not use thinners or solvents. Remove contaminated clothing. Seek medical advice if the irritation persists.
Eye contact:		Rinse open eye immediately under running water for a minimum of 15 minutes. Seek immediate medical advice.
Swallowing:		The decision over whether or not to induce vomiting must be taken by a doctor. Go to a hospital emergency department.

5. Fire-fighting procedures

Combustion products:	Carbon monoxides, nitrogen oxides, isocyanate fumes and traces of hydrogen cyanide. Thermal decomposition products must therefore be treated as potentially dangerous and appropriate precautions must be taken.
Suitable extinguishing agents:	Alcohol resistant foam, carbon dioxide (CO ₂) or dry powder. Water fog is also useful for cooling casks exposed to fire and dispersing fumes.
Extinguishing agents to avoid:	High pressure water jet
Protective equipment for fire-fighting:	The wearing of self-contained breathing apparatus is compulsory for fire-fighters. PVC boots, gloves and protective clothing must also be worn.
Other points to note:	Contamination of the product by water causes a dangerous increase in pressure in closed containers through the generation of carbon dioxide. The liquid spilt during fire-fighting should be kept for subsequent draining.

6. Measures to be taken in case of accidental release

Immediate vicinity

- Evacuate non-essential personnel.
- Ventilate the area.

- Do not breathe in fumes.
- Cleaning-up must only be done by trained personnel.
- Personnel dealing with large-scale spillages must wear full protective clothing.

Measures for environmental protection:

- Avoid a new leak or spillage; contain large-scale spillages.
- Do not allow the product to enter the ground, the water-courses or the underground water system. Waste must be collected up and not discarded. It will be treated by a specialised waste plant or by incineration.

Cleaning procedures:

- Contain and soak up large spillages using a pad which is moist, absorbent, inert and non-inflammable.
- Shovel into completely open casks or into plastic bags for subsequent decontamination, if necessary.
- The barrels of waste should not be closed because of the danger of emissions of CO₂.
- Clean the area where spillage has occurred with a decontaminating solution of water, ammonia and liquid detergent (90/8/2).
- The use of solvents is not recommended for cleaning, unless the guidelines for exposure and the safety advice for handling that particular solvent are strictly adhered to.

7. Handling and storing

Handling

- Fumes are heavier than air. Ensure that there is adequate ventilation or an extractor at the work place.
- Avoid any heating to more than 40°C.
- Take the necessary precautions for avoiding contact with skin and eyes.
- Avoid breathing fumes from the product.
- Close the packaging again immediately after measuring.

Storing

- Store indoors in tightly sealed containers in a well ventilated area.
- Store in a dry place which is free from damp.
- Keep away from alkaline products, alcohol and organic acids, heat or flames.
- Keep away from foodstuffs.
- Storage temperature: 15 to 30°C
- Time limit for storage: 12 months in the original casks

8. Personal protection/exposure controls

Technical measures:	Excellent ventilation or a general extraction system is required
Breathing equipment:	Necessary as soon as the VAT threshold is reached, compulsory in a confined space
Short-term exposure:	mask with A2-P2 filter
Intense exposure or spraying:	self-contained breathing apparatus
Skin protection:	Use waterproof gloves made of polyvinyl or neoprene rubber
Eye protection:	Hermetically sealed safety goggles and, in addition, a mask covering the entire face if there is any possibility of splashing.
Other:	In cases of hypersensitivity of the respiratory tracts and of the skin (asthma, chronic bronchitis, chronic skin ailments), handling of the product is not advised. Do not drink, smoke or eat in areas where the product is being applied. Keep away from foodstuffs, drinks and animal foods.

Limits of exposure in the workplace	VLE		VME	
	ppm	mg/m ³	ppm	mg/m ³
Diphenylmethane diisocyanate (MDI)	/	/	0.01	/

Data Source: INRS/France /: no data

9. Chemical and physical properties

Appearance	Viscous liquid
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Colour	Dark brown
Odour	Earthy, musty
Ph	N/A
Boiling point/range	
Freezing point/range	< to 0° C
Flash point (°C)	> 200° C in closed cupel
Danger of explosion	The product is not explosive
Lower limit of explosion	
Lower limit of explosion	
Temperature for self-ignition	421° C
Density at 20° C	1.22 g/cm ³
Viscosity (mPa.s at 25° C)	
Vapour pressure at 50° C	Below 1.1 bar
Solubility (water)	Reacts with water and releases CO ₂ and polyureas
Solubility (other)	Ketones, aromatics, acetates

10. Stability and reactivity data

Chemical stability:	Stable under normal storage conditions. Decomposition from 260° C
Conditions to avoid:	Prolonged heat above 40° C
Avoid contact with:	Acids, alcohol, amines, bases, water, galvanised metals, copper and its alloys, strong oxidising agents (chromic acid type)
Dangerous polymerisation:	A dangerous polymerisation will not take place spontaneously on contact with water, progressive release of CO ₂ , increase of pressure in the closed barrels, with resultant risk of bursting. The product of this reaction is of the polyurea type (insoluble in water and with a high fusion point).

11. Toxicological information

Acute toxicity of the free monomer:

Product	MDI
Cas number	026447-40-5
LD 50 oral / rat in mg/kg	> 2000
LD 50 skin / rabbit in mg/kg	> 2000
LD 50 inhalation / rat in mg/m ³ /4h	490
SSMA mutagenic test	No*

[* Rats were exposed over a two-year period to MDI in aerosols, which, in high concentrations, produced chronic pulmonary irritation. The prolonged irritation led to the formation of tumours in the lungs for a small proportion of the rats exposed to 6 mg/m³. No tumour was detected at 1 mg/m³ and no effects were observed at 0.2 mg/m³. In the absence of substantial and prolonged exposure leading to chronic irritation and pulmonary lesions, it is highly improbable that tumours will appear. The industrial experiment has not shown evidence of any link between exposure to MDI-based products and the development of cancer in humans.]

Swallowing:	Toxicity probably low in the case of a single administration by mouth. Polymerisation upon contact with saliva.
Contact with skin:	A single exposure should not result in harmful quantities of the product being absorbed through the skin. Repeated exposure may cause skin irritation which could go as far as to trigger allergic skin reactions or dermatitis in humans. May cause sensitisation: rashes, swellings or inflammation. The product hardens on the skin: tanning effect.
Inhalation:	The product is an irritant to the respiratory tracts. In persons who are hypersensitive, very low concentrations may produce constriction of the bronchial tubes (asthma symptoms).
Eye contact:	May cause irritation and a reversible lesion of the cornea.

12. Ecological information

General	The product reacts with water at the interface resulting in the release of carbon dioxide and gives a product with an insoluble reaction: polyurea with a high fusion point. This reaction is highly favoured by the presence of surfactants or soluble solvents in the water.
Degradability:	The biodegradation of the polyurea in static laboratory conditions is low.
Aquatic toxicity:	The polyurea are practically non-toxic for fish, bacteria and daphnia, in acute static conditions.

13. Disposal considerations

Disposal:	Dispose of in accordance with local, regional or national regulations. It is not permissible to dispose of untreated products. Waste, even in small quantities, must never be discharged into drains, sewers or water-courses.
Large quantities:	Destruction by controlled pyrolysis with washing and neutralisation of fumes, using incinerators specially designed for the destruction of dangerous chemical waste. If disposal is carried out by a specialised firm, check that they are in possession of adequate information and that the residue containers are correctly labelled.
Soiled packaging:	The empty containers must be decontaminated (see section 6) and, after being pierced and crushed, they must be taken to an authorised recycling plant.

14. Transport information

National regulations:	Not dangerous for transport. Keep away from foodstuffs, acids and bases.
Content:	Diphenylmethane diisocyanate and isomers

15. Regulatory information

EEC Classification:	in accordance with Annex 1 of Directive 67/548/EEC	
Danger symbol:	Xn: Harmful	
Risk classification:	R 36/37/38:	Irritant for eyes, respiratory tracts and skin
	R 20:	Harmful if inhaled or if in contact with skin
	R 42/43:	May cause sensitisation if inhaled or in contact with skin

Advice on safety/precautions:

S 28:	Wash immediately with soap and water following skin contact
S 23:	Do not breathe in fumes and aerosols
S 38:	In case of inadequate ventilation, wear appropriate breathing apparatus
S 37/39:	Wear suitable gloves and protective apparatus for eyes and face

16. Other information

This safety information sheet has been produced in accordance with directive 91/155/EEC (Technical Directives on safety) and 88/379/EEC (Directives on general preparations)

Date on which drawn up: March 1995
 Date of revision: July 96
 Origin: R & D - CLM / JPG laboratory
 File: PM4 /SECTXB

This sheet completes the technical instructions for use but does not replace them. The information contained herein is based on our knowledge of the product concerned, at the time indicated. It is given in good faith. The user's attention is also drawn to the possible risks involved if a product is used for purposes other than those for which it was designed. In no case is the user exempted from knowing and applying, in its entirety, the set of directions governing the activity. He will take sole responsibility for ensuring that the precautionary measures for use of the product are carried out.

Safety Information Sheet

in accordance with directive 91 / 155 / EEC

1. Product and company identification

Trade name: **TX component A**

Address/Telephone: **SICOMIN Composites**
RN 568 Quartier la Moutte BP 23
13 161 Châteauneuf-les-Martigues Cedex-France
Tel: 33.(0)442.81.51.51 Fax: 33.(0)4.42.81.29.29

2. Composition/Information on components

Compound based on polyether polyols and inert fillers

3. Identification of dangers

Effects on health:	No indication of danger
Eyes:	RAS
Skin:	RAS
Ingestion:	RAS
Environmental effects:	RAS
Description of danger:	RAS

4. First aid

Inhalation:	Not applicable
Skin contact:	Remove by mechanical means. Wash with soap and water.
Eye contact:	Rinse open eye immediately under running water for a minimum of 15 minutes. Seek immediate medical advice.
Swallowing:	The decision over whether or not to induce vomiting must be taken by a doctor. Never give anything through the mouth to an unconscious person. Seek medical advice.
Note for doctor:	No specific antidote. Treatment to be chosen by the doctor in accordance with the patient's reactions.

5. Fire-fighting procedures

Classification:	Non-inflammable product
Combustion products:	In conditions of incomplete combustion or pyrolysis: carbon monoxide.
Suitable extinguishing agents:	Alcohol resistant foam, carbon dioxide (CO ₂), water fog or dry powder.
Protective equipment	The liquid spilt during fire-fighting should be kept for subsequent draining. Water fog is also useful for cooling barrels exposed to fire and dispersing fumes.

6. Measures to be taken in case of accidental release

Personnel dealing with large-scale spillages must wear full protective clothing.

Measures for environmental protection:	Avoid a new leak or spillage. Contain large-scale spillages. Do not allow the product to enter the ground, water-courses or underground water system. Water used for washing and rinsing must be collected and not discharged.
Cleaning procedures:	Contain and soak up large spillages using a pad which is absorbent, inert and non-inflammable. Shovel into completely open barrels or into plastic bags for subsequent decontamination, if necessary. Clean the area where spillage has occurred with hot water and a detergent. The use of solvents is not recommended for cleaning, unless the guidelines for exposure and the safety advice for handling that particular solvent are strictly adhered to. Remove and dispose of the residues.

7. Handling and storing

Handling	Take the necessary precautions to avoid contact with skin, eyes or clothes.
Storing	Keep containers tightly closed and store indoors in a well ventilated area. Keep in a dry place free from damp.
Storage temperature:	0°C to 50°C
Time limit for storing:	1 year in the original barrels

8. Personal protection/Exposure controls

Technical measures:	Good general ventilation should be sufficient for most conditions.
Breathing equipment:	No breathing equipment should be necessary.
Skin protection:	For a brief period of contact, clean clothing covering the body should be adequate; for more prolonged or frequently repeated contact, use waterproof gloves.
Eye protection:	Protective goggles.
Other:	thick cotton boiler suit

Limits of exposure in the workplace: not established

9. Chemical and physical properties

Appearance	Viscous liquid
Colour	Range of colour
Odour	Castor oil
Ph	N/A
Boiling point/range (°C)	N/A
Freezing point/range	< at 0°C
Flash point (°C)	> 150 °C ASTM D 1310
Inflammability limit	not determined
Spontaneous combustion point (°C)	> 300°C
Density at 20°C (water = 1)	1.4
Viscosity (mPa.s at 25°C)	
Vapour pressure at 20°C	
Solubility (water)	Insoluble
Solubility (other)	Ketones, alcohol, aromatics, chlorinated solvents

10. Stability and reactivity data

Chemical stability:	Stable under normal storage conditions
Dangerous polymerisation:	Dangerous polymerisation will not take place spontaneously. The product reacts with isocyanates and polymerises irreversibly. Follow the guidelines for implementation in order to avoid a reaction which is too exothermic.

11. Toxicological information

Irritation of the skin	no
Irritation of the mucous	no

12. Ecological information

Mobility and potential for bio-accumulation	no data
Degradability	no data
Aquatic toxicity	no data

13. Disposal considerations

Disposal	Dispose of in accordance with local, regional or national regulations. It is not permissible to dispose of untreated products. Waste, even in small quantities, must never be discharged into drains, sewers or water-courses.
Large quantities	Destruction by pyrolysis. If disposal is carried out by a specialised firm, check that they are in possession of adequate information and that the residue containers are correctly labelled.
Soiled packaging	Empty containers must be disposed of in the same way as dangerous waste, except in cases where traces of the product adhering to the sides have been completely removed. The danger labels may then be removed from the sides of the container, which may be recycled or disposed of in accordance with local regulations. The washing effluent must be disposed of safely and in accordance with local regulations. If the container is reconditioned, the company carrying out the reconditioning must be informed of the container's previous contents.

14. Transport information

Customs classification	Not dangerous for transport	Keep away from foodstuffs.
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15. Regulatory information

EEC Classification	In accordance with Annex 1 of Directive 67/548/EEC
Danger symbol	Not dangerous
Risk classification	Not applicable
Cautionary advice	Not applicable

Other information

This safety information has been produced in accordance with directive 91/155/EEC (Technical Directives on safety) and 88/379/EEC (Directives on general preparations)

Date on which drawn up:	June 95
Last revision:	July 96
Origin:	R & D - CLM / JPG laboratory
File:	PM4 / SECTX

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