

Revision 1 Date Issued: January 2011

conforms to Regulation (EC) no 1907/2006

1. Identification of the substance/preparation and company

Product Name: **Flowflex HM, Flowflex LM** (high and low modulus versions)

Application: Single component polyurethane joint sealant.

Manufacturer:

Flowcrete SA (Pty) Ltd., 176 Voortrekker Street, Jacobs, Durban 4052.

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2. Hazards Identification

May cause sensitisation by inhalation and skin contact. Repeated and /or prolonged exposure may cause an allergic reaction/sensitisation. Once sensitised, an individual may produce an allergic reaction every time they are in contact with isocyanates. Individuals who have developed sensitivity may experience wheezing, tightness of the chest and shortness of breath. A hyper-reactive response to even minimal concentrations of isocyanate may develop in sensitised persons.

Contact with skin and eyes may produce some irritation.

3. Composition/information on constituents

Chemical Name	EINECS No.	CAS No.	% by weight	Symbols and Risk Phrases
Naphtha hydro treated heavy (petroleum)**	265-150-3	64742-48-9	< 10	T; R10. R65. R67.
4,4'-diphenylmethane-diisocyanate	202-966-0	101-68-8	0.1 - 1	Xn; R20. R36/37/38. R42/43

**Notes H and P (directive 67/548/CEE, annex 1) apply. Benzene content is less than 0.03%.

Contains various non-classified fillers and additives.

See section 16 Additional information, for full text regarding symbols and Risk phrases.

4. First Aid measures

- Inhalation** : Remove affected person from exposure, keep them warm and at rest. Obtain medical attention.
- Skin contact** : Wash with plenty of water and soap, or a suitable skin cleanser, as soon as possible. If irritation persists, seek medical advice.
- Eye Contact** : Hold eyelids apart and carefully and thoroughly flush with plenty of water for at least 15 minutes. Seek medical advice if irritation persists.
- Ingestion** : If the person is conscious, wash out mouth with water. Do not swallow mouth wash. Do not induce vomiting unless under medical supervision. Seek medical advice.

5. Fire-fighting measures

- Suitable extinguishing media** : Carbon dioxide (CO₂). Water spray should be used for larger fires.
- Un-Suitable extinguishing media** : High volume water jet.
- Special exposure hazards** : Burning produces carbon oxides, hydrogen cyanide, nitrogen oxides and some isocyanate vapour. Use water spray to keep the containers cool as closed containers could burst/explode when heated in a fire.
- Special protective equipment** : Wear self-contained breathing apparatus and protective suit.
- Additional information** : Do not allow contaminated extinguishing water to enter the soil, drains, sewers or water courses.

6. Accidental release measures

- Personal precautions** : Use personal protective equipment as detailed in Section 8.
Ensure adequate ventilation.
- Environmental precautions** : Prevent further leakage or spillage.
- Methods for cleaning up** : If necessary, soak up with inert absorbent material (e.g. sand, sawdust).
Shovel into suitable open-top containers, do not close container for at least 24 hours (because of possible evolution of carbon dioxide) and keep in a safe, well ventilated area. Dispose in accordance with Section 13.
If required, wash the area with plenty of water.

7. Handling and storage

- Handling** : Ensure adequate ventilation or provide exhaust ventilation in work area.
Use personal protective equipment as detailed in Section 8.
Handle and open container with care. Avoid skin and eye contact.
- Storage** : Store in a dry, cool, well-ventilated place. Keep container tightly closed.
Do not allow to freeze.

8. Exposure controls/personal protection

UK Workplace Exposure Limits (WEL) :	8 hour TWA	15 minute STEL
(from EH40: October 2007)	(Time Weighted Average)	(Short Term Exposure Limit)
Isocyanates, all (expressed as –NCO)	0.02 mg/m ³	0.07 mg/m ³
Naphtha hydro treated heavy (petroleum)	200 ppm (1200 mg/m ³)	

(from CEFIC-HSPA (Europe 2000) recommended by manufacturer, ref. EH40 2005 paragraphs 119-121.

Engineering measures to reduce exposure : Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

- Respiratory protection** : Required in insufficiently ventilated working areas.
An air-fed hood.
In the case of hypersensitivity of the respiratory tract (e.g. asthmatics and those who suffer from chronic bronchitis) it is inadvisable to work with the product.
- Eye protection** : Safety spectacles, goggles or full face shield.
- Hand protection** : Impermeable gloves (nitrile butadiene rubber [NBR], Butyl rubber [IIR], Fluorinated rubber [FKM], polyvinyl chloride [PVC], polychloroprene [CR]) .
Isocyanates can harden gloves and increase the risk of their splitting.
Check regularly for degradation and replace as necessary.
- Skin and body protection** : Protective suit and heavy duty work shoes.
- Protective measures** : Handle in accordance with good industrial hygiene and safety practice.
Wash hands before breaks and immediately after handling the product.
When using do not eat, drink or smoke.

9. Physical and chemical properties

Appearance	: Paste, colour on label.	Relative Density	: 1.3 – 1.5
Initial Boiling Point	: 137°C	Flashpoint	: > 65°C
Vapour pressure	: Not available	Ignition temperature	: Not available

10. Stability and reactivity

Material is stable when stored and handled correctly.

- Conditions to avoid** : Avoid high temperatures. Do not allow to freeze.
- Materials to avoid** : Strong acids and bases.
Isocyanate reacts with water forming carbon dioxide and polyurea solid.
- Hazardous decomposition products** : No hazardous decomposition products when stored and handled correctly.
Thermal decomposition, e.g. in a fire, produces carbon oxides, hydrogen cyanide, nitrogen oxides and some isocyanate vapour.

11. Toxicological information

- Acute oral toxicity** : 4,4'-diphenylmethane-diisocyanate
LD₅₀ Oral (rat) : > 15,000 mg/kg.
- Inhalation** : 4,4'-diphenylmethane-diisocyanate
LC₅₀ inhalation (rat) ~ 370 mg (as aerosol)/m³.
- Irritation** : This material contains a small amount of isocyanate, note that over exposure to the isocyanate entails the risk of concentration dependant irritating effects on eyes, nose, throat and respiratory tract. In mild cases the affected person may experience slight irritation of the eyes, nose and throat, possibly combined with dryness of the throat. In more severe cases the person may suffer acute bronchial irritation and difficulty in breathing.
- Sensitisation** : 4,4'-diphenylmethane-diisocyanate
Repeated and /or prolonged exposure, especially at levels above the isocyanate WEL, may cause an allergic reaction/respiratory sensitisation. Once sensitised, an individual may produce an allergic reaction every time they are in contact with isocyanates. Individuals who have developed sensitivity may experience wheezing, tightness of the chest and shortness of breath. A hyper-reactive response to even minimal concentrations of isocyanate may develop in sensitised persons.
The onset of respiratory symptoms (difficulty in breathing, coughing, asthma) may be delayed for several hours after exposure.
Repeated and/or prolonged skin contact may cause skin sensitisation.
Animal studies have shown that respiratory sensitisation can be induced by skin contact with known respiratory sensitisers including diisocyanates.
- Long term toxicity** : 4,4'-diphenylmethane-diisocyanate
Animal testing has shown no long term adverse effects at or below the WEL.
Chronic pulmonary irritation observed at high concentrations. There are reports that chronic exposure by inhalation may result in decreases in lung function.
- Carcinogenicity** : It is currently proposed in the EU that the classification for diphenylmethane diisocyanate be changed to carcinogenic, category 3.
- Mutagenicity** : No evidence of inheritable genetic effects known to us.
- Reproductive toxicity** : No evidence of impaired fertility known to us.

12. Ecological information

- Ecotoxicity** : 4,4'-diphenylmethane-diisocyanate
Observed ecotoxicity to fish, bacteria and invertebrates is low/very low and to worms and plants is very low.
- | | | |
|-------------------------|--------------------------------|--------------|
| Brachydanio rerio | LC ₀ : > 1000 mg/l | 96 hour test |
| Daphnia | EC ₅₀ : > 1000 mg/l | 24 hour test |
| Acute bacteria toxicity | EC ₅₀ : > 100 mg/l | 3 hour test |

Tested on activated sludge micro-organisms.

Additional ecological information : No data for the product itself.
Do not allow to escape into waterways, waste water or soil.

13. Disposal considerations

Unused Product/waste from cleaning etc. : Dispose of in accordance with local and national regulations.
Do not empty into drains, sewers or water courses.
EC Waste Catalogue (EWC) code: 080501* (a hazardous waste)

Contaminated packaging : Partially filled containers shall be disposed as the product above.

Well drained containers shall be disposed as hazardous packaging waste.
Use EWC Code 150110*.

14. Transport information

Not classified as hazardous for transport.

15. Regulatory information

Classification according to EEC directive:

Labelling:



Harmful

R-phrases

R42 : May cause sensitisation by inhalation.

S-phrases :

S23 : Do not breathe vapour.

S38 : In case of insufficient ventilation, wear suitable respiratory equipment.

S45 : In case of accident or if you feel unwell, seek medical advice immediately
(show this label where possible).

S36/37/39 : Wear suitable protective clothing, gloves and eye/face protection.

S60 : This material and its container must be disposed of as hazardous waste.

Special provisions statement : Contains isocyanates. See information supplied by the manufacturer.

Hazardous component(s) which must be listed on the label : 4,4'-diphenylmethane-diisocyanate

EC Directives: Dangerous Substances Directive, 67/548/EEC & adaptations.
Dangerous Preparations Directive, 1999/45/EC.
Safety Data Sheets Directive, 91/155/EEC and adaptations.

Statutory Instruments: Chemicals (Hazard Information & Packaging for Supply) Regs 2002.
Control of Substances Hazardous to Health Regs 2002.
Environmental Protection (Duty of Care) Regs. 1991.

Codes of Practice Waste Management. The Duty of Care.
Approved classification and labelling guide (Fifth edition). L131.
The compilation of safety data sheets (Third edition).

Guidance Notes Occupational Exposure Limits EH40
CHIP for Everyone HSG(108)

16. Other Information

This safety data sheet has been prepared in accordance with REACH.
This is in addition to the Health and Safety at Work Act 1974.

Users of our products should take appropriate measures to ensure working practices are in accordance with the Control of Substances Hazardous to Health Regulations (COSHH).

This data sheet does not replace the obligation of the user to provide their own assessment of workplace risk as required by other Health & Safety legislation.

EC Directive relating to the classification, packaging and labelling of dangerous substances and preparations – Classification(s) and Risk (R) phrase(s) referred to in this document:-

Xn	: Harmful	T	: Toxic
R10	: Flammable.		
R20	: Harmful by inhalation.		
R20/21	: Harmful by inhalation and in contact with skin.		
R36/37/38	: Irritating to eyes, respiratory system and skin.		
R38	: Irritating to skin.		
R42	: May cause sensitisation by inhalation.		
R42/43	: May cause sensitisation by inhalation and skin contact.		
R65	: Harmful: may cause lung damage if swallowed.		

The European Committee of Paint, Printing Ink and Artist's Colours Manufacturers' Associations (CEPE) provides the following information on coatings containing isocyanates:-

"Ready-to-use paints containing isocyanates may have an irritant effect on mucous membranes – especially on breathing organs – and cause hypersensitivity reactions. Inhalation of vapour or spray mist may cause sensitisation. When handling paints containing isocyanates all precautions required for solvent-containing paints must be followed. Vapour and spray mist in particular should not be inhaled. Persons who are allergic, asthmatic or prone to respiratory ailments should not work with isocyanate-containing paints."

Training Advice

Applicators need to be trained in:-
Handling and hygiene associated with use of industrial chemicals.
Correct mixing and application of the product.
Correct cleaning and disposal methods.

Restrictions on Use

The product is intended for use by appropriately trained applicators in industrial situations. It is not suitable for use in home DIY applications, especially because of its hazardous nature and the protective measures required.

Notes

Do not use organic solvents for skin cleansing, it will lead to defatting of the skin, skin irritation and/or dermatitis.
Some solvents can be absorbed through the skin.
Beware of cross contamination where different products are in use in the same location.

This safety data sheet is based on our present knowledge and experience and is intended to serve as a guide for safe handling of the product regarding to health and environmental aspects.