



Safety Data Sheet

prepared to UN GHS Revision 3

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

- 1.1 Product Identifier 101-FRESH-A-FORMULA Revision Date: 01/27/2015
 Product Name: Flowfresh Base A Supercedes Date: 05/28/2014
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
 Base component of 2 components coatings - Industrial use.
- 1.3 Details of the supplier of the safety data sheet
- Manufacturer: Flowcrete North America, Inc.
 616 Spring Hill Drive, Suite 100
 Spring, TX 77386
 americas@flowcrete.com
 www.flowcreteamericas.com
 Tel: (936) 539-6700
 Fax: (936) 539-6701
- Datasheet Produced by: Anderson, Paul - americas@flowcrete.com
- 1.4 Emergency telephone number: CHEMTREC +1 703 5273887 (Outside US)

2. Hazard Identification

- 2.1 Classification of the substance or mixture
- 2.3 Other hazards
 Not applicable
- 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

3.1 Substances

Hazardous Ingredients

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>%</u>
107-21-1	ethane-1,2-diol	1.0-2.5
64742-95-6	solvent naphtha (petroleum), light arom.	0.1-1.0
111-46-6	2,2' -oxybisethanol	<0.1

6.4 Reference to other sections

Please refer to 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

INSTRUCTIONS FOR SAFE HANDLING: Use only in area provided with appropriate exhaust ventilation. Wear personal protective equipment

PROTECTION AND HYGIENE MEASURES: Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities

CONDITIONS TO AVOID: No Information

STORAGE CONDITIONS: Do not freeze. Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3 Specific end use(s)

No specific advice for end use available.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Ingredients with Occupational Exposure Limits (US)

<u>Name</u>	<u>%</u>	<u>OSHA PEL</u>	<u>Company TLV</u>
ethane-1,2-diol	1.0-2.5	50.00 PPM	
solvent naphtha (petroleum), light arom.	0.1-1.0	500.0 PPM	
2,2'-oxybisethanol	<0.1		
diethanolamine	<0.1		

FURTHER INFORMATION: Refer to the regulatory exposure limits for the workforce enforced in each country.

8.2 Exposure controls

Personal Protection

RESPIRATORY PROTECTION: No personal respiratory protective equipment normally required.

EYE PROTECTION: Safety glasses.

HAND PROTECTION: Protective gloves. Long sleeved clothing. Remove and wash contaminated clothing before re-use.

OTHER PROTECTIVE EQUIPMENT: No Information

ENGINEERING CONTROLS: Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	White Resin
Physical State	Liquid
Odor	Light Terpene
Odor threshold	Not determined
pH	9.4
Melting point /freezing point (°C)	0 (like water)

Boiling point/range (°C)	150 - N.D.
Flash Point (°C)	999
Evaporation rate	Like water
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	0 - 0
Vapour Pressure	Not determined
Vapour density	Not determined
Relative density	approx. 1.0
Solubility in /Miscibility with water	Emulsifiable
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	N/A
Decomposition temperature (°C)	Not determined
Viscosity	850 mPas at 80F
Explosive properties	N/A
Oxidising properties	N/A
9.2 Other information	
VOC Content g/l:	10
Specific Gravity (g/cm3)	0.120

10. Stability and Reactivity

10.1 Reactivity

No reactivity hazards known under normal storage and use conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerisation does not occur.

10.4 Conditions to avoid

No Information

10.5 Incompatible materials

No Information

10.6 Hazardous decomposition products

No Information

11. Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity:

Oral LD50:

Inhalation LC50:

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.

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:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
64742-95-6	solvent naphtha (petroleum), light arom.	4700 mg/kg, oral, rat	>2000 mg/kg	3670 ppm/8 hours, rat, inhalation

Additional Information:

No Information

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

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>EC50 48hr</u>	<u>IC50 72hr</u>	<u>LC50 96hr</u>
107-21-1	ethane-1,2-diol	No information	No information	
64742-95-6	solvent naphtha (petroleum), light arom.	>1 - 10 mg/l	>1 - 10 mg/l	>10-100 mg/l
111-46-6	2,2' -oxybisethanol	No information	No information	
111-42-2	diethanolamine	No information	No information	No information

13. Disposal Considerations

13.1 WASTE TREATMENT METHODS: If recycling is not practicable, dispose of in compliance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

- 14.1 UN number
- 14.2 UN proper shipping name: Not regulated for transport according to DOT, IMDG, and IATA regulations.
Technical name
- 14.3 Transport hazard class(es)
Subsidiary shipping hazard
- 14.4 Packing group
- 14.5 Environmental hazards
- 14.6 Special precautions for user: Not applicable
EmS-No.:
- 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:

U.S. Federal Regulations: As follows -

CERCLA - Sara Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Chronic Health Hazard

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the U.S. Superfund Amendment and Reauthorization Act (SARA) of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
ethane-1,2-diol	107-21-1
1,2,4-trimethylbenzene	95-63-6

Toxic Substances Control Act

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(b) components exist in this product

U.S. Clean Air Act

EPA Coating Category:	Floor coatings
EPA VOC Content Limit (g/l):	400
Product VOC Content (g/l)	10
Thinning Recommendations:	None
Application Recommendations:	For professional use only.

* As per the federal EPA definition for coating categories in 40 CFR 59.401.

** Grams of VOC per liter of coating product as applied (mixture of Part A and Part B) per ASTM D2369 Method E.

U.S. State Regulations: As follows -**New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

<u>Chemical Name</u>	<u>CAS-No.</u>
castor oil	8001-79-4
water	7732-18-5
No Chemical Name Found	
9-octadecenoic acid, 12-(oxiranylmethoxy)-, 1,2,3-propanetriyl ester, homopolymer	74398-71-3
No Chemical Name Found	94266-48-5

Pennsylvania Right-To-Know

The following non-hazardous ingredients are present in the product at greater than 3%.

<u>Chemical Name</u>	<u>CAS-No.</u>
castor oil	8001-79-4
water	7732-18-5
No Chemical Name Found	

California Proposition 65:

Warning: The following ingredients present in the product are known to the State of California to cause cancer:

No Proposition 65 Carcinogens exist in this product

Warning: The following ingredients present in the product are known to the State of California to cause birth defects, or other reproductive hazards.

No Proposition 65 Reproductive Toxins exist in this product

International Regulations: As follows -*** Canadian DSL:**

All chemical ingredients included on inventory or exempt.

15.2 Chemical Safety Assessment

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

16. Other Information

Text for GHS Hazard Statements shown in Section 3 describing each ingredient

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H411	Toxic to aquatic life with long lasting effects.

Reasons for revision

This is a new Safety Data Sheet (SDS).

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.

No Information



Safety Data Sheet
prepared to UN GHS Revision 3

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

- 1.1 Product Identifier** 101-FRESH-B-SINGLE **Revision Date:** 05/28/2014
Product Name: Flowfresh Hardener B - Flowfresh CM Hardener B **Supersedes Date:** 01/30/2014
- 1.2 Relevant identified uses of the substance or mixture and uses advised against** Component of multicomponent industrial coatings - Industrial use
- 1.3 Details of the supplier of the safety data sheet**
- Manufacturer:** Flowcrete North America, Inc.
616 Spring Hill Drive, Suite 100
Spring, TX 77386
americas@flowcrete.com
www.flowcreteamericas.com
Tel: (936) 539-6700
Fax: (936) 539-6701
- Datasheet Produced by:** Adamson, Grant - americas@flowcrete.com
- 1.4 Emergency telephone number:** CHEMTREC +1 703 5273887 (Outside US)

2. Hazard Identification

2.1 Classification of the substance or mixture

Carcinogenicity, category 2
Eye Irritation, category 2
Respiratory Sensitizer, category 1
STOT, repeated exposure, category 2
STOT, single exposure, category 3, RTI
Skin Irritation, category 2
Skin Sensitizer, category 1

2.2 Label elements**Symbol(s) of Product****Signal Word**

Danger

Named Chemicals on Label

4,4'-methylenediphenyl diisocyanate

HAZARD STATEMENTS

Carcinogenicity, category 2	H351	Suspected of causing cancer.
Eye Irritation, category 2	H319	Causes serious eye irritation.
Respiratory Sensitizer, category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
STOT, repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.
STOT, single exposure, category 3, RTI	H335	May cause respiratory irritation.
Skin Irritation, category 2	H315	Causes skin irritation.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.

PRECAUTION PHRASES

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P281	Use personal protective equipment as required.
P285	In case of inadequate ventilation wear respiratory protection.
P304	IF INHALED:
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.
P332+313	If skin irritation 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

Not applicable

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**3.1 Substances****Hazardous Ingredients**

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>%</u>
101-68-8	4,4'-methylenediphenyl diisocyanate	25-50

<u>CAS-No.</u>	<u>GHS Symbols</u>	<u>GHS Hazard Statements</u>	<u>M-Factors</u>
101-68-8	GHS07-GHS08	H315-317-319-332-334-335-351-373	0

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

4. First-aid Measures

4.1 Description of First Aid Measures

AFTER INHALATION: Move to fresh air. Consult a physician after significant exposure.

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.

AFTER EYE CONTACT: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses.

AFTER INGESTION: Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes and respiratory system. Heating or fire can release toxic gas.

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

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

In the event of fire, wear self-contained breathing apparatus. ABC powder. Danger! - water reactive substance. Reacts with water to release toxic gas. May be harmful or fatal if inhaled.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment.

6.2 Environmental precautions

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).

6.4 Reference to other sections

Please refer to 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

INSTRUCTIONS FOR SAFE HANDLING: Use only in area provided with appropriate exhaust ventilation. 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.

PROTECTION AND HYGIENE MEASURES: Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities

CONDITIONS TO AVOID: Keep from any possible contact with water.

STORAGE CONDITIONS: Store in original container. Keep container tightly closed in a dry and well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

7.3 Specific end use(s)

No specific advice for end use available.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Ingredients with Occupational Exposure Limits (US)

<u>Name</u>	<u>%</u>	<u>OSHAPEL</u>	<u>Company TLV</u>
4,4'-methylenediphenyl diisocyanate	25-50	0.02 PPM- CEILIN	

FURTHER INFORMATION: Refer to the regulatory exposure limits for the workforce enforced in each country.

8.2 Exposure controls

Personal Protection

RESPIRATORY PROTECTION: When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Respirator with a vapor filter.

EYE PROTECTION: Ensure that eyewash stations and safety showers are close to the workstation location. Tightly fitting safety goggles.

HAND PROTECTION: Nitrile rubber. Long sleeved clothing. Remove and wash contaminated clothing before re-use.

OTHER PROTECTIVE EQUIPMENT: No Information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	Brown Liquid
Physical State	Liquid
Odor	Earthy, Musty
Odor threshold	Not determined
pH	Not determined
Melting point / freezing point (°C)	Not determined
Boiling point/range (°C)	550 F - N.D.
Flash Point, (°C)	177
Evaporation rate	Not determined
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	999 - 0

Vapour Pressure, mmHg	<0.0001 mbar @ 70oF
Vapour density	8.5
Relative density	1.24 @ 70 F
Solubility in / Miscibility with water	Insoluble, Reacts To Produce Carbon Dioxide And Polyurea Solid
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	>1110 F
Decomposition temperature (°C)	> 550 F
Viscosity	45-95 mPas at 80oF
Explosive properties	Not determined
Oxidising properties	Not determined

9.2 Other information

VOC Content g/l:	10
Specific Gravity (g/cm3)	0.120

10. Stability and Reactivity

10.1 Reactivity

No reactivity hazards known under normal storage and use conditions.

10.2 Chemical stability

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 does not occur.

10.4 Conditions to avoid

Keep from any possible contact with water.

10.5 Incompatible materials

Reacts violently in contact with acids, amines, driers, polymerisation accelerators and easily oxidized materials. Contact with water or moist air liberates irritating gas.

10.6 Hazardous decomposition products

Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke.

11. Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity:

Oral LD50: >5000 mg/kg, oral (rat)
Inhalation LC50: 490 mg/m³ (aerosol), 4 hrs.

Irritation:

Over exposure, especially when spraying without the necessary precautions, entails the risk of concentration dependent irritating effects on eyes, nose, throat, and respiratory tract. Prolonged contact with the skin may cause tanning and irritant effects.

Corrosivity:

No information available.

Sensitization:

Repeated and/or prolonged exposure especially at levels above the OEL, may cause an allergic reaction/respiratory or skin sensitization.

Repeated dose toxicity:

No information available.

Carcinogenicity:

The classification for diphenylmethane diisocyanate has changed to carcinogenic, category 3 when it is in the form of respirable aerosol, e.g. when sprayed.

Mutagenicity:

No information available.

Toxicity for reproduction:

No birth defects seen in 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.

**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:**

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
101-68-8	4,4'-methylenediphenyl diisocyanate	15000 mg/kg oral		43 ppm vapor 4 hrs

Additional Information:

Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.

12. Ecological Information

12.1 Toxicity:

EC50 48hr (Daphnia): >1000 mg/l
IC50 72hr (Algae): No information
LC50 96hr (fish): No information

12.2 Persistence and degradability:

The polyurea produced on contact with water is insoluble, inert, and non-biodegradable. In air, the predominant degradation process is predicted to be a relatively rapid OH radical attack, by calculation and by analogy with related isocyanates.

- 12.3 Bioaccumulative potential:** Not expected to be bioaccumulative.
- 12.4 Mobility in soil:** Reacts with water to produce carbon dioxide and polyurea solid.
- 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:** It is unlikely that significant environmental exposure in the air or water will arise from normal application of this product.

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>EC50 48hr</u>	<u>IC50 72hr</u>	<u>LC50 96hr</u>
101-68-8	4,4'-methylenediphenyl diisocyanate	>1000 mg/l	No information	>1000 mg/l

13. Disposal Considerations

- 13.1 WASTE TREATMENT METHODS:** If recycling is not practicable, dispose of in compliance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

- 14.1 UN number**
- 14.2 UN proper shipping name** Not regulated for transport according to ADR/RID, IMDG and IATA regulations
- Technical name**
- 14.3 Transport hazard class(es)** N/A
- Subsidiary shipping hazard** N/A
- 14.4 Packing group**
- 14.5 Environmental hazards**
- 14.6 Special precautions for user** Not applicable
- EmS-No.:**
- 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:**

U.S. Federal Regulations: As follows -

CERCLA - Sara Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Reactive Hazard, Chronic Health Hazard

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS-No.</u>
isocyanic acid, polymethylenepolyphenylene ester	9016-87-9
4,4'-methylenediphenyl diisocyanate	101-68-8

Toxic Substances Control Act:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA components exist in this product.

U.S. Clean Air Act:

EPA Coating Category:	Floor Coatings
EPA VOC Content Limit (g/l):	400
Product VOC Content (g/l)	<10
Thinning Recommendations:	None
Application Recommendations:	For professional use only.

* As per the federal EPA definition for coating categories in 40 CFR 59.401.

** Grams of VOC per liter of coating product as applied (mixture of Part A and Part B) per ASTM D2369 Method E.

U.S. State Regulations: As follows -**New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

No NJ Right-To-Know components exist in this product.

Pennsylvania Right-To-Know

The following non-hazardous ingredients are present in the product at greater than 3%.

No PA Right-To-Know components exist in this product.

California Proposition 65:

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

No Proposition 65 Carcinogens exist in this product.

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

No Proposition 65 Reproductive Toxins exist in this product.

International Regulations: As follows -*** Canadian DSL:**

All chemical ingredients included on inventory

15.2 Chemical Safety Assessment:

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

16. Other Information

Text for GHS 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.

Reasons for revision

This is a new Safety Data Sheet (SDS).

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/m ³	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

IBC modified by the Protocol of 1978
 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.

Date Issued: September 24, 2009

1. Identification of the substance/preparation and company

Product Name: Flowfresh FC Filler C

Application: Filler C component of a 4 pack polyurethane resin floor system.
Mixed product is applied using a roller.
Used with Flowfresh Multipack Base A and Hardener B plus Pigment Pack to produce Flowfresh FC.

Supplier:
Flowcrete North America, 11133 Interstate 45 South, Suite K, Conroe, Texas 77302
Non-Emergency Product Information: 936-539-6700
Emergency Only CHEMTREC: 800-424-9300

2. Hazards Identification

Risk of serious damage to eyes. The lime and alkalis within the cement are partially soluble and when mixed with water will give rise to a potentially hazardous alkaline solution. The eyes are particularly vulnerable and damage will increase with contact time. Contact with wet cement may cause irritation, dermatitis or burns.
Contact between cement powder and body fluids (e.g. sweat and eye fluid) may also cause skin and respiratory irritation, dermatitis or burns.

3. Composition/information on constituents

Chemical Name	EINECS No.	CAS No.	% by weight	Symbols and Risk Phrases
Cements	270-659-9	68475-76-3	> 90	Xi; R41.

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

4. First Aid measures

- General Information** : In case of accident or you feel unwell, seek medical advice and take the relevant safety data sheets.
Never give anything by mouth to an unconscious person.
- Inhalation** : If irritation occurs, move to fresh air. If nose or airways become inflamed seek medical advice.
- Skin contact** : Wash with soap and plenty of water before continuing. If irritation, pain or other skin trouble occurs, seek medical advice.
Contaminated clothing should be removed and washed thoroughly before re-use.
- Eye Contact** : Hold eyelids apart and immediately flush with plenty of water for at least 15 minutes.
Seek medical advice immediately.
- Ingestion** : Wash out mouth with water and give patient plenty of water to drink..

5. Fire-fighting measures

This material is non-combustible and will not facilitate combustion with other materials.

6. Accidental release measures

- Personal precautions** : Use personal protective equipment as detailed in Section 8.
Ensure adequate ventilation.
- Environmental precautions** : Avoid the formation of dust clouds.
- Methods for cleaning up** : Sweep or preferably vacuum up and collect in suitable containers for disposal in accordance with Section 13. Avoid creating a dust cloud, dampen with water if possible.
Addition of water may result in the product hardening in situ if not removed quickly.

7. Handling and storage

- Handling** : Provide sufficient air exchange and/or exhaust in work rooms. Avoid formation of dust cloud. Ensure adequate ventilation. Use personal protective equipment as detailed in Section 8. Handle and open container with care.
- Storage** : Store in a dry, cool, well-ventilated place.

8. Exposure controls/personal protection

- Workplace Exposure Limit for dust,** Total inhalable dust : 10mg/m³ 8hr TWA
Respirable dust : 4 mg/m³ 8hr TWA

Engineering measures to reduce exposure : Local exhaust ventilation is recommended where dust is likely to be generated from the handling of dry material.

Personal protective equipment :

- Respiratory protection** : Dust respirator if the conditions are dusty.
Eye protection : Goggles or face shield.
Hand protection : Impervious gloves
Skin and body protection : Protective suit.
Protective measures : Use of the basic principles of Industrial Hygiene will enable this material to be used safely.

9. Physical and chemical properties

- | | | | |
|-------------------------|------------------|--------------------------|---------------------|
| Appearance | : White powder | pH | : ~11 – 14 when wet |
| Odour | : None | Relative Density | : ~3 |
| Boiling Point | : Not applicable | Water solubility | : slight |
| Flashpoint | : Not applicable | Water miscibility | : Not applicable |
| Explosion limits | : No data | | : |
| Vapour pressure | : Not applicable | | : |

10. Stability and reactivity

Material is inert and stable. Shelf life is 6 months.

- Conditions to avoid** : Not applicable
- Materials to avoid** : Not applicable
- Hazardous decomposition products** : None.

11. Toxicological information

- Inhalation** : May cause inflammation of the mucous membranes, an irritant to the respiratory tract at high concentrations.
- Ingestion** : The swallowing of small amounts is unlikely to cause any significant reaction. Larger doses may result in irritation of the gastro intestinal tract.
- Eye irritation** : Cements are painful eye irritants. Mild exposure can cause soreness. Gross exposure or untreated mild exposures can lead to chemical burning and ulceration of the eye.
- Skin Irritation** : Cement powder, especially in a water mix, may cause irritant contact dermatitis and or burns.
- Sensitisation** : The hexavalent chromium in the cement can lead to sensitisation of the skin. If sensitised, an allergic eczema will result upon contact with the skin.
- Long term toxicity** : High repeated exposures in excess of the WEL have been linked with rhinitis and coughing. Skin exposure has been linked to allergic (chromium VI) dermatitis. Allergic dermatitis more commonly arises through contact with water mixtures than when dry.

12. Ecological information

- Ecotoxicity** : The addition of cement to water will raise the pH and may therefore be toxic to aquatic life in some circumstances.
- Mobility** : The product is not volatile and insoluble in water, will accumulate in the ground.
- Persistence and degradability** : Mostly non biodegradable.
- Bioaccumulative potential** : Not applicable.
- Additional ecological information** : High concentrations of cement in water (>100 mg/l) may have a sterilising effect in sewage works.

13. Disposal considerations

- Unused Product/waste from cleaning etc.** : Dispose of in accordance with local and national regulations.
EWC Code: 160304 (Not a hazardous waste)
- Contaminated packaging** : Contaminated packaging must not be disposed of as household waste.
Not a hazardous packaging waste.
Use EWC Code: 150101 for paper, 150102 for plastic.

14. Transport information

Not classified as hazardous for transport.

15. Regulatory information

- Classification according to EEC directive:** Irritant
- R-phrases**
- R41 : Risk of serious damage to eyes.
- S-phrases**
- S22 : Do not breathe 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 water and soap.
- S36/37/39 : Wear suitable protective clothing, gloves and eye/face protection.
- Special provisions statement** : None.
- Hazardous component(s) which must be listed on the label** : Cement.
- US EPA TSCA Status:** All chemical ingredients are listed on the TSCA inventory.
- Canada Domestic Substance List Status:** All chemical ingredients are listed on the DSL
- 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.
Control of Substances Hazardous to Health Regs.
Environmental Protection (Duty of Care) Regs.
- 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)
Construction Information Sheet No 26 (revision 2) CIS26(rev2) - Cement

16. Other Information

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.
Maximum exposure limits and Workplace Exposure Limits have been taken from EH40 Workplace Exposure Limits (in UK, from HSE Books).

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.

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:

Xi : Irritant
R41 : Risk of serious damage to eyes.

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

Beware of cross contamination where different products are in use in the same location.
Take into account the Manual Handling regulations when dealing with the mixed product.

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.