

Safety Data Sheet according to Regulation (EC) No. 2015/830

SECTION 1: Identification of the Substance/Mixture and the Company/Undertaking

1.1 Product Identifier COATING/GROUT/COVE Revision Date: 19/01/2017
HARDENER

Product Name: Coating/Grout/Cove Hardener Supercedes Date: 28/05/2015

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)

SECTION 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 Irritation, category 2 H315
Skin Sensitizer, category 1 H317
Eye Irritation, category 2 H319

| Acute Toxicity, Inhalation, category 4 | H332 |
|--|------|
| Respiratory Sensitizer, category 1 | H334 |
| STOT, single exposure, category 3, RTI | H335 |
| Carcinogenicity, category 2 | H351 |
| STOT, repeated exposure, category 2 | H373 |

2.2 Label elements

Symbol(s) of Product



Signal Word

Danger

Named Chemicals on Label

4,4'-Methylenediphenyl diisocyanate, Diphenylmethane-2,4'-diisocyanate, Isocyanic acid, polymethylenepolyphenylene ester

HAZARD STATEMENTS

| Other EU extensions | EUH204 | Contains isocyanates. May produce an allergic reaction. |
|--|--------|--|
| Skin Irritation, category 2 | H315 | Causes skin irritation. |
| Skin Sensitizer, category 1 | H317 | May cause an allergic skin reaction. |
| Eye Irritation, category 2 | H319 | Causes serious eye irritation. |
| Acute Toxicity, Inhalation, category 4 | H332 | Harmful if inhaled. |
| Respiratory Sensitizer, category 1 | H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| STOT, single exposure, category 3, RTI | H335 | May cause respiratory irritation. |
| Carcinogenicity, category 2 | H351 | Suspected of causing cancer. |
| STOT, repeated exposure, category 2 | H373 | May cause damage to organs through prolonged or repeated exposure. |
| PRECAUTION PHRASES | | |
| | | |

| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
|--------------|---|
| P280 | Wear protective gloves/protective clothing/eye protection/ |
| | face protection. |
| P284 | Wear respiratory protection. |
| P285 | In case of inadequate ventilation wear respiratory protection. |
| 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. |
| P308+313 | IF exposed or concerned: Get medical advice/attention. |
| P314 | Get medical advice/attention if you feel unwell. |
| P333+313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P341 | If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| P342+311 | If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. |
| | |

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.

SECTION 3: Composition/Information On Ingredients

3.2 Mixtures

Hazardous Ingredients

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| CAS-No. | EINEC No. | Name According to EEC | <u>%</u> |
|-----------|-------------|--|----------|
| 9016-87-9 | - (Polymer) | Isocyanic acid, polymethylenepolyphenylene ester | 50-75 |
| 5873-54-1 | 227-534-9 | Diphenylmethane-2,4'-diisocyanate | 10-25 |
| 101-68-8 | 202-966-0 | 4,4'-Methylenediphenyl diisocyanate | 10-25 |

| CAS-No. | REACH Reg No. | CLP Symbols | CLP Hazard Statements | M-Factors |
|-----------|------------------|-------------|----------------------------------|-----------|
| 9016-87-9 | Exempt | GHS07-GHS08 | H315-317-319-332-334-335-351-373 | |
| 5873-54-1 | 01-2119480143-45 | GHS07-GHS08 | H315-317-319-332-334-335-351-373 | |
| 101-68-8 | 01-2119457014-47 | GHS07-GHS08 | H315-317-319-332-334-335-351-373 | |

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

SECTION 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. Remove contaminated clothing and shoes.

AFTER INHALATION: Consult a physician after significant exposure. Keep respiratory tract clear. Remove person to fresh air. If signs/symptoms continue, get medical attention.

AFTER SKIN CONTACT: Use a mild soap if available. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.

AFTER EYE CONTACT: Keep eye wide open while rinsing. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. If eye irritation persists, consult a specialist.

AFTER INGESTION: Gently wipe or rinse the inside of the mouth with water. Never give anything by mouth to an unconscious person. 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.

SECTION 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

Use water spray to cool unopened containers. Fire will produce dense black smoke containing hazardous combustion products (see section 10). In the event of fire, wear self-contained breathing apparatus. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 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

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Do not allow material to contaminate ground water system. Prevent product from entering drains. Keep the container open.

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.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling

Provide sufficient air exchange and/or exhaust in work rooms. Wear personal protective equipment. 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. 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: Avoid temperatures above 40 °C, direct sunlight and contact with sources of heat. Do not freeze. **STORAGE CONDITIONS:** 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)

Hardener B - Flowfresh + Flowcrete Cove Coating, Grout + Cove. The mixing and application to be in accordance with the technical data sheets.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control parameters

Ingredients with Occupational Exposure Limits (UK WELS)

| <u>Name</u> | CAS-No. | LTEL ppm | STEL ppm | STEL mg/m3 | LTEL mg/m3 |
|--|--------------|----------|----------|------------|------------|
| Isocyanic acid, polymethylenepolyphenylester | ene9016-87-9 | | | 0.07 | 0.02 |
| Diphenylmethane-2,4'-diisocyanate | 5873-54-1 | | | 0.07 | 0.02 |
| 4,4'-Methylenediphenyl diisocyanate | 101-68-8 | | | 0.07 | 0.02 |

Name CAS-No. OEL Note

Isocyanic acid, 9016-87-9 Isocyanates, all (as - NCO)

Diphenylmethane-2,4'-diisocyanate 5873-54-1 Isocyanates, all (as - NCO)

4,4'-Methylenediphenyl diisocyanate

101-68-8 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 under the EU CLP Regulation.

8.2 Exposure controls

Personal Protection

RESPIRATORY PROTECTION: In case of insufficient ventilation wear suitable respiratory equipment. Respirator with a vapor filter.

EYE PROTECTION: Eye wash bottle with pure water. Safety goggles. 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 gloves. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). Long sleeved clothing. Remove and wash contaminated clothing before re-use. 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. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

Chemical Name:

Diphenylmethane-2,4'-diisocyanate

EC No.: CAS-No.: 227-534-9 5873-54-1

DNELs - Derived no effect level

| | Workers | | | | Consumers | | | |
|------------|--|-----------------------|-------------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|
| Route of | Acute effect Acute effects Chronic Chronic effects | | Acute effect | Acute effects | Chronic | Chronic effects | | |
| Exposure | local | systemic | effects local | systemic | local | systemic | effects local | systemic |
| Oral | | Not required | | | 20 mg/kg bw/c | | <u> </u> | |
| Inhalation | 0.1 mg/m ³ | 0.1 mg/m ³ | 0.05 mg/m ³ | 0.05 mg/m ³ | 0.05 mg/m ³ | 0.05 mg/m ³ | 0.025 mg/m ³ | 0.025 mg/m ³ |
| Dermal | 28.7 mg/cm ² 50 mg/kg bw/d | | 17.2 mg/cm ² | 25 ma/ka bw/a | | | | |

PNEC's - Predicted no effect concentration

| Environmental protection target | PNEC |
|------------------------------------|-----------|
| Fresh water | >1 mg/l |
| Fresh water sediments | |
| Marine water | >0.1 mg/l |
| Marine sediments | |
| Food chain | |
| Microorganisms in sewage treatment | >1 mg/l |
| soil (agricultural) | >1 mg/kg |
| Air | |

Chemical Name:

Date Printed: 19/01/2017

4,4'-Methylenediphenyl diisocyanate

EC No.: CAS-No.: 202-966-0 101-68-8

DNELs - Derived no effect level

| | Workers | | | Consumers | | | | |
|------------|--|-----------------------|-------------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|
| Route of | Acute effect Acute effects Chronic Chr | | Chronic effects | Acute effect | Acute effects | Chronic | Chronic effects | |
| Exposure | local | systemic | effects local | systemic | local | systemic | effects local | systemic |
| Oral | Not required | | | 20 mg/kg bw/d | | | | |
| Inhalation | 0.1 mg/m ³ | 0.1 mg/m ³ | 0.05 mg/m ³ | 0.05 mg/m ³ | 0.05 mg/m ³ | 0.05 mg/m ³ | 0.025 mg/m ³ | 0.025 mg/m ³ |
| Dermal | 28.7 mg/cm ² 50 mg/kg bw/d | | 17.2 mg/cm ² | 25 mg/kg bw/d | | | | |

PNEC's - Predicted no effect concentration

| Environmental protection target | PNEC |
|------------------------------------|-----------|
| Fresh water | >1 mg/l |
| Fresh water sediments | |
| Marine water | >0.1 mg/l |
| Marine sediments | |
| Food chain | |
| Microorganisms in sewage treatment | >1 mg/l |
| soil (agricultural) | >1 mg/kg |
| Air | |

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance: brown
Physical State Liquid

Odor earthy, musty

Odor threshold Not determined

pH Not determined

Melting point / freezing point (°C) Not determined

Boiling point/range (°C) N.D. - N.D.

Flash Point, (°C) >100

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 ca. 1.23

Solubility in / Miscibility with water Reacts with water to produce carbon dioxide and polyurea solid.

Partition coefficient: n-octanol/water

Auto-ignition temperature (°C)

Not determined

Not determined

Not determined

Not determined

Not determined

Not determined

Explosive properties

Not Applicable

Oxidising properties Not Applicable

9.2 Other information

VOC Content g/l: <20

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

SECTION 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. Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.

10.3 Possibility of hazardous reactions

Polymerises at about 200°C with evolution of CO2.

10.4 Conditions to avoid

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

10.5 Incompatible materials

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

10.6 Hazardous decomposition products

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. Preparation reacts slowly with water resulting in evolution of CO2. Evolution of CO2 in closed containers causes overpressure and produces a risk of bursting.

SECTION 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: May cause respiratory allergy and allergic contact eczema.

Repeated dose toxicity: No information available.

Carcinogenicity: Suspected of causing cancer by inhalation. This is of particular concern when in aerosol

form e.g. when sprayed.

Mutagenicity: No information available.

Toxicity for reproduction: No information available.

STOT-single 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:

No information available.

| CAS-No. | Name According to EEC | Oral LD50 | Dermal LD50 | Vapor LC50 |
|-----------|--|-----------------------------------|-------------------------------------|------------|
| 9016-87-9 | Isocyanic acid, polymethylenepolyphenylene ester | >10000 mg/kg (rat) OECD TG 401 | >9400 mg/kg (rabbit) OECD TG 402 | |
| 5873-54-1 | Diphenylmethane-2,4'-diisocyanate | >2000 mg/kg (rat) | >9400 mg/kg (rabbit) OECD 402 | |
| 101-68-8 | 4,4'-Methylenediphenyl diisocyanate | 15000 mg/kg | > 9400 mg/kg (rabbit) OECD 402 | |

Additional Information:

Date Printed: 19/01/2017

STOT-repeated exposure:

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. Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates. Isocyanates may cause acute irritation and/or sensitisation of the respiratory system leading to tightness of the chest, wheeziness and an asthmatic condition.

SECTION 12: Ecological Information

12.1 Toxicity:

EC50 48hr (Daphnia):

IC50 72hr (Algae):

No information

No information

No information

12.2 Persistence and degradability: The polyurea produced on contact with water is insoluble, inert, and

nonbiodegradable. In air, the predominant degredation process is predicted to be a relatively rapid OH radical attack, by calculation and by analogy with related

isocyanates.

12.3 Bioaccumulative potential: No information

12.4 Mobility in soil: No information

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

assessment:

12.6 Other adverse effects: No information

| CAS-No. | Name According to EEC | EC50 48hr | IC50 72hr | LC50 96hr |
|-----------|--|-------------------------------|----------------------|---------------------------------------|
| 9016-87-9 | Isocyanic acid, polymethylenepolyphenylene ester | >1000 mg/l (24 h) OECD 202 | >1640 mg/l OECD 201 | >1000 mg/l (Danio rerio) OECD 203 |
| 5873-54-1 | Diphenylmethane-2,4'-diisocyanate | >1000 mg/l OECD 202 | >1640 mg/l OECD 201 | >1000 mg/l (danio rerio) OECD 203 |
| 101-68-8 | 4,4'-Methylenediphenyl diisocyanate | > 1000 mg/l (24h) OECD 202 | > 1640 mg/l OECD 201 | > 1000 mg/l (danio rerio) OECD 203 |

SECTION 13: Disposal Considerations

13.1 WASTE TREATMENT METHODS: Dispose of as hazardous waste in compliance with local and national 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.

080501* **European Waste Code:**

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150110* Packaging Waste Code:

SECTION 14: Transport Information

14.1 **UN number** Not applicable

14.2 UN proper shipping name Not regulated for transport according to ADR/RID, IMDG, and IATA

regulations.

Not applicable **Technical name** 14.3 Transport hazard class(es) Not applicable Subsidiary shipping hazard Not applicable 14.4 Packing group

Not applicable Not applicable 14.5 Environmental hazards 14.6 Special precautions for user Not applicable

EmS-No.: Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code

Not applicable

SECTION 15: Regulatory Information

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

National Regulations:

Not available **Denmark Product Registration Number:**

Danish MAL Code: 00-3

Danish MAL Code - Mixture: Not available Not available **Sweden Product Registration Number: Norway Product Registration Number:** Not available

WGK Class: 1

15.2 **Chemical Safety Assessment:**

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

SECTION 16: Other Information

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

| H315 | Causes skin irritation. |
|------|--|
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |
| H351 | Suspected of causing cancer. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

Date Printed: 19/01/2017 Reasons for revision

Statement(s) Changed

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; European Union Commission Regulation No. 1907/2006 on REACH as amended within Commission Regulation (EU) 2015/830;

European Union (EC) Regulation No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) and subsequent technical progress adaptations (ATP); 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
RTI Respiratory Tract Irritation

NE Narcotic Effects

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.