Material SAFETY DATA SHEET
Griptop LD - Hardener

1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Griptop LD - Hardener**

Description: Hardener component of three components flow applied polyurethane floor topping

Manufacturer: **DCP Saudi Co**

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2: COMPOSITION / INFORMATION ON INGREDIENTS

Composition: Mixture of polyisocyanate based on diphenylmethane diisocyanate.

Hazardous Ingredient(s)	Symbol	Risk Phrases	CAS No.	%
Diphenylmethane-diisocyanate, isomers & homologues	Xn	R20, 36/37/38, 40, R42/43, 48/20	9016-87-9	60 – 75
Diphenylmethane-2,4'-diisocyanate	Xn	R20, 36/37/38, 40, 42/43, 48/20	5873-54-1	10 - 20
Diphenylmethane-4,4'-diisocyanate	Xn	R20, 36/37/38, 40, 42/43, 48/20	101-68-8	5 – 15

Refer to Section 8 for Occupational Exposure Limits.

3: HAZARDS IDENTIFICATION

Hazard information:
Harmful by inhalation.
Irritating to eyes, respiratory system and skin.
May cause sensitization by inhalation and skin contact.
Limited evidence of a carcinogenic effect.
Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Classification: Xn. R20, 36/37/38, 42/43, 40, 48/20.

4: FIRST AID MEASURES

Eyes:	Hold the eyes open and rinse with preferably lukewarm water for a sufficiently long period of time (at least 10 minutes). Contact an ophthalmologist.
Skin:	In the event of contact with the skin, preferably wash with a cleanser based on polyethylene glycol or with plenty of warm water and soap. Soiled, soaked clothing and shoes must be immediately removed, decontaminated and disposed of. Consult a doctor in the event of a skin reaction.
Inhalation:	Take the person into the fresh air and keep him warm, let him rest; if there is difficulty in breathing, medical advice is required.
Ingestion:	DO NOT induce the patient to vomit, medical advice is required.

5: FIRE FIGHTING MEASURES

Flash Point:	220℃
Special Exposure Hazards:	Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen, isocyanate vapors and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes. Fire in vicinity poses risk of pressure build-up and rupture. Containers at risk from fire should be cooled with water and, if possible, removed from the danger area.
Extinguishing Media:	Carbon dioxide (CO2), Foam, extinguishing powder, in cases of larger fires, water spray should be used. Never use high volume water jets.
Personal Protective Equipment:	During fire-fighting respirator with independent air-supply and airtight garment is required. Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Put on protective equipment. Ensure adequate ventilation/exhaust extraction. Keep unauthorized persons away.
Environmental Precautions:	Do not allow to escape into waterways, wastewater or soil.
Decontamination Procedures:	Remove mechanically; cover the remainder with wet, absorbent material (e.g. sawdust, chemical binder based on calcium silicate hydrate, sand). After approx. one hour transfer to waste container and do not seal (evolution of CO_2!). Keep damp in a safe ventilated area for several days. Spill area can be decontaminated with the following recommended decontamination solution: *Decontamination solution 1*: 8-10% sodium carbonate and 2% of liquid soap in water. *Decontamination solution 2*: Liquid/yellow soap (potassium soap with ~15% anionic tenside): 20ml; Water:700ml; Polyethylenglycol (PEG 400): 350ml.

7: HANDLING AND STORAGE

Handling: Provide sufficient air exchange and/or exhaust in work rooms. Exhaust ventilation necessary if product is sprayed. The threshold limit values noted in Chapter 8 must be monitored. In all areas where isocyanate aerosols and/or vapor concentrations are produced in elevated concentrations, exhaust ventilation must be provided in such a way that the workplace exposure limits (WEL) is not exceeded. The air should be drawn away from the personnel handling the product. The precautions required in the handling of isocyanates must be taken. Avoid contact with skin and eyes and the inhalation of vapor. Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work and use skin-protecting ointment. Keep working clothes separately. Take off all contaminated clothing immediately.

Storage: Keep container tightly closed in a dry and well-ventilated place. Further information on the storage conditions which must be observed to preserve quality can be found in our product information sheet.

8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ingestion: Prevent eating, drinking or smoking in the area of product use.

Eye Contact: Safety glasses or chemical goggles.

Skin Contact: Impervious gloves (e.g. Polychloroprene - CR: thickness ≥ 0.5 mm; breakthrough time ≥ 480 min. OR Nitrile rubber - NBR: thickness ≥ 0.35 mm; breakthrough time ≥ 480 min. OR Butyl rubber - IIR: thickness ≥ 0.5 mm; breakthrough time ≥ 480 min.). And protective clothing.

Respiratory Protection: Respiratory protection required in insufficiently ventilated working areas and during spraying. An air-fed mask, or for short periods of work, a combination of charcoal filter and particulate filter is recommended.

In 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.

Engineering Controls: Use only in well ventilated areas. Local exhaust ventilation is recommended.

Exposure Guidelines:

Component	CAS number	TLV	
		Value	Ceiling limit
Diphenylmethane-4,4'-diisocyanate	101-68-8	0.05 mg/m^3	2
Phenyl isocyanate	103-71-9	0.05 mg/m^3	1
		Derived No Effect Level (DNEL) or Derived Minimal Effect Level (DMEL)	
		Short term	Long term
Diphenylmethane-2,4'-diisocyanate	5873-54-1	0.1 mg/m³ air inhalation	0.05 mg/m³ air inhalation
diphenylmethane-4,4'-diisocyanate	101-68-8	0.1 mg/m³ air inhalation	0.05 mg/m³ air inhalation

9: PHYSICAL AND CHEMICAL PROPERTIES

Form:	Viscous liquid
Colour:	Brown
Odour:	Musty
Flash Point (closed cup) (°C):	220
Boiling Point (°C):	> 300
Freezing Point (°C):	– 42
Relative Density (@25°C):	1.17 – 1.23
Water Solubility:	Insoluble

10: STABILITY AND REACTIVITY

Stability:	Polymerises at about 200°C with evolution of CO_2.
Conditions to Avoid:	None known.
Chemical Incompatibility:	Exothermic reaction with amines and alcohols; reacts with water forming CO_2; in closed containers, risk of bursting owing to increase of pressure.
Hazardous Decomposition Products:	No hazardous decomposition products when used as directed.

11: TOXICOLOGICAL INFORMATION

The following toxicological assessment is based on knowledge of the toxicity of the product's components.
Expected oral LD50, rat >2,000mg/kg

Health Effects

On Eyes:	Irritant.
On Skin:	Irritant.
By Inhalation:	Harmful.
By Ingestion:	Irritant.

12: ECOLOGICAL INFORMATION

Environmental Assessment:	When used and disposed off as intended, no adverse environmental effects are foreseen.
Mobility:	Not applicable.
Degradability:	Not applicable.
Bioaccumulation:	Not applicable.
Acute Fish Toxicity:	Not applicable.

13: DISPOSAL CONSIDERATION

Disposal must be in accordance with local and national legislation.

Unused Product:	Dispose off through an authorized waste contractor to a licensed site.
Used/ Contaminated Product:	As for unused product.
Packaging:	May be steam cleaned and recycled.

14: TRANSPORT INFORMATION

This product is **not** classified as dangerous for transport.

15: REGULATORY INFORMATION

Hazard Label Data: **Xn**

Harmful

Contains: Diphenylmethane-diisocyanate, isomers and homologues.
Diphenylmethane-2,4'-diisocyanate.
Diphenylmethane-4,4'-diisocyanate.

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.
R40	Limited evidence of a carcinogenic effect.
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Safety Phrases:

S23	Do not breathe vapour.
S24	Avoid contact with skin.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37	Wear suitable gloves.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16: OTHER INFORMATION

Issue Date:	22/04/2014	Revised Date:	
Disclaimer:	The information contained herein is derived from the best available sources and is believed to be accurate. However, no guarantee is expressed or implied regarding the accuracy of the data given in the use of this product.		