



**FLOWFRESH BASE A
FLOWFRESH CM BASE A
MATERIAL SAFETY DATA SHEET
Revision 2 – Date Revised: 04/30/2012**

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product Name Flowfresh Base A – Flowfresh CM Base A

Application Polyol based component of a 4 pack polyurethane resin floor system. Mixed product is applied using a trowel.

Supplier Flowcrete North America, Inc.
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Emergency Phone Numbers CHEMTREC (US, Canada, US Virgin Islands): (800) 424 - 9300
(24 HR.) CHEMTREC (Outside USA): (703) 527 – 3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

Polyalcohol emulsion in water.

3. HAZARDS IDENTIFICATION

Not classified as hazardous.

4. FIRST- AID MEASURES

Inhalation Remove from exposure – unlikely to occur because of the low volatility of the product. If someone is affected, seek medical advice.

Skin contact Wash with soap and plenty of water or a suitable skin cleanser as soon as possible. Remove any contaminated clothing and launder before re-use. Seek medical advice in cases of a skin reaction.

Eye Contact Hold eyelids apart and immediately flush with plenty of water for at least 15 minutes. If irritation persists, seek medical advice.

Ingestion Wash out mouth with water. If any has been swallowed, seek medical advice.

5. FIRE-FIGHTING MEASURES

This is an aqueous emulsion and will not burn in the wet state. However in a fire the water could evaporate and the solids will burn.

Suitable extinguishing media Water spray, carbon dioxide (CO₂), foam, dry powder.
Un-Suitable extinguishing media High volume water jet.
Special exposure hazards Burning produces carbon oxides, oxides of nitrogen and a trace of hydrogen cyanide.
Special protective equipment Wear self-contained breathing apparatus and protective suit.
Additional information None.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Be aware the product may cause a slip hazard. Use personal protective equipment as detailed in Section 8. Ensure adequate ventilation.

Environmental precautions Prevent entry into drains, sewers and water courses.

Methods for cleaning up Soak up with inert absorbent material or contain and remove by best available means. Collect in suitable containers for disposal in accordance with Section 13

7. HANDLING AND STORAGE

Handling Ensure adequate ventilation. Use personal protective equipment as detailed in Section 8. Handle and open container with care. Avoid skin and eye contact. Wash hands thoroughly after handling or contact.

Storage Store in a dry, cool, well-ventilated place. Maintain storage temperature at 60 – 80 °F. Protect from frost and avoid temperatures above 104 °F. Do not store close to acids.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

No components have an Occupational Exposure Standard.

Engineering measures to reduce exposure No specific ventilation requirement noted.

Personal protective equipment

Respiratory protection

Not required under normal conditions in a well ventilated workplace.
If a respirator is required use a chemical cartridge respirator with face piece to protect against the organic vapor, NIOSH approved supplied air respirator with full face shield or self-contained breathing apparatus in pressure demand mode.

Eye protection

Goggles or face shield.

Hand protection

Impervious gloves e.g. nitrile rubber.
Check regularly for degradation and replace as necessary.

Skin and body protection

Protective suit and heavy duty work shoes.

Protective measures

Handle in accordance with good industrial hygiene and safety practice.
Wash hands before breaks and immediately after handling the product.
When using do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White liquid	pH	9.4
Odor	Light terpene	Relative Density	~1.0
Boiling Point	~100 °C/212 °F	Water solubility	emulsifiable
Flashpoint	Not applicable	Viscosity	850 mPas at 80 °F
Explosion limits	Not applicable		

10. STABILITY AND REACTIVITY

Material is stable if stored as indicated in section 7.

Conditions to avoid	Excessive heat or frost.
Materials to avoid	Acids.
Hazardous decomposition products	None known. Carbon oxides in a fire.

11. TOXICOLOGICAL INFORMATION

There are no toxic effects known. A skin rash has been observed in some individuals.

12. ECOLOGICAL INFORMATION

Avoid subsoil penetration.
Prevent product from entering drains, do not contaminate surface water.

13. DISPOSAL CONSIDERATIONS

Unused Product/waste from cleaning etc.	Must be disposed of in compliance with local and national regulations. EC Waste Catalogue (EWC) code: 08 01 20 Waste products from the Manufacture, Formulation, Supply and Use (MFSU) of paint and varnish. (Aqueous suspensions containing paint or varnish other than those mentioned in 08 01 19.)
Contaminated packaging	Partially filled containers shall be treated as for the product above. Well drained containers shall be disposed of as non-hazardous packaging waste. Use EWC code 150102 for plastic, 150104 for metal.

14. TRANSPORT INFORMATION

Not classified as hazardous for transport.

15. REGULATORY INFORMATION

S-phrases	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	None
US EPA TSCA Status	All chemical ingredients are listed on the TSCA inventory.

Canada Domestic	All chemical ingredients are listed on the DSL
Substance List Status	
EC Directives	Dangerous Substances Directive, 67/548/EEC & adaptations Dangerous Preparations Directive, 1999/45/EC Safety Data Sheets Directive, 91/155/EEC
Statutory Instruments	Chemicals (Hazard Information & Packaging for Supply) Regs 2002. Control of Substances Hazardous to Health Regs 2002 Environmental Protection (Duty of Care) Regs. 1991.
Codes of Practice	Waste Management. The Duty of Care. Approved classification and labeling guide (Fifth edition). L131. The compilation of safety data sheets (Third edition).
Guidance Notes	Occupational Exposure Limits EH40 CHIP for Everyone HSG(108)

16. OTHER INFORMATION

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.

HMIS Ratings

Health	1
Flammability	1
Reactivity	0

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.

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

Do not use organic solvents for skin cleansing, it will lead to defatting of the skin, skin irritation and/or dermatitis.
Some solvents can be absorbed through the skin.
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.



**FLOWFRESH HARDENER B
FLOWFRESH CM HARDENER B
MATERIAL SAFETY DATA SHEET
Revision 2 – Date Revised: 04/30/2012**

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product Name Flowfresh Hardener B – Flowfresh CM Hardener B

Application Isocyanate component of a 4 pack polyurethane resin floor system.
Mixed product is applied by trowel.
Polyisocyanate based on diphenylmethane diisocyanate.
This component does not contain any antimicrobial agent. It is in the Filler C.

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	EINECS No.	CAS No.	% by weight	Symbols and Risk Phrases
diphenylmethane-diisocyanate isomers and homologues	-	9016-87-9	> 95	Xn; R20; R36/37/38;R42/43

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

3. HAZARDS IDENTIFICATION

Harmful by inhalation. This hazard is most likely to arise when materials are heated, sprayed, used in a confined unventilated space or if correct handling procedures are not followed.

Irritating to eyes, respiratory system and skin. In mild cases the affected person may experience slight irritation of the eyes, nose and throat, possibly combined with dryness of the throat. In more severe cases the person may suffer acute bronchial irritation and difficulty in breathing.

May cause sensitization by inhalation and skin contact. Repeated and /or prolonged exposure may cause an allergic reaction/sensitization. Once sensitized, an individual may produce an allergic reaction every time they are in contact with isocyanates. Individuals who have developed sensitivity may experience wheezing, tightness of the chest and shortness of breath. A hyper-reactive response to even minimal concentrations of isocyanate may develop in sensitized persons.

When the base is mixed with the hardener an exothermic reaction starts (i.e. heat is generated).
If the mix is not applied within 20 - 30 minutes some smoking may occur.

4. FIRST- AID MEASURES

Inhalation Remove affected person from exposure, keep them warm and at rest. Obtain immediate medical attention. Delayed appearance of the complaints (difficulty in breathing, coughing, asthma) are possible following severe exposure.

Skin contact Wash with soap and plenty of water or a suitable skin cleanser as soon as possible.
If irritation persists, seek medical advice.

Eye Contact Hold eyelids apart and carefully and thoroughly flush with plenty of water for at least 15 minutes.
Seek medical advice.

Ingestion If the person is conscious, wash out mouth with water. Do not swallow mouth wash.
Do not induce vomiting unless under medical supervision. Seek immediate medical attention.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Carbon dioxide (CO₂), foam, dry powder.
Water spray should be used for larger fires.

Un-Suitable extinguishing media High volume water jet.

Special exposure hazards Burning produces carbon oxides, hydrogen cyanide, nitrogen oxides and isocyanate vapor.

Special protective equipment Wear self-contained breathing apparatus and protective suit.

Additional information Reaction between water and hot isocyanate may be vigorous.
Do not allow contaminated extinguishing water to enter the soil, drains, sewers or water courses.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Use personal protective equipment as detailed in Section 8.
Ensure adequate ventilation.

Environmental precautions If a major spillage (an area greater than 2 square meters), clear the area of non-essential personnel.
Prevent further leakage or spillage and prevent entry into drains, sewers and water courses. The reaction with water produces carbon dioxide and insoluble material which could cause the drains to block. If any enters drains, flush away with copious amounts of water.
It is an offence to discharge effluent down the drain without prior consent from the appropriate authority. Check where the drain chosen for disposal goes. If it goes to a watercourse, check that disposal of the spillage will comply with the Environmental Agency or SEPA consent. If it goes to the sewer, check the consent issued by the sewerage authority.
If washing the spillage to drain will breach a consent condition, dispose of in another way. Make sure the disposal site is licensed to accept this type of waste.

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, sawdust) wetted out with water to expedite the process.
Leave the material to react for 30 minutes.
Shovel into suitable open-top containers, do not close container for at least 24 hours (because of evolution of carbon dioxide) and keep damp in a safe, well ventilated area.
Dispose in accordance with Section 13.
Wash the area with plenty of water.

7. HANDLING AND STORAGE

Handling Ensure adequate ventilation or provide exhaust ventilation in work area.
If sprayed, exhaust ventilation is required and all other personnel to be excluded from area.
In all areas where isocyanate aerosols and/or vapor concentrations are produced, exhaust ventilation must be provided in such a way that the MEL (see section 8) is not exceeded. The air should be drawn away from the personnel handling the product.
Use personal protective equipment as detailed in Section 8.

Storage Handle and open container with care. Avoid skin and eye contact.
Store in a dry, cool, well-ventilated place. Keep container tightly closed.
Do not allow to freeze as some crystallization will occur.
Maintain store between temperatures 40 - 95 °F.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Workplace Exposure Limit (WEL) Isocyanates, all (expressed as –NCO)
0.02 mg/m³ 8 hour Time Weighted Average (TWA)
0.07 mg/m³ 15 minute Short Term Exposure Limit (STEL)

Engineering measures to reduce exposure Ensure adequate ventilation, especially in confined areas.
If sprayed, exhaust ventilation is required.

Personal protective equipment
Respiratory protection Required in insufficiently ventilated working areas (especially during mixing and always if sprayed). An air-fed mask, or for short periods of work, a combination of charcoal filter and particulate filter respirator.
In the case of hypersensitivity of the respiratory tract (e.g. asthmatics and those who suffer from chronic bronchitis) it is inadvisable to work with the product.

Eye protection Goggles or full face mask.

Hand protection Impermeable gloves (nitrile butadiene rubber [NBR], Butyl rubber [IIR], Fluorinated rubber [FKM], polyvinyl chloride [PVC], polychloroprene [CR]).
Isocyanates can harden gloves and increase the risk of their splitting.
Check regularly for degradation and replace as necessary.

Skin and body protection
Protective measures Protective suit and heavy duty work shoes.
Handle in accordance with good industrial hygiene and safety practice.
Wash hands before breaks and immediately after handling the product.
When using do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Brown liquid.	Viscosity	45 - 95 mPa's at 80 °F
Odor	Earthy, musty	Relative Density	1.24 at 70 °F
Boiling Point	> 550 °F, decomposes/polymerises	Water solubility	Insoluble, reacts to produce carbon dioxide and polyurea solid.
Flashpoint	> 350 °F	Ignition temperature	>1110 °F
Vapor pressure	<0.0001 mbar at 70 °F (100Pa = 1 mbar)	Vapor Density	8.5

10. STABILITY AND REACTIVITY

Material is stable when stored and handled correctly.
When the base is mixed with the hardener an exothermic reaction starts (i.e. heat is generated).
If the mix is not applied within 20 – 30 minutes some smoking may occur.

Conditions to avoid	Avoid high temperatures. Do not allow to freeze.
Materials to avoid	Exothermic reaction with amines, alcohols, bases and acids. Reacts with water forming carbon dioxide and polyurea solid.
Hazardous decomposition products	No hazardous decomposition products when stored and handled correctly. Thermal decomposition – polymerises at >300 °C with evolution of carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	LD ₅₀ Oral (rat) : >5,000 mg/kg
Inhalation	LC ₅₀ inhalation (rat) ca. 490 mg as aerosol/m ³ , 4 hrs exposure. Concentration of saturated vapor: 0.09 mg/m ³ at 80 °F
Irritation	Over exposure, especially when spraying without the necessary precautions, entails the risk of concentration dependant irritating effects on eyes, nose, throat and respiratory tract. In mild cases the affected person may experience slight irritation of the eyes, nose and throat, possibly combined with dryness of the throat. In more severe cases the person may suffer acute bronchial irritation and difficulty in breathing.
Skin	Prolonged contact with the skin may cause tanning and irritant effects. LD ₅₀ Dermal (rabbit) > 5,000 mg/kg
Sensitization	Repeated and /or prolonged exposure, especially at levels above the MEL, may cause an allergic reaction/respiratory sensitization. Once sensitized, an individual may produce an allergic reaction every time they are in contact with isocyanates. Individuals who have developed sensitivity may experience wheezing, tightness of the chest and shortness of breath. A hyper-reactive response to even minimal concentrations of isocyanate may develop in sensitized persons. The onset of respiratory symptoms (difficulty in breathing, coughing, asthma) may be delayed for several hours after exposure. Repeated and/or prolonged skin contact may cause skin sensitization. Animal studies have shown respiratory sensitization can be induced by skin contact with known respiratory sensitizers, including isocyanates. Animal studies have shown that respiratory sensitization can be induced by skin contact with known respiratory sensitizers including diisocyanates.
Long term toxicity	Animal testing has shown no long term adverse effects at or below the MEL. Chronic pulmonary irritation observed at high concentrations. There are reports that chronic exposure by inhalation may result in decreases in lung function.
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	There is no substantial evidence of mutagenic potential.
Reproductive toxicity	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.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Observed ecotoxicity to fish, bacteria and invertebrates is low/very low and to worms and plants is very low. Brachydanio rerio LC ₀ : > 1000 mg/l 96 hour test Daphnia EC ₅₀ : > 1000 mg/l 48 hour test E Coli toxicity EC ₅₀ : > 100 mg/l 48 hour test
Mobility	Reacts with water to produce carbon dioxide and polyurea solid.
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.
Bioaccumulative potential	Not expected to be bioaccumulative.
Additional ecological information	In a pond study with gross contamination, there was no evidence of bioaccumulation. It is unlikely that significant environmental exposure in the air or water will arise.

13. DISPOSAL CONSIDERATIONS

Unused Product/waste from cleaning etc.	Dispose of in accordance with local and national regulations. Do not empty into drains, sewers or water courses. EC Waste Catalogue (EWC) code: 08 05 01.
Contaminated packaging	Partially filled containers shall be disposed as for the product above. Fill well drained containers with water and a little detergent, allow to stand for at least 24 hours. Dispose of as non-hazardous packaging waste in accordance with local and national regulations after removing/invalidating the warning label. Use EWC Code 150112 Untreated well drained containers to be disposed of as hazardous packaging waste, use EWC Code 150110*.

14. TRANSPORT INFORMATION

Not classified as hazardous for transport.

Other information:

Not dangerous cargo. Irritating to skin and mucosa membranes. Avoid temperatures below 32 °F. Avoid heat above +120 °F. Keep dry. Keep away from foodstuffs, acids and alkalis.

15. REGULATORY INFORMATION

R-phrases

- R20** Harmful by inhalation.
R36/37/38 Irritating to eyes, respiratory system and skin.
R42/43 May cause sensitization by inhalation and skin contact.

S-phrases

- S23** Do not breathe vapor/spray.
S38 In case of insufficient ventilation, wear suitable respiratory equipment.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show this label where possible).
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S60 This material and/or its container must be disposed of as hazardous waste.

Special provisions statement Contains isocyanates. See information supplied by the manufacturer.

Hazardous component(s) which must be listed on the label Diphenyl methane diisocyanate, isomers and homologues

US EPA TSCA Status All chemical ingredients are listed on the TSCA inventory.
Canada Domestic All chemical ingredients are listed on the DSL

Substance List Status
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 2002.
Control of Substances Hazardous to Health Regs 2002.
Environmental Protection (Duty of Care) Regs. 1991.

Codes of Practice Waste Management. The Duty of Care.
Approved classification and labeling guide (Fifth edition). L131.
The compilation of safety data sheets (Third edition).

Guidance Notes Occupational Exposure Limits EH40
CHIP for Everyone HSG(108)

16. OTHER INFORMATION

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.

HMSRatings

Health 2
Flammability 1
Reactivity 1

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.

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

Do not use organic solvents for skin cleansing, it will lead to defatting of the skin, skin irritation and/or dermatitis.
Some solvents can be absorbed through the skin.
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.



Safety Data Sheet

prepared to UN GHS Revision 3

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

1.1	Product Identifier	100-CM-C	Revision Date:	07/25/2014
	Product Name:	Flowfresh CM Filler C	Supersedes 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

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.

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.

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>
14808-60-7	quartz (silicon dioxide)	75-100
1305-62-0	calcium hydroxide	2.5-10

<u>CAS-No.</u>	<u>GHS Symbols</u>	<u>GHS Hazard Statements</u>	<u>M-Factors</u>
14808-60-7	GHS08	H350-370-372	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 spray/Dry powder/Alcohol-resistant foam/Carbon 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)

<u>Name</u>	<u>%</u>	<u>OSHAPEL</u>	<u>Company TLV</u>
quartz (silicon dioxide)	75-100	0.1 MG/M3	
calcium hydroxide	2.5-10	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 gloves 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:	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)	1.750

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:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>
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.

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>EC50 48hr</u>	<u>IC50 72hr</u>	<u>LC50 96hr</u>
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.

<u>Chemical Name</u>	<u>CAS-No.</u>
No Chemical Name Found	68475-76-3
No Chemical Name Found	

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>
No Chemical Name Found	68475-76-3
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:

<u>Chemical Name</u>	<u>CAS-No.</u>
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.
H372	Causes 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 (EU) 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 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: 204-TCW-A-FORMULA Revision Date: 03/20/2015
Product Name: Peran TCW Base A Clear Supercedes Date: 07/28/2014
- 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
- Hazardous to the aquatic environment, Chronic, category 2
Carcinogenicity, category 1A
Eye Irritation, category 2
Skin Irritation, category 2
Skin Sensitizer, category 1

2.2 Label elements

Symbol(s) of Product



Signal Word

Danger

Named Chemicals on Label

reaction product: bisphenol-a-(epichlorhydrin) epoxy resin (number average molecularweight <= 700), oxirane, mono [(c12-14-alkyloxy)methyl] derivs.

HAZARD STATEMENTS

Hazardous to the aquatic environment, Chronic, category 2	H411	Toxic to aquatic life with long lasting effects.
Carcinogenicity, category 1A	H350-1A	May cause cancer.
Eye Irritation, category 2	H319	Causes serious eye irritation.
Skin Irritation, category 2	H315	Causes skin irritation.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.

PRECAUTION PHRASES

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
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
P332+313	If skin irritation occurs: Get medical advice/attention.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.

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

3.2 Mixtures

Hazardous Ingredients

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>%</u>
----------------	----------------------	----------

25068-38-6	reaction product bisphenol-a-(epichlorhydrin) epoxy resin (number average molecularweight <= 700)	75-100
68609-97-2	oxirane, mono[(c12-14-alkyloxy)methyl] derivs.	2.5-10
100-51-6	benzyl alcohol	2.5-10
64742-46-7	distillates (petroleum), hydrotreated middle	0.1-1.0

<u>CAS-No.</u>	<u>GHS Symbols</u>	<u>GHS Hazard Statements</u>	<u>M-Factors</u>
25068-38-6	GHS07-GHS09	H315-317-319-411	0
68609-97-2	GHS07	H315-317	0
100-51-6	GHS07	H302-319-332	0
64742-46-7	GHS08	H350	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: When symptoms persist or in all cases of doubt seek medical advice.

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. If skin irritation persists, call a physician.

AFTER EYE CONTACT: 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. Give small amounts of water to drink. 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

Irritating to skin. May cause sensitization by skin contact. Prolonged or repeated exposure increases the risk. Harmful to aquatic organisms.

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. 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. Contains epoxy constituents. See information supplied by the manufacturer.

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. May cause long-term adverse effects in the aquatic environment
- 6.3 Methods and material for containment and cleaning up
Prevent further leakage or spillage if safe to do so. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local /national regulations (see section 13).
- 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: Extremes of temperature and direct sunlight
STORAGE CONDITIONS: Store in original container. Keep locked up or in an area accessible only to qualified or authorised persons. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight
- 7.3 Specific end use(s)
No specific advice for end use available.

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>
reaction product bisphenol-a-(epichlorhydrin)	75-100		
epoxy resin (number average molecularweight <= 700)			
oxirane, mono[(c12-14-alkyloxy)methyl] derivs.	2.5-10		
benzyl alcohol	2.5-10		
distillates (petroleum), hydrotreated middle	0.1-1.0		

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: Rubber or plastic gloves. Long sleeved clothing. Remove and wash contaminated clothing before re-

use. Rubber or plastic apron.

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:	Transparent Resin
Physical State	Liquid
Odor	Weak Epoxy
Odor threshold	Not determined
pH	Non-aqueous
Melting point /freezing point (°C)	Not determined
Boiling point/range (°C)	N.D. - N.D.
Flash Point, (°C)	93
Evaporation rate	Not determined
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	999 - 0
Vapour Pressure	Not determined
Vapour density	1.16 g/cm ³
Relative density	Not determined
Solubility in /Miscibility with water	Insoluble
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	Not determined
Decomposition temperature (°C)	Not determined
Viscosity	Not determined
Explosive properties	N/A
Oxidising properties	N/A

9.2 Other information

VOC Content g/l:	20
Specific Gravity (g/cm ³)	0.120

10. Stability and Reactivity

10.1 Reactivity

No reactivity hazards known under normal storage and use conditions.

10.2 Chemical stability

No decomposition if stored and applied as directed. Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Extremes of temperature and direct sunlight

10.5 Incompatible materials

Strong oxidizing agents. Acids and bases.

10.6 Hazardous decomposition products

Thermal decomposition can lead to release of irritating gases and vapours. Alcohols. Exothermic reaction. 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:

Inhalation LC50:

Irritation: Irritating to eyes, skin, mouth and pharynx.

Corrosivity: No information available.

Sensitization: Prolonged or repeated skin contact may result in allergic eczema.

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>
25068-38-6	reaction product bisphenol-a-(epichlorhydrin) epoxy resin (number average molecularweight <= 700)	>2000 mg/kg, rat, oral	>2000 mg/kg, rat	
68609-97-2	oxirane, mono[(c12-14-alkyloxy)methyl] derivs.	17100 mg/kg, oral, rat		
100-51-6	benzyl alcohol	1230 mg/kg rat, oral		1000 ppm /8 hrs rat inhalation
64742-46-7	distillates (petroleum), hydrotreated middle	3160 mg/kg rabbit oral		

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>
25068-38-6	reaction product bisphenol-a-(epichlorhydrin) epoxy resin (number average molecularweight <= 700)	No information	No information	
68609-97-2	oxirane, mono[(c12-14-alkyloxy)methyl] derivs.	No information	No information	
100-51-6	benzyl alcohol	No information	No information	
64742-46-7	distillates (petroleum), hydrotreated middle	No information	No information	

13. Disposal Considerations

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

14. Transport Information

14.1 UN number	UN3082
14.2 UN proper shipping name	Environmentally Hazardous Substance, Liquid, N.O.S.
Technical name	Epoxy Resin
14.3 Transport hazard class(es)	9
Subsidiary shipping hazard	N/A
14.4 Packing group	III
14.5 Environmental hazards	Yes
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:

Acute 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:

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 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)	<20
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>
hydrophobic silicon dioxide, s	67762-90-7
No Chemical Name Found	

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 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

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H350	May cause cancer.
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/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 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 204-TCW-B-1GAL Revision Date: 03/20/2015
Product Name: Peran TCW Hardener B Supercedes Date: 08/25/2014
- 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: 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
- Acute Toxicity, Oral, category 4
 - Acute Toxicity, Inhalation, category 4
 - Hazardous to the aquatic environment, Chronic, category 3
 - Skin Corrosion, category 1
 - Skin Sensitizer, category 1

2.2 Label elements

Symbol(s) of Product



Signal Word

Danger

Named Chemicals on Label

benzyl alcohol, benzene-1, 3-dimethanamine, 3-aminomethyl-3,5,5-trimethylcyclohexylamine

HAZARD STATEMENTS

Acute Toxicity, Oral, category 4	H302	Harmful if swallowed.
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
Hazardous to the aquatic environment, Chronic, category 3	H412	Harmful to aquatic life with long lasting effects.
Skin Corrosion, category 1	H314-1	Causes severe skin burns and eye damage.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.

PRECAUTION PHRASES

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P303+361+353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P333+313	If skin irritation or rash 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

3.2 Mixtures

Hazardous Ingredients

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>%</u>
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	25-50
100-51-6	benzyl alcohol	25-50
1477-55-0	benzene-1, 3-dimethanamine	10-25

<u>CAS-No.</u>	<u>GHS Symbols</u>	<u>GHS Hazard Statements</u>	<u>M-Factors</u>
100-51-6	GHS07	H302-319-332	0

2855-13-2	GHS05-GHS07	H302-312-314-317-412	0
1477-55-0	GHS05-GHS06	H302-314-317-331-412	0

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

4. First-aid Measures

4.1 Description of First Aid Measures

GENERAL NOTES: When symptoms persist or in all cases of doubt seek medical advice.

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: 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

Causes severe burns. Harmful in contact with skin and if swallowed. Irritating to eyes and respiratory system.

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. High volume water jet. Hazardous decomposition products formed under fire conditions. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment.

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

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. Wear personal protective equipment. Do not breathe vapours or spray mist.

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: Direct sources of heat

STORAGE CONDITIONS: Store in original container. Keep locked up or in an area accessible only to qualified or authorised persons. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight

7.3 Specific end use(s)

No specific advice for end use available.

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>
3-aminomethyl-3,5,5-trimethylcyclohexylamine	25-50		
benzyl alcohol	25-50		
benzene-1, 3-dimethanamine	10-25		

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

8.2 Exposure controls

Personal Protection

RESPIRATORY PROTECTION: Respirator with filter for organic vapor.

EYE PROTECTION: Safety glasses.

HAND PROTECTION: Rubber or plastic gloves. Long sleeved clothing. Remove and wash contaminated clothing before re-use. Rubber or plastic apron.

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:	Light Yellow - Clear
Physical State	Liquid
Odor	Amine Like
Odor threshold	Not determined
pH	11-12
Melting point /freezing point (°C)	Not determined

Boiling point/range (°C)	302 F - N.D.
Flash Point (°C)	93
Evaporation rate	Not determined
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	999 - 0
Vapour Pressure	Not determined
Vapour density	ca. 1.05 g/cm ³
Relative density	Not determined
Solubility in /Miscibility with water	Limited
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	Not determined
Decomposition temperature (°C)	Not determined
Viscosity	Not determined
Explosive properties	N/A
Oxidising properties	Not determined

9.2 Other information

VOC Content g/l:	12
Specific Gravity (g/cm ³)	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 may occur.

10.4 Conditions to avoid

Direct sources of heat

10.5 Incompatible materials

Strong oxidizing agents.

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:

Inhalation LC50:

Irritation: No information available.

Corrosivity: Causes burns. Dehydrating on skin. Eye contact may cause irreversible damage.

Sensitization: Prolonged or repeated skin contact may result in allergic eczema.

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>
100-51-6	benzyl alcohol	1230 mg/kg rat, oral		1000 ppm /8 hrs rat inhalation
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	500 mg/kg oral		
1477-55-0	benzene-1, 3-dimethanamine	1514 mg/kg, oral		

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>
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	No information	No information	
100-51-6	benzyl alcohol	No information	No information	
1477-55-0	benzene-1, 3-dimethanamine	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 UN2735
- 14.2 UN proper shipping name Amines, Liquid, Corrosive, N.O.S.
Technical name Benzene-1,3-Dimethanamine, 3-aminomethyl-3,5,5-trimethylcyclohexylamine
- 14.3 Transport hazard class(es) 8
Subsidiary shipping hazard N/A
- 14.4 Packing group PG III
- 14.5 Environmental hazards RQ 1001 lbs.
- 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:

Acute 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:

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 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)	12
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>
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No Chemical Name Found

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>
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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

H302	Harmful if swallowed.
H312	Harmful in contact with skin.

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H412	Harmful 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 (EU) 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 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.