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

Supercedes Date: 05/28/2014

Product Name: Flowfresh Base A

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

CAS-No.	Chemical Name	%
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

111-42-2	diethanolamine	<0.1

CAS-No.	GHS Symbols	GHS Hazard Statements	M-Factors
107-21-1	GHS07	H302	0
64742-95-6	GHS02, GHS08, GHS09	H226-304-411	0
111-46-6	GHS07	H302	0
111-42-2			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

GENERAL NOTES: No Information
AFTER INHALATION: Move to fresh air.
AFTER SKIN CONTACT: Use a mild soap if available. Wash off immediately with soap and plenty of water.
AFTER EYE CONTACT: Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses.
AFTER INGESTION: Gently wipe or rinse the inside of the mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

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

Do not ingest. May be harmful by inhalation, in contact with skin and if swallowed.

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
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. None.

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.

6.3 Methods and material for containment and cleaning up

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. 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)

Name	%	OSHAPEL	Company TLV
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:

CAS-No.	Chemical Name	Oral LD50	Dermal LD50	Vapor LC50
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

CAS-No.	Chemical Name	EC50 48hr	IC50 72hr	LC50 96hr
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:

Chemical Name	CAS-No.
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.

Chemical Name	CAS-No.
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%.

Chemical Name	CAS-No.
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

Flowcrete
for the world at your feet

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

Supercedes 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

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

CAS-No.	GHS Symbols	GHS Hazard Statements	M-Factors
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)

Name	%	OSHAPEL	Company TLV
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 (NOx), 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:

CAS-No.	Chemical Name	Oral LD50	Dermal LD50	Vapor LC50
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 degredation 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.

CAS-No.	Chemical Name	EC50 48hr	IC50 72hr	LC50 96hr
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:

Chemical Name	CAS-No.
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).

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Acronym & Abbreviation Key:

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US	United States
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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
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UN	United Nations
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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.

Safety Data Sheet
prepared to UN GHS Revision 3

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

1.1 Product Identifier 100-RT-C

Product Name: Flowfresh RT Filler C

Revision Date: 07/25/2014

Supercedes Date: New SDS

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: 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

Carcinogenicity, category 1A
Serious Eye Damage, category 1
STOT, repeated exposure, category 1
STOT, single exposure, category 1
Skin Irritation, category 2

2.2 Label elements

Symbol(s) of Product

Signal Word

Danger

Named Chemicals on Label

calcium hydroxide, quartz (silicon dioxide)

HAZARD STATEMENTS

Carcinogenicity, category 1A	H350-1A	May cause cancer.
Serious Eye Damage, category 1	H318	Causes serious eye damage.
STOT, repeated exposure, category 1	H372	Causes damage to organs through prolonged or repeated exposure.
STOT, single exposure, category 1	H370	Causes damage to organs.
Skin Irritation, category 2	H315	Causes skin irritation.

PRECAUTION PHRASES

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P281	Use personal protective equipment as required.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
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.
P307+P311	IF exposed, call a POISON CENTER or doctor/physician.
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.

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

CAS-No.	Chemical Name	%
14808-60-7	quartz (silicon dioxide)	25-50
1305-62-0	calcium hydroxide	10-25

CAS-No.	GHS Symbols	GHS Hazard Statements	M-Factors
14808-60-7	GHS08	H350-370-372	0
1305-62-0	GHS05	H315-318	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 with soap and plenty of water.
AFTER EYE CONTACT: Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses. If eye irritation persists, consult a specialist.
AFTER INGESTION: Gently wipe or rinse the inside of the mouth with water. Give small amounts of water to drink. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Harmful by inhalation.

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

None known. The product itself does not burn. In the event of fire, wear self-contained breathing apparatus. Water sprayDry powderAlcohol-resistant foamCarbon dioxide (CO2)High volume water jet. None.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Avoid dust formation. Use personal protective equipment.

6.2 Environmental precautions

No Information

6.3 Methods and material for containment and cleaning up

Pick up and transfer to properly labelled containers. No special environmental precautions required. After cleaning, flush away traces with water.

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. Avoid dust formation. Protect from moisture.

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

7.2 Conditions for safe storage, including any incompatibilities

CONDITIONS TO AVOID: No Information

STORAGE CONDITIONS: Keep tightly closed in a dry and cool 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)

Name	%	OSHAPEL	Company TLV
quartz (silicon dioxide)	25-50	0.1 MG/M3	
calcium hydroxide	10-25	5. MG/M3	

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

8.2 Exposure controls

Personal Protection

RESPIRATORY PROTECTION: Effective dust mask.

EYE PROTECTION: Safety glasses with side-shields

HAND PROTECTION: Protective glovesLong 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:	Granules / Powder Mix
Physical State	Solid
Odor	None
Odor threshold	Not determined
pH	11- 14
Melting point / freezing point (°C)	Not determined
Boiling point/range (°C)	N.D. - N.D.
Flash Point, (°C)	999
Evaporation rate	N/A
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	999 - 0
Vapour Pressure, mmHg	N/A
Vapour density	N/A

Relative density	Not determined
Solubility in / Miscibility with water	Slight
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	Not determined
Decomposition temperature (°C)	Not determined
Viscosity	N/A
Explosive properties	N/A
Oxidising properties	N/A

9.2 Other information

VOC Content g/l:	0
Specific Gravity (g/cm3)	1.850

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

Do not store near acids. Strong oxidizing agents.

10.6 Hazardous decomposition products

No hazardous decomposition products are known. Hydrogen fluoride

11. Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity:

Oral LD50:

Inhalation LC50:

Irritation: Cement and hydrated lime powder, especially in a water mix, may cause irritant contact dermatitis and/or burns.

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:

CAS-No.	Chemical Name	Oral LD50	Dermal LD50	Vapor LC50
1305-62-0	calcium hydroxide	7340 mg/kr, oral, rat		

Additional Information:

This product may contain Quartz (silicon dioxide), which is listed by IARC as a known carcinogenic to humans (Group 1). This classification is relevant when exposed to Quartz (silicon dioxide) in dust or powder form only, including cured product that is subject to sanding, grinding, cutting, or other surface preparation activities.

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: Mostly non-biodegradable. The hydrated lime will react with atmospheric and dissolved carbon dioxide to form calcium carbonate (e.g. chalk).

12.3 Bioaccumulative potential: Not applicable.

12.4 Mobility in soil: The product is not volatile and insoluble in water, will accumulate in the ground.

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: The addition of cement and hydrated lime to water will raise pH and may therefore be toxic to aquatic life in some circumstances.

CAS-No.	Chemical Name	EC50 48hr	IC50 72hr	LC50 96hr
14808-60-7	quartz (silicon dioxide)	No information	No information	
1305-62-0	calcium hydroxide	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, ADR/RID, IMDG and IATA regulations

Technical name

14.3 Transport hazard class(es) N/A

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 Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

No Sara 313 components exist in this product.

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:	Not applicable
EPA VOC Content Limit (g/l):	N/A
Product VOC Content (g/l)	N/A
Thinning Recommendations:	N/A
Application Recommendations:	N/A

* 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.

Chemical Name	CAS-No.
No Chemical Name Found	
No Chemical Name Found	68475-76-3

Pennsylvania Right-To-Know

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

Chemical Name	CAS-No.
No Chemical Name Found	
No Chemical Name Found	68475-76-3

California Proposition 65:

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

Chemical Name	CAS-No.
quartz (silicon dioxide)	14808-60-7

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.
H318	Causes serious eye damage.
H350	May cause cancer.
H370	Causes damage to organs.
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