Safety Data Sheet
according to Regulation (EC)
No. 453/2010

1. Identification of the Substance/Mixture and the Company/Undertaking

1.1 Product Identifier

Product Name: NEW FLOWSEAL PU MATT HARDENER

Revision Date: 21/08/2015

Supercedes Date: New SDS

1.2 Relevant identified uses of the substance or mixture and uses advised against

Coatings and paints, thinners, paint removers. Hand-mixing with intimate contact and only PPE available. Wide dispersive indoor use resulting in inclusion into or onto a matrix. For use by appropriately trained applicators. Roller application or brushing. Low energy spreading of coatings. Advised against: Home DIY applications, because of the health hazards and training required.

1.3 Details of the supplier of the safety data sheet

Supplier:

Flowcrete UK Ltd.
The Flooring Technology Centre
Booth Lane
Moston, Sandbach, Cheshire. UK
CW11 3QF

Tel: +44 (0)1270 753000
Fax: +44 (0)1270 753333
ehs.uk@flowcrete.com
http://www.flowcrete.co.uk

Datasheet Produced by: ehs.uk@flowcrete.com

1.4 Emergency telephone number:

CHEMTREC +001 703 5273887 (Outside US)
CHEMTREC 1-800-424-9300 (Inside US)

2. Hazard Identification

2.1 Classification of the substance or mixture

Classification according to Classification, Labeling & Packaging Regulation (EC) 1272/2008

HAZARD STATEMENTS

Other EU extensions	EUH204
Skin Sensitizer, category 1	H317
Serious Eye Damage, category 1	H318
Acute Toxicity, Inhalation, category 4	H332

STOT, single exposure, category 3, RTI	H335
Hazardous to the aquatic environment, Chronic, category 3	H412

2.2 Label elements

Symbol(s) of Product

Signal Word

Danger

Named Chemicals on Label

Hexamethylene diisocyanate, polyoxyethylene tridecyl ether phosphate, hexamethylene-1,6-diisocyanate homopolymer

HAZARD STATEMENTS

Other EU extensions	EUH204	Contains isocyanates. May produce an allergic reaction.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.
Serious Eye Damage, category 1	H318	Causes serious eye damage.
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
STOT, single exposure, category 3, RTI	H335	May cause respiratory irritation.
Hazardous to the aquatic environment, Chronic, category 3	H412	Harmful to aquatic life with long lasting effects.

PRECAUTION PHRASES

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/ face protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.

2.3 Other hazards

No Information

Results of PBT and vPvB assessment:

The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

3. Composition/Information On Ingredients

3.2 Mixtures

Hazardous Ingredients

CAS-No.	EINEC No.	Name According to EEC	%
28182-81-2		hexamethylene-1,6-diisocyanate homopolymer	75-100
9046-01-9		polyoxyethylene tridecyl ether phosphate	2.5-10
98-94-2			0.1-1.0
822-06-0	212-485-8	Hexamethylene diisocyanate	0.1-1.0

CAS-No.	REACH Reg No.	CLP Symbols	CLP Hazard Statements	M-Factors
28182-81-2	01-2119488934-20	GHS07	H317-332-335	
9046-01-9		GHS05-GHS09	H315-318-411	
98-94-2		GHS02-GHS05-GHS06-GHS09	H226-301-311-314-331-411	
822-06-0	01-2119457571-37	GHS05-GHS06-GHS08	H302-314-317-330-334	

Additional Information: The text for CLP Hazard Statements shown above (if any) is given in Section 16.

4. First-aid Measures

4.1 Description of First Aid Measures

GENERAL NOTES: When symptoms persist or in all cases of doubt seek medical advice. Show this safety data sheet to the doctor in attendance. Risk of product entering the lungs on vomiting after ingestion. Remove contaminated clothing and shoes.
AFTER INHALATION: Keep respiratory tract clear. Remove person to fresh air. If signs/symptoms continue, get medical attention.
AFTER SKIN CONTACT: If skin irritation persists, call a physician.
AFTER EYE CONTACT: Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
AFTER INGESTION: Gently wipe or rinse the inside of the mouth with water. Do not induce vomiting without medical advice. If swallowed, seek medical advice immediately and show this container or label. If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel.

Self protection of the first aider:

No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

No Information

4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

5. Fire-fighting Measures

5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

FOR SAFETY REASONS NOT TO BE USED: Alcohol, Alcohol based solutions, any other media not listed above.

5.2 Special hazards arising from the substance or mixture

No Information

5.3 Advice for firefighters

Keep containers and surroundings cool with water spray. Use water spray to cool unopened containers. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Fire will produce dense black smoke containing hazardous combustion products (see section 10). In the event of fire, wear self-contained breathing apparatus. High volume water jet. Hazardous decomposition products formed under fire conditions. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

May cause long-term adverse effects in the aquatic environment.

6.3 Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations

(see section 13). After cleaning, flush away traces with water. Refer to protective measures listed in sections 7 and 8.

6.4 Reference to other sections

FURTHER INSTRUCTIONS: Please refer to EU disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

7. Handling and Storage

7.1 Precautions for safe handling

Provide sufficient air exchange and/or exhaust in work rooms. Wear personal protective equipment. Use only in well-ventilated areas. Do not breathe vapours or spray mist. Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is being used.
Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons. In the case of sensitisation to any of the ingredients, it is inadvisable to work with the product. Handle in accordance with good industrial hygiene and safety practice. Keep working clothes separately. Keep away from food, drink and animal feedingstuffs. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke. Wash hands and face before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

CONDITIONS TO AVOID: Do not freeze. Direct sources of heat. Avoid temperatures above 40°C, direct sunlight and contact with sources of heat.
STORAGE CONDITIONS: Do not freeze. Store in original container. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep locked up or in an area accessible only to qualified or authorised persons. Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

7.3 Specific end use(s)

No specific advice for end use available. Hardener B - Flowfresh + Flowcrete Cove Coating, Grout + Cove. Component of a resin flooring product. The mixing and application to be in accordance with the technical data sheets.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Ingredients with Occupational Exposure Limits
(UK WELS)

Name	CAS-No.	LTEL ppm	STEL ppm	STEL mg/m3	LTEL mg/m3	OEL Note
hexamethylene-1,6-diisocyanate homopolymer	28182-81-2			0.07	0.02	
polyoxyethylene tridecyl ether phosphate	9046-01-9					
	98-94-2					
Hexamethylene diisocyanate	822-06-0			0.07	0.02	Isocyanates, all (as -NCO)

FURTHER ADVICE: Refer to the regulatory exposure limits for the workforce enforced in each country. Some components may not have been classified at the EU level under the dangerous substances and preparations regulation.

8.2 Exposure controls

Personal Protection
RESPIRATORY PROTECTION: In case of insufficient ventilation wear suitable respiratory equipment. Respirator with a vapor filter. Respirator with filter for organic vapor.
EYE PROTECTION: Eye wash bottle with pure water. Safety goggles. Face-shield. Safety glasses with side-shields conforming to EN166.
HAND PROTECTION: Isocyanates can harden gloves and increase the risk of their splitting. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Rubber or plastic apron. Remove contaminated clothing and protective equipment before entering eating areas.
OTHER PROTECTIVE EQUIPMENT: No Information
ENGINEERING CONTROLS: At temperatures below 40°C, provide a good standard of general ventilation (not less than 5 air changes per hour). At temperatures over 40°C - and always if sprayed - exhaust ventilation is required. As a rule, at least 5 air changes per hour are recommended at the workplace.

Chemical Name:

hexamethylene-1,6-diisocyanate homopolymer

EC No.: **CAS-No.:**
28182-81-2

DNELs - Derived no effect level

	Workers				Consumers			
Route of Exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not required							
Inhalation	1 mg/m³		0.5 mg/m³					
Dermal								

PNEC's - Predicted no effect concentration

Environmental protection target	PNEC
Fresh water	0.199 mg/l
Fresh water sediments	44551 mg/kg
Marine water	0.0199 mg/l
Marine sediments	4455 mg/kg
Food chain	
Microorganisms in sewage treatment	100 mg/l
soil (agricultural)	8884 mg/kg
Air	

Chemical Name:

Hexamethylene diisocyanate

EC No.: **CAS-No.:**
212-485-8 822-06-0

DNELs - Derived no effect level

	Workers				Consumers			
Route of Exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not required							
Inhalation		0.07 mg/m³	0.035 mg/m³	0.035 mg/m³				
Dermal								

PNEC's - Predicted no effect concentration

Environmental protection target	PNEC
Fresh water	0.0774 mg/l
Fresh water sediments	0.01334 mg/kg
Marine water	0.00774 mg/l
Marine sediments	0.001344
Food chain	
Microorganisms in sewage treatment	8.42 mg/l
soil (agricultural)	0.026 mg/kg
Air	

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance: Not determined

Physical State No Information

Odor No Information

Odor threshold Not determined

pH Not determined

Melting point / freezing point (°C)	Not determined
Boiling point/range (°C)	255 - N.D.
Flash Point, (°C)	999
Evaporation rate	Not determined
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	Not determined
Vapour Pressure	Not determined
Vapour density	Not determined
Relative density	Not determined
Solubility in / Miscibility with water	Not determined
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	Not determined
Decomposition temperature (°C)	Not determined
Viscosity	Not determined
Explosive properties	Not determined
Oxidising properties	Not determined

9.2 Other information

VOC Content g/l: <10

This is a calculated maximum VOC content for the mixed ready to use product (to Directive 2004/42/EC).

10. Stability and Reactivity

10.1 Reactivity

No reactivity hazards known under normal storage and use conditions.

10.2 Chemical stability

Stable under recommended storage conditions. No decomposition if stored and applied as directed. Container can be pressurized by carbon dioxide due to reaction with humid air and/or water. Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerisation may occur. Polymerises at about 200°C with evolution of CO2.

10.4 Conditions to avoid

Do not freeze. Direct sources of heat. Avoid temperatures above 40°C, direct sunlight and contact with sources of heat.

10.5 Incompatible materials

Acids. Strong oxidizing agents. Amines and alcohols cause exothermic reactions. Keep away from oxidising agents, strongly acid or alkaline materials, as well as of amines, alcohols and water.

10.6 Hazardous decomposition products

Preparation reacts slowly with water resulting in evolution of CO2. Evolution of CO2 in closed containers causes overpressure and produces a risk of bursting. In case of fire hazardous decomposition products may be produced such as: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke.

11. Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity:

Oral LD50: No Information

Inhalation LC50: No Information

Irritation: No information available.

Corrosivity: No information available.

Sensitization: No information available.

Repeated dose toxicity: No information available.

Carcinogenicity: No information available.

Mutagenicity: No information available.

Toxicity for reproduction: No information available.

STOT-single exposure: No information available.

STOT-repeated exposure: No information available.

Aspiration hazard: No information available.

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested. Data on individual components are tabulated below:

CAS-No.	Name According to EEC	Oral LD50	Dermal LD50	Vapor LC50
28182-81-2	hexamethylene-1,6-diisocyanate homopolymer	> 2500 mg/kg (rat)	> 2001 mg/kg (rat)	
822-06-0	Hexamethylene diisocyanate	959 mg/kg (rat)	>7000 mg/kg (rat)	0.124 mg/l, 4 hrs (rat)

Additional Information:

Corrosive - causes irreversible eye damage. Isocyanates may cause acute irritation and/or sensitisation of the respiratory system leading to tightness of the chest, wheeziness and an asthmatic condition. In the case of sensitisation to any of the ingredients, it is inadvisable to work with the product. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons.

12. Ecological Information

12.1 Toxicity:

EC50 48hr (Daphnia): No information

IC50 72hr (Algae): No information

LC50 96hr (fish): No information

12.2 Persistence and degradability: No information

12.3 Bioaccumulative potential: No information

12.4 Mobility in soil: No information

12.5 Results of PBT and vPvB assessment: The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

12.6 Other adverse effects: No information

CAS-No.	Name According to EEC	EC50 48hr	IC50 72hr	LC50 96hr
28182-81-2	hexamethylene-1,6-diisocyanate homopolymer	> 100 mg/l	> 1000 mg/l	> 100 mg/l (danio rerio)
9046-01-9	polyoxyethylene tridecyl ether phosphate	No information	No information	
98-94-2		No information	No information	No information
822-06-0	Hexamethylene diisocyanate	No information	>77.4 mg/l	No information

Further Ecological Information

Contains the following ingredients which are classified as water dangerous according to EEC directive No. 76/464/EEC in percentages > 1%.

CAS-No.	Name According to EEC
9046-01-9	polyoxyethylene tridecyl ether phosphate

13. Disposal Considerations

13.1 **WASTE TREATMENT METHODS:** Dispose of as hazardous waste in compliance with local and national regulations. If recycling is not practicable, dispose of in compliance with local regulations. Container hazardous when empty. Empty containers should be taken to an approved waste handling site for recycling or disposal. The product should not be allowed to enter drains, water courses or the soil.

European Waste Code: 080119*
Packaging Waste Code: 150110

14. Transport Information

14.1	**UN number**	No Information
14.2	**UN proper shipping name**	Not regulated for transport according to ADR/RID, IMDG, and IATA regulations.
	Technical name	No Information
14.3	**Transport hazard class(es)**	No Information
	Subsidiary shipping hazard	No Information
14.4	**Packing group**	No Information
14.5	**Environmental hazards**	No Information
14.6	**Special precautions for user**	Not applicable
	EmS-No.:	No Information
14.7	**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code**	Not applicable

15. Regulatory Information

15.1 **Safety, health and environmental regulations/legislation for the substance or mixture:**

National Regulations:

Denmark Product Registration Number:	No Information
Danish MAL Code:	No Information
Sweden Product Registration Number:	No Information
Norway Product Registration Number:	No Information

WGK Class: No Information

Chemical Safety Assessment:

15.2 No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

16. Other Information

Text for CLP Hazard Statements shown in Section 3 describing each ingredient:

H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

Reasons for revision

This Safety Data Sheet (SDS) has been revised to meet the new EU CLP requirements. There have been both formatting and content changes based on the CLP classification (if applicable), please review each section of the SDS for specific changes.

List of References:

This Safety Data Sheet was compiled with data and information from the following sources:

The Ariel Regulatory Database provided by the 3E Corporation in Copenhagen, Denmark
ESIS (The European Chemical Substances Information System), provided by the European Commission Joint Research Centre in Ispra, Italy
Annex VI of the EU Council Directive 67/548/EEC
Council Directive 67/548/EEC - Annex I or EU Council Directive 1999/45/EC
European Union (EC) Regulation No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation)
EU Council Decision 2000/532/EC and its Annex entitled "List of Wastes"

Acronym & Abbreviation Key:

CLP	Classification, Labeling & Packaging Regulation
EC	European Commission
EU	European Union
US	United States
CAS	Chemical Abstract Service
EINECS	European Inventory of Existing Chemical Substances
REACH	Registration, Evaluation, Authorization of Chemicals Regulation
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
LTEL	Long term exposure limit
STEL	Short term exposure limit
OEL	Occupational exposure limit
ppm	Parts per million
mg/m3	Milligrams per cubic meter

TLV	Threshold Limit Value
ACGIH	American Conference of Governmental Industrial Hygienists
OSHA	Occupational Safety & Health Administration
PEL	Permissible Exposure Limits
VOC	Volatile organic compounds
g/l	Grams per liter
mg/kg	Milligrams per kilogram
N/A	Not applicable
LD50	Lethal dose at 50%
LC50	Lethal concentration at 50%
EC50	Half maximal effective concentration
IC50	Half maximal inhibitory concentration
PBT	Persistent bioaccumulative toxic chemical
vPvB	Very persistent and very bioaccumulative
EEC	European Economic Community
ADR	International Transport of Dangerous Goods by Road
RID	International Transport of Dangerous Goods by Rail
UN	United Nations
IMDG	International Maritime Dangerous Goods Code
IATA	International Air Transport Association
MARPOL	International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978
IBC	International Bulk Container

For further information, please contact: Technical Services Department

The information on this sheet corresponds to our present knowledge. It is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage, and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions and recommendations are not followed.