

MATERIAL SAFETY DATA SHEET according to EC-direction 93/112/EC.

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Polyurethane Foam Part B

1. IDENTIFICATION OF THE SUBSTANCE

Products Name: TWO PART POLYURETHANE FOAM Part B
CELLANATE M

2. COMPOSITE/INFORMATION ON INGREDIENTS

Chemical Description: Diphenylmethaneisocyanate
Isomers & homologues Content 9016-87-9 Xn R20
Xi R36/37/38 R42/43

Hazardous Ingredients:

Diphenylmethane 4,4 disocyanate Cas No 101-68-8 Content 30-60 EC No 202-966-0 Xn R20
Xi R36/37/38 R42/43

Diphenylmethane 2,4 disocyanate Cas No 5873-54-1 Content 3-7 EC No 227-534-9 Xn R20
Xi R36/37/38 R42/43

3. HAZARDS IDENTIFICATION

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

CLASSIFICATION Xn R20 Xi R36/37 R42/43

EMERGENCY OVERVIEW Reacts slowly with water to produce carbon dioxide which may rupture closed containers, The reaction accelerates at higher temperatures.

APPEARANCE Liquid

COLOUR Brownish-red

POTENTIAL ACUTE HEALTH EFFECTS

Harmful by inhalation. This product is a respiratory irritant and potential respiratory sensitiser: repeated inhalation of vapour or aerosol at levels above the OEL could cause respiratory sensitisation. The onset of symptoms may be delayed for several hours after exposure. A hyper reactive response to even minimal concentrations of MIDI may develop in sensitised persons.

Repeated and/or prolonged contact may cause skin sensitisation.

Irritating to eyes and skin.

4. FIRST AID MEASURES

In case of accident or if you feel unwell, seek medical advice immediately (Show the label where possible).

- Inhalation:** Remove patient from exposure, keep warm and at rest, obtain medical attention. Treatment is symptomatic for primary irritation or bronchospasm. If breathing is laboured, oxygen should be applied by qualified personnel. Any artificial respiration if breathing has ceased or shows signs of failing
- Skin Contact:** Remove any contaminated clothing and thoroughly launder before re-use. Immediately wash affected area with soap and plenty of warm water. An MDI study has demonstrated that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water
- Eye Contact:** Immediately wash eyes with copious quantities of eyewash solution or water, holding the eyelids apart for at least 10 minutes. Obtain immediate medical treatment.
- Ingestion:** Do not induce vomiting. Do not swallow. Provided the patient is conscious, wash out mouth with water. Obtain immediate medical attention.

5. FIRE FIGHTING INFORMATION

- Risk:** Not classified as flammable. If involved in a fire it may emit noxious and toxic fumes. Containers may burst, if overheated. Due to reaction with water producing CO₂-gas, a hazardous build up of pressure could result if contaminated containers are resealed. Combustion products may include, carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbons and HCN
- Protective Equipment:** Suitable respiratory protection with full face piece and positive air supply. PVC boots, gloves, safety helmet and protective clothing should be worn.
- Extinguishing Media:** Foam, CO₂ or Dry powder. Water may be used if no other available and then in copious quantities. Reaction between water and hot isocyanate may be vigorous. Prevent washings from entering water courses. Water spray should be used to cool containers.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Ensure suitable personal protection (see fire fighting equipment) during removal of spillages.

Environmental Precautions: Do not allow to enter drains, sewers or water courses.

Methods for Cleaning Up: Ventilate and evacuate area, keep upwind to avoid inhalation of vapours. Absorb spillage's onto sand, earth or any suitable absorbent material, (NOT sawdust or other combustible material). Leave for at least 30 minutes to react. Transfer to a container for disposal. Wash the spillage area clean with liquid decontaminant. The compositions of liquid decontaminants are given in section 16.

7. HANDLING AND STORAGE

- Handling:** Do not breathe vapour or spray. Avoid contact with skin and eyes. Atmospheric concentrations should be minimised and kept as low as reasonably practicable below the OEL. Ensure adequate ventilation is maintained.
- When the product is sprayed or heated, suitable respiratory protection with a positive air supply may be required. Avoid material contact with water.
- Storage:** Keep containers sealed and store indoors in a well-ventilated area. Keep away from frost. Keep away from moisture. If a container is contaminated do not re-seal it.
- Do not use copper or copper based containers or galvanised containers for storage. Steel containers are preferred.

8. EXPOSURE CONTROLS/PERSONAL PROTECTIVE EQUIPMENT

Wear suitable protective clothing, gloves and eye/face protection. Atmospheric concentrations should be minimised and kept as low as reasonably practical below the occupational exposure level. MDI can only be smelled if the occupational limit has been exceeded considerably. Medical supervision of all employees who handle or come into contact with respiratory sensitisers is recommended. Personnel with a history of asthmatic conditions, bronchitis or skin sensation conditions should not work with MDI based products. The Occupational Exposure Limits listed below do not apply to previously sensitised individuals. Sensitised individuals should be removed from any further exposure.

Ingredient Name	Occupational Exposure Limits
Diphenylmethanediisocyanate, isomers and Homologues	ACGIH TLV (United States 2002) TWA: 0.005 ppm
Diphenylmethane 4,4 disocyanate	ACGIH TLV (United States 2002) TWA: 0.005 ppm
Diphenylmethane 2,4 disocyanate	ACGIH TLV (United States 2002) TWA: 0.005 ppm
United Kingdom (UK) Diphenylmethanediisocyanate, isomers and Homologues	EH40-MEL (United Kingdom (UK) 2001) TWA: 0.02 mg/m ³ Form: (As NCO) STEL: 0.07 mg/m ³ Form (As NCO)
Diphenylmethane 4,4 disocyanate	EH40-NIEL (United Kingdom (UK) 2001) TWA: 0.02 mg/m ³ Form: (As NCO) STEL: 0.07 mg/m ³ Form (As NCO)
Diphenylmethane 2,4 disocyanate	EH40-MEL (United Kingdom (UK) 2001) TWA: 0.02 mg/m ³ Form: (As NCO) STEL: 0.07 mg/m ³ Form (As NCO)

Personal Protective Equipment

- In case of insufficient ventilation, wear suitable respiratory equipment with positive air supply.
Wear suitable gloves, neoprene or PVA is recommended.
Wear eye/face protection.
Wear overalls which, if contaminated, should be thoroughly cleaned should before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical:	Liquid
Colour	Brownish-red
Odour:	Slightly musty
Boiling Point	>300°C decomposes
Melting Point	Not available
Flash Point	Closed cup: 230°C (446°F) Open cup: 230°C (446°F)
Explosive properties	not explosive
Vapour pressure	not available
Specific Gravity (20°C):	1.23 (water =1)
Solubility water	Insoluble, reacts with water
Solubility other	Soluble in most organic solvents
Vapour density	8.5
Viscosity	170-270mPas (25°C)
Evaporation Rate	Not available
Saturated Vapour Concentration	>32 ug/m ³ @20°C
Autoignition Temp	>600 °C

10. STABILITY AND REACTIVITY

Hazardous Reactions:	Stable at room temperature. Reacts with water to produce carbon dioxide. Exothermic reaction with materials containing active hydrogen groups. The reaction becomes progressively more vigorous and can be violent at higher temperatures if the miscibility of the reaction partners is good or is supported by stirring or by the presence of solvents. MDI is insoluble with and heavier than water and sinks to the bottom but reacts slowly at the interface. A solid water-insoluble layer of polyurea is formed at the interface by liberating carbon dioxide gas. Avoid high temperatures. Avoid water, alcohols, aminos, bases and acids
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It. TOXICOLOGICAL INFORMATION

The health hazard is based on information available on similar products

Acute Toxicity	Ingredient Name	Test	Result	Route	Species
	Diphanymethanediisocyanate, isomers & Homologues	LD50	>5000 mg/kg	Oral	Rat
		LD50	>5000 mg/kg	Oral	Rat
	Diphanylmethane 4,4 diisocyanate	LC50	>0.49 mg/l (4 hours)	Inhalation	Rat(Respirable Aerosol)
		LD50	>5000 mg/kg	Oral	Rat
		LD50	>5000 mg/kg	Oral	Rat
		LC50	>0.49 mg/i (4 hours)	Inhalation	Rat(Respirable Aerosol)

Inhalation This product is a respiratory irritant and potential respiratory sensitiser. Repeated inhalation of vapour or aerosol at levels above the occupational exposure limit could cause respiratory sensitisation. Symptoms may include irritation to the eyes, nose, throat, and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons.

Chronic Toxicology: Rats have been exposed for two years to a respirable aerosol of polymeric MDI, which has resulted in chronic pulmonary irritation at high concentrations. Only at top level (6mg/m³), there was a significant incidence of a benign tumour of the lung (adenoma) and one malignant tumour (adenocarcinoma). There were no lung tumours at 1mg/m³ and no effects at 0.2 mg/m³. Overall, the tumour incidence, both benign and malignant, and the number of animals with the tumours was no different

to the controls. The increased incidence of lung tumours is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung, which occurred throughout the study. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage. Industrial experience in humans has not shown any link between MDI exposure and cancer developments. There are reports that chronic exposure by inhalation may result in permanent decreases in lung function. No birth defects were seen in two independent animal (rat) studies. Fetotoxicity was observed at doses that were extremely toxic (including lethal) to the mother. Fetotoxicity was not observed at doses that were not maternally toxic. The doses used in these studies were maximal, respirable concentrations, which were well in excess of defined OEL's There is no substantial evidence of mutagenic potential.

Eye contact:	The vapour, aerosol and liquid are irritant.
__Sjijn contact:	Moderate irritant.Repeated_and/or prolonged contact may cause skin sensitisation. Animal studies have shown that respiratory sensitisation can be caused by skin contact with known respiratory sensitisers including diisocyanates.
Ingestion:	Low oral toxicity. Ingestion may cause irritation of the gastrointestinal tract.

12. ECOLOGICAL INFORMATION.

Mobility	By considering the production and use of the substance. It is unlikely that significant environmental exposure will occur.						
Persistence and degradation:	Immiscible with water but will react with water to produce inert and non-biodegradable solids. Conversion to soluble products, including diamino-diphenylmethane (MDA) is very low under the optimal laboratory conditions of good dispersion and low concentrations. In air the predominant degradation process is predicted to be a relatively rapid OH radical attack, by calculation and by analogy with related diisocyanates.						
Toxicity:	By comparison with an analogous product the following values are anticipated:- <table> <tr> <td>LCO (Zebra fish)</td> <td>>1000mg/l</td> </tr> <tr> <td>EC50 (Daphnia Magna) (24 hours)</td> <td>>1000mg/l</td> </tr> <tr> <td>EC50 (E.Coli)</td> <td>> 100mg/l</td> </tr> </table>	LCO (Zebra fish)	>1000mg/l	EC50 (Daphnia Magna) (24 hours)	>1000mg/l	EC50 (E.Coli)	> 100mg/l
LCO (Zebra fish)	>1000mg/l						
EC50 (Daphnia Magna) (24 hours)	>1000mg/l						
EC50 (E.Coli)	> 100mg/l						

13. DISPOSAL CONSIDERATIONS

Disposal should be in accordance with local, state or national legislation. The generation of waste should be avoided or minimised wherever possible. If this is not possible, destruction is to be in an approved facility under controlled conditions. Waste materials should never be poured down drains or allowed into watercourses or sewers.

14. TRANSPORT INFORMATION

Land-Railway	Not regulated
Sea	Not regulated
Air	Not regulated

15. REGULATORY INFORMATION

EEC classification:	Harmful	
Hazard symbol:	Xn	Harmful
	Xi	Irritant
Risk phrases:	R20	Harmful by inhalation.
	R36/37/38	Irritating to eyes, respiratory system and skin.
	R42/43	May cause sensitization by inhalation and skin contact.
Safety phrases:	S22/23	Do not breathe vapour/gas/fumes/spray/dust.
	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 warm soapy water.
	S36/37	Wear suitable protective clothing and gloves. In
	S38	case of insufficient ventilation, wear suitable respiratory equipment.
	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. OTHER INFORMATION

Liquid decontaminants (percentage by weight or volume)

Decontaminant 1 sodium carbonate: 5-10% liquid detergent:0.2-2% water to make up to 100%

Decontaminant 2 concentrated ammonia solution: 3-8% liquid detergent: 0.2-2% water to makeup to 100%

Decontaminant 1 reacts slower than contaminant 2 but is more environmentally friendly

The information herein is to our best present knowledge correct and complete and is given in good faith but without warranty and does not therefore guarantee certain properties. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product. Recipients of our product must take responsibility for observing existing laws and regulations.

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