EXHIBIT A

Volatile Free, Inc Application Instructions for VFI-200 for Concrete Secondary Containment Membrane

Chemicals for Secondary Containment Use: The VFI-200 is to be used only for the following chemicals:

- Ethanol
- Diesel
- Gasoline
- Jet Fuel
- Combinations of the Above

Contractors: All contractors must be approved by Volatile Free, Inc, or by an associated partner of Volatile Free, Inc as allowed. Each contractor must have a minimum of 3 years of coating experience, and understand the use of the membrane, and have intricate knowledge of the application system. Each project needs to be reviewed by a Volatile Free, Inc representative to ensure that the application is within the allowable limits of the VFI-200 membrane.

Surface Preparation: The concrete should be cleaned of all loose coating, dirt, oils, or other chemicals that may interfere with adhesion of the VFI-200 system. Sand blast the concrete to a clean, white finish, or use of chemical detergents and water to clean may be necessary, depending on the condition of the substrate, prior to application.

Adhesion Testing: Adhesion testing on a small, 12”X12” patch is recommended prior to starting the membrane coating project. This may be waived depending on the condition of the substrate, and the necessary steps taken to achieve an acceptable substrate finish. It may be recommended to use VFI-1007 polyurethane sealer/primer at a rate of 150-300 sq ft/gallon, depending on the porosity of the surface to achieve optimal adhesion.

Application: Volatile Free, Inc advises to use a 60-80 mil thickness for secondary containment applications. The application thickness recommendation is a range where the thickness should never go below 60 mils, but 80 mils would be the target. Testing for secondary containment was completed within the 60-80 mil range, and the results reflected that this range is sufficient for the allowed chemicals for secondary containment.

The use of plural component, impingement mix equipment is needed for application. The “B” side Poly component needs to be mixed for 15-20 minutes, until homogenous, prior to plural component application. The equipment settings should be a minimum temperature of 160 F and minimum pressure of 2000 psi. The pattern should be even and uniform during the application, with a maximum of 4 hours before the overlap of existing coating is coated with new coating.

Once the job is complete, inspect random areas to ensure that the 60 mil minimum application thickness is consistent throughout the project.

Questions: If there are any questions about the use, application, limitation, or warranties, please contact Volatile Free, Inc, or a Volatile Free, Inc representative for more information. The typical warranty is limited to material replacement, if it is proven that the material was defective upon receipt, not due to applicator error.

VOLATILEFREE INC®
MANUFACTURER OF HIGH PERFORMANCE POLYMERS

Sustainability
Durability
Flexibility

VFI-200 POLYUREA SPRAY ELASTOMER SYSTEM

Overview

Description
VFI-200 is a high performance, 100% solids, spray applied, aromatic pure polyurea elasto-plastic polymer. It is characterized by optimal physical properties, outstanding chemical and solvent resistance, and usability under wide climatic conditions with outstanding durability. It is composed of Isocyanate pre-polymers, which are reacted with amine pre-polymers to form a pure polyurea elasto-plastic polymer.

Both components are low viscosity fluids, which react very quickly to form a tough polymer when mixed and applied using heated, plural component airless spray equipment.

Usage
VFI-200 is primarily used for high abrasion and chemical resistant lining applications. Please contact Volatile Free, Inc. for application specifications:

Color
Standard color is black. This is an Aromatic product. Custom colors are available but may change with UV exposure.

Physical Properties

Hardness
ASTM D-2240

Shore A	94 ± 2
Shore D	50 ± 2

Tensile Properties
ASTM D-412

Strength	2523 psi
Elongation	349%
Elastic Modulus	8244 psi
Yield Strength	1030 psi
Permanent Set	35% max

Tear Strength
ASTM D-624 Die C 425 ± 20 pli

Solid Material Density
66 pcf

Cold Temperature Flexibility
ASTM D-2240
Pass 0.25 inch Mandrel Bend Test at -40˚F.

Adhesion
ASTM D-4541
Prepared & primed concrete >725 lbs/in² with concrete failure

Weather & Environmental Performance

Weatherability QUV Test Data
ASTM G-53
No cracking, checking or loss of integrity after 2000 hours. This is an Aromatic product. Light colors yellow when exposed to UV light.

Chemical Resistance
Contact VFI for with specific chemicals for verification.

Service Temperature
-40˚F to 180˚F

Hydrolytic Properties
- **Water absorption**
  ASTM D-471 1.5%
- **Water Vapor Permeability**
  0% R.H. @ 73°F 45 mil film: 0.69 perms

Fire Resistance Not rated

Liquid Component Properties

Ratio
Volume 1 to 1

Coverage
mil/ft/gal 1600

Solids 100%

Viscosity

"A" side:	500 ± 200cps @ 77°F
"B" side:	500 ± 200 cps @ 77°F

- **Liquid Material Density & Specific Gravity**
  "A" side 9.19 lbs/gal (SG 1.103 g/ml)
  Depending upon color.
  "B" side (black) 8.41 lbs/gal (SG 1.010 g/ml)

- **VOC's**
  Contains no Volatile Organic Compounds.

- **Toxicity**
  ISO component contains polymeric Isocyanate requiring fresh air respirator, gloves, eye protection and protective clothing during application.

- **Storage Stability or Shelf Life**
  "A" side 6 months in unopened containers @ 50-90°F
  "B" side 12 months in unopened containers @ 50-90°F.

- **Reactivity**
  - **Gel Time:** Gel in 5-8 seconds.
  - **Tack Free:** Cure to handle in 30-40 seconds.
  - **Recoat Time:** Recoatable for up to 8 hours.
  - **Place-Into-Service Time:** Can be placed into light duty service in 8 hours. Chemical contact in 24 hours.
  - **Cure Time:** Develops full chemical resistance and physical properties in 48 hours.

Application

- **Equipment**
  VFI-200 requires hot airless plural component equipment capable of maintaining a minimum of 2000 psi and heat to 160°F. Higher pressures to 2500 psi may provide better mixing with enhanced physical properties for the end product. Contact Volatile Free, Inc. for specific spray gun recommendations.

- **Material Preparation**
  The product must be over 70˚ F for proper mixing and application.

- **Mixing**
  Proper mixing equipment must be used to mix the Poly (B) side. Mix for 20 minutes before using. Please contact VFI's technical department for specific mixer recommendations.

- **Substrate Preparation**
  All surfaces must be free of contaminants and be able to provide mechanical adhesion on a solid substrate. Steel should be white blasted per SSPC-SP10/NACE 2-3 mil. Sandblast or shotblast all concrete surfaces to achieve a profile equal to 80-100 grit sand paper. Refer to SP13/NACE 6.

- **Primers**
  Sealing porous surfaces with VFI-1007 is recommended. VFI-#11 Epoxy Primer is also recommended for cementious and masonry surfaces where enhanced adhesion is needed.
  VFI-1003 Primer is recommended for maximum adhesion to white blasted steel surfaces. Please contact Volatile Free, Inc. for more specific preparation recommendations.

- **Clean-up Solvent**
  Xylene, M.E.K. For reduced fire hazard use glycol ethers or environmentally acceptable chlorinated solvents.

- **Limitations**
  Contact VFI's Technical Department for appropriateness of this product for your specific application.

- **Precautions**
  See Safety Data Sheet for complete safety data. Protect from exposure to moisture. Water will cause the "A" component (ISO) to generate carbon dioxide with resulting high pressure in closed containers.

- **Thinning**
  Not Recommended

- **Packaging**
  5 gallon pails
  15 gallon ponies
  55 gallon drums
  270 gallon totes

Corporate Office: P.O. Box 344 • Brookfield, WI 53008 • (800) 307-9218 • (262) 787-0400 • Fax (262) 787-0500 • www.volatilefree.com

This information and technical advice provided herein are believed to be reliable and accurate to the best knowledge of Volatile Free, Inc., As based on tests and should serve only as a recommendation. As the manufacturer, Volatile Free, Inc makes no representations or warranties of any kind, expressed, implied or statutory, including but not limited to all implied warranties of merchantability or fitness for use or a particular purpose, or any other matter with respect to this product. Volatile Free, Inc makes no representations or warranties as to the results of the use of the product and assumes no obligation or liability in connection therewith. Volatile Free, Inc is not liable for any special, exemplary, punitive, incidental or consequential damages of any sort or kind from use of this product. The information provided herein is subject to change at any time without notice. Information changes may include, but are not limited to, commercial and technical changes, changes in pricing, physical characteristics and packaging.

VFI-200 A side

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 03/04/2016 Revision date: 03/04/2017 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : VFI-200 A side

Product code : Not available

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

Use of the substance/mixture : Polyurea Spray Elastomer System

1.3. Details of the supplier of the safety data sheet

Volatile Free, Inc
19500 Janacek Court
Brookfield, WI 53045 - USA
T 800-307-9218

1.4. Emergency telephone number

EmergencyTelephone: (outside the U.S.): : 1-703-527-3887 / (U.S. and Canada) 1-800-424-9300

Association/Organization: CHEMTREC

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Irritation 2
Eye Irritation 2A
Respiratory Sensization 1
Skin Sensization 1
Specific Target Organ Toxicity - Single Exposure 3
Specific Target Organ Toxicity - Repeated Exposure 2

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS07

GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : Causes skin irritation. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure.

Precautionary statements (GHS-US) : Wash hands thoroughly after handling. Wear protective gloves/eye protection/face protection. In case of inadequate ventilation wear respiratory protection. Contaminated work clothing must not be allowed out of the workplace. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapors/spray. Get medical advice/attention if you feel unwell. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing.If experiencing respiratory symptoms: Call a poison center/doctor. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

No additional information available.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable.

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly[oxy(methyl-1,2-ethanediyl)]	(CAS No) 53862-89-8	30 - 60	Skin Irrit. 2 Eye Irrit. 2 Resp. Sens. 1 Skin Sens. 1 STOT SE 3 STOT RE 2
4,4'-Methylenediphenyl diisocyanate	(CAS No) 101-68-8	15 - 40	Skin Irrit. 2 Eye Irrit. 2A Resp. Sens. 1 Skin Sens. 1 STOT SE 3 STOT RE 2
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	(CAS No) 5873-54-1	7 - 13	Skin Irrit. 2 Eye Irrit. 2A Resp. Sens. 1 Skin Sens. 1 STOT SE 3 STOT RE 2

* The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse.;If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.

First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory tract irritation.

Symptoms/injuries after skin contact : Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May cause sensitization by skin contact.

Symptoms/injuries after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Symptoms/injuries after ingestion : May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Treat for surrounding material.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon, oxides of nitrogen, isocyanates.

5.3. Advice for firefighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

For containment : Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/ spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Use only outdoors or in a well-ventilated area.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Keep container tightly closed and in a well-ventilated place. Store locked up.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly[oxy(methyl-1,2-ethanediyl)] (53862-89-8)		
USA ACGIH	ACGIH TWA (ppm)	Not available.
USA OSHA	OSHA PEL (TWA)	Not available.

4,4'-Methylenediphenyl diisocyanate (101-68-8)		
USA ACGIH	ACGIH TWA (ppm)	0.005 ppm
USA OSHA	OSHA PEL (Ceiling) (mg/m³)	0.2 mg/m³
USA OSHA	OSHA PEL (Ceiling) (ppm)	0.02 ppm

Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]- (5873-54-1)		
USA ACGIH	ACGIH TWA (ppm)	Not available.
USA OSHA	OSHA PEL (TWA)	Not available.

8.2. Exposure controls

Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

Hand protection : Wear chemically resistant protective gloves.

Eye protection : Wear eye protection.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls : Maintain levels below Community environmental protection thresholds.

Other information : Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid.

Appearance : Viscous liquid.

Color : Various.

Odor : Slightly sweet.

Odor threshold : No data available.

pH	:	No data available.
Relative evaporation rate (butylacetate=1)	:	No data available.
Melting point	:	No data available.
Freezing point	:	No data available.
Boiling point	:	No data available.
Flash point	:	> 93 °C (> 200 °F)
Auto-ignition temperature	:	No data available.
Decomposition temperature	:	No data available.
Flammability (solid, gas)	:	Not flammable.
Vapor pressure	:	No data available.
Relative vapor density at 20 °C	:	No data available.
Relative density	:	1.10
Solubility	:	No data available.
Log Pow	:	No data available.
Log Kow	:	No data available.
Viscosity, kinematic	:	No data available.
Viscosity, dynamic	:	300 - 700 cP
Explosive properties	:	No data available.
Oxidising properties	:	No data available.
Explosive limits	:	No data available.

9.2. Other information

No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Heat. Incompatible materials.

10.5. Incompatible materials

Strong bases, acids, alcohols amines, water.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon, oxides of nitrogen, isocyanates.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

VFI-200 A side	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	No data available.

4,4'-Methylenediphenyl diisocyanate (101-68-8)	
LD50 oral rat	9200 mg/kg
LD50 dermal rabbit	> 9400 mg/kg
LC50 inhalation rat	369 mg/m³ 4 h

Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]- (5873-54-1)	
LC50 inhalation rat	387 mg/m³ 4 h

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Causes serious eye irritation.
Respiratory or skin sensitization	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity	:	Based on available data, the classification criteria are not met.
Carcinogenicity	:	Based on available data, the classification criteria are not met.

4,4'-Methylenediphenyl diisocyanate (101-68-8)	
IARC group	3 - Not classifiable

Reproductive toxicity	:	Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	:	May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	:	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	:	Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory tract irritation.
Symptoms/injuries after skin contact	:	Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May cause sensitization by skin contact.
Symptoms/injuries after eye contact	:	Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/injuries after ingestion	:	May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

SECTION 12: Ecological information

12.1. Toxicity

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

12.2. Persistence and degradability

VFI-200 A side	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

VFI-200 A side	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available.

12.5. Other adverse effects

Effect on ozone layer	:	No additional information available.
Effect on the global warming	:	No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	:	This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

Not regulated for transport.

14.2. UN proper shipping name

Not applicable.

14.3. Additional information

Other information	:	No supplementary information available.
Special transport precautions	:	Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

4,4'-Methylenediphenyl diisocyanate (101-68-8)	
Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0 %

15.2. US State regulations

VFI-200 A side	
State or local regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

SECTION 16: Other information

Indication of changes	:	None.
Date of issue	:	03/04/2017
Other information	:	None.

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

VOLATILE FREE, INC.:

THIS INFORMATION AND TECHNICAL ADVICE PROVIDED HEREIN ARE BELIEVED TO BE RELIABLE AND ACCURATE TO THE BEST KNOWLEDGE OF VOLATILE FREE, INC., AS BASED ON TESTS AND SHOULD SERVE ONLY AS A RECOMMENDATION. AS THE MANUFACTURER, VOLATILE FREE, INC MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESSED, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR USE OR A PARTICULAR PURPOSE FOR THE PRODUCT. VOLATILE FREE, INC MAKES NO REPRESENTATIONS OR WARRANTIES AS TO THE RESULTS OF THE USE OF THE PRODUCT AND ASSUMES NO OBLIGATION OR LIABILITY IN CONNECTION THEREWITH. VOLATILE FREE, INC. IS NOT LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY SORT FROM USE OF THIS PRODUCT. THE INFORMATION PROVIDED HEREIN IS SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE. INFORMATION CHANGES MAY INCLUDE, BUT ARE NOT LIMITED TO, COMMERCIAL AND TECHNICAL CHANGES, CHANGES IN PRICING, PHYSICAL CHARACTERISTICS AND PACKAGING.

VFI-200 B side

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 03/04/2016 Supersedes: 03/04/2017 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : VFI-200 B side

Product code : Not available.

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

Use of the substance/mixture : Polyurea Spray Elastomer.

1.3. Details of the supplier of the safety data sheet

Volatile Free, Inc
19500 Janacek Court
Brookfield, WI 53045 - USA
T 800-307-9218

1.4. Emergency telephone number

Emergency Telephone: (outside the U.S.): : 1-703-527-3887 / (U.S. and Canada) 1-800-424-9300

Association/Organization: CHEMTREC

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute Toxicity 4 (Oral)

Skin Corrosion 1C

Eye Damage 1

Carcinogenicity 2 (Inhalation)

Single Target Organ Toxicity - Repeated Exposure 2

Single Target Organ Toxicity – Single Exposure 3

Hazardous to the aquatic environment, long-term hazard Cat. 1

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS05 GHS07 GHS08 GHS09

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : Toxic if swallowed. Causes severe skin burns and eye damage. Contains materials suspected of causing cancer (Inhalation). Contains materials that may damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

Precautionary statements (GHS-US) : Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. If exposed or concerned: Get medical advice/attention. If swallowed: rinse mouth. Do NOT induce vomiting. Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a poison center/doctor. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/ doctor. Store locked up. Dispose of contents/container in accordance with local/regional/ national/international regulations.

2.3. Other hazards

No additional information available.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable.

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Diaminopolypropylene glycol	(CAS No) 9046-10-0	40 - 80	Acute Tox. 4 (Oral) Skin Corr. 1C Asp. Tox. 1
Diethyltoluenediamine	(CAS No) 68479-98-1	10 - 30	Acute Tox. 4 (Oral) Eye Irrit. 2A STOT RE 2
N,N'-dialkylaminodiphenylmethane	(CAS No) 5285-60-9	10 - 30	Acute Tox. 4 (Oral) Skin Irritation 2 Eye Irritation 2 Skin Sensitization 1A STOT SE 3 Aquatic LT 1
Carbon black**	(CAS No) 1333-86-4	0.1 - 1	Carc. 2** (Inhalation)

* The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

** These materials are bound in liquid/paint and are not airborne or in dust form.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause respiratory tract irritation. May cause burns.

Symptoms/injuries after skin contact : Toxic in contact with skin. Causes severe skin burns. Symptoms may include redness, pain, blisters. Repeated exposure to this material can result in absorption through skin causing significant health hazard.

Symptoms/injuries after eye contact : Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.

Symptoms/injuries after ingestion : Toxic if swallowed. May cause stomach distress, nausea, or vomiting. May cause burns.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Treat for surrounding material.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon, oxides of nitrogen.

5.3. Advice for firefighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

For containment : Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/ spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Use only in well-ventilated areas.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Keep container tightly closed and in a well-ventilated place. Store locked up.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Diaminopolypropylene glycol (9046-10-0)		
USA ACGIH	ACGIH TWA	Not available.
USA OSHA	OSHA PEL (TWA)	Not available.

Diethyltoluenediamine (68479-98-1)		
USA ACGIH	ACGIH TWA	Not available.
USA OSHA	OSHA PEL (TWA)	Not available.

Carbon black (1333-86-4)		
USA ACGIH	ACGIH TWA (mg/m³)	3 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	3.5 mg/m³

N,N'-dialkylaminodiphenylmethane (5285-60-9)		
USA ACGIH	ACGIH TWA (mg/m³)	Not available.
USA OSHA	OSHA PEL (TWA) (mg/m³)	Not available.

8.2. Exposure controls

Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

Hand protection : Wear chemically resistant protective gloves.

Eye protection : Wear approved eye protection (properly fitted dust- or splash-proof chemical safety goggles) and face protection (face shield).

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls : Maintain levels below Community environmental protection thresholds.

Other information : Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid.

Appearance : Viscous liquid.

Colour	:	Varies.
Odour	:	Pungent.
Odour threshold	:	No data available.
pH	:	No data available.
Relative evaporation rate (butylacetate=1)	:	No data available.
Melting point	:	No data available.
Freezing point	:	No data available.
Boiling point	:	No data available.
Flash point	:	> 93 °C (> 200 °F)
Auto-ignition temperature	:	No data available.
Decomposition temperature	:	No data available.
Flammability (solid, gas)	:	Not flammable.
Vapour pressure	:	No data available.
Relative vapour density at 20 °C	:	No data available.
Relative density	:	1.01
Solubility	:	No data available.
Log Pow	:	No data available.
Log Kow	:	No data available.
Viscosity, kinematic	:	No data available.
Viscosity, dynamic	:	300 - 700 cP
Explosive properties	:	No data available.
Oxidising properties	:	No data available.
Explosive limits	:	No data available.

9.2. Other information

No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Heat. Incompatible materials.

10.5. Incompatible materials

Strong oxidizers, acids.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon, oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Toxic if swallowed.

VFI-200 B	
LD50 oral rat	>300 but ≤2000 mg/kg
LD50 dermal rabbit	>2000 mg/kg
LC50 inhalation rat	No data available.

Diaminopolypropylene glycol (9046-10-0)	
LD50 oral rat	480 mg/kg
LD50 dermal rabbit	2090 mg/kg

Diethyltoluenediamine (68479-98-1)	
LD50 oral rat	485 mg/kg
LD50 dermal rabbit	>2000 mg/kg

Carbon black (1333-86-4)	
LD50 oral rat	> 15400 mg/kg
LD50 dermal rabbit	>3 g/kg

N,N'-dialkylaminodiphenylmethane (5285-60-9)	
LD50 oral rat	1400 mg/kg
LD50 dermal rabbit	3090 mg/kg

Skin corrosion/irritation : Causes severe skin burns.
Serious eye damage/irritation : Caues serious eye damage.
Respiratory or skin sensitisation : Based on available data, the classification criteria are not met.
Germ cell mutagenicity : Based on available data, the classification criteria are not met.
Carcinogenicity : Suspected of causing cancer.

Carbon black (1333-86-4)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity : Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure) : May cause damage to organs through a single exposure.
Specific target organ toxicity (repeated exposure) : May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : May cause respiratory tract irritation. May cause burns.
Symptoms/injuries after skin contact : Causes severe skin burns. Symptoms may include redness, pain, blisters. Repeated exposure to this material can result in absorption through skin causing significant health hazard.
Symptoms/injuries after eye contact : Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.
Symptoms/injuries after ingestion : Toxic if swallowed. May cause stomach distress, nausea, or vomiting. May cause burns.

SECTION 12: Ecological information

12.1. Toxicity

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

12.2. Persistence and degradability

VFI-200 B	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

VFI-200 B	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available.

12.5. Other adverse effects

Effect on ozone layer : No additional information available.

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

UN-No.(DOT)	UN1760

14.2. UN proper shipping name

Proper Shipping Name (DOT)	:	CORROSIVE LIQUID, N.O.S. (POLYOXYPROPYLENEDIAMINE)
Department of Transportation (DOT) Hazard Classes	:	8
Hazard labels (DOT)	:	
Packing group (DOT)	:	III

14.3. Additional information

Other information	:	No supplementary information available.
Special transport precautions	:	Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

Diethyltoluenediamine (68479-98-1)	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

15.2. US State regulations

VFI-200 B	
State or local regulations	This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SECTION 16: Other information

Indication of changes	:	None.
Date of issue	:	03/04/2017
Other information	:	None.

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

VOLATILE FREE, INC.:

THIS INFORMATION AND TECHNICAL ADVICE PROVIDED HEREIN ARE BELIEVED TO BE RELIABLE AND ACCURATE TO THE BEST KNOWLEDGE OF VOLATILE FREE, INC., AS BASED ON TESTS AND SHOULD SERVE ONLY AS A RECOMMENDATION. AS THE MANUFACTURER, VOLATILE FREE, INC MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESSED, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR USE OR A PARTICULAR PURPOSE FOR THE PRODUCT. VOLATILE FREE, INC MAKES NO REPRESENTATIONS OR WARRANTIES AS TO THE RESULTS OF THE USE OF THE PRODUCT AND ASSUMES NO OBLIGATION OR LIABILITY IN CONNECTION THEREWITH. VOLATILE FREE, INC. IS NOT LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY SORT FROM USE OF THIS PRODUCT. THE INFORMATION PROVIDED HEREIN IS SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE. INFORMATION CHANGES MAY INCLUDE, BUT ARE NOT LIMITED TO, COMMERCIAL AND TECHNICAL CHANGES, CHANGES IN PRICING, PHYSICAL CHARACTERISTICS AND PACKAGING.

PRI Construction Materials Technologies LLC
6412 Badger Drive
Tampa, FL 33647
813.621.5777
https://www.pri-group.com/

Brad Grzybowski
Managing Director

December 3, 2018

Mr. Michael Sullivan
Volatile Free
19500 Janacek Court
Brookfield, WI 53045

This is a letter to support your application to Florida DEP for approval of Volatile Free VFI-200 as a secondary containment membrane for concrete in underground storage tank applications. Specifically, this letter summarizes test data, including reference to currently Florida DEP approved benchmark comparison, and thus supports request for approval of VFI-200 pursuant to Rule 62-761.850 in the category of Coatings AST/UST Synthetic or Concrete.

Basic Assumptions:
current Florida DEP approved benchmark: EQ-531 (Sherwin Williams AR425)

Test Data: Refer to PRI Project/Report VFI-071-02-01
Chemical Resistance cell testing (ASTM D6943) – Volatile Free VFI-200 was applied to concrete substrate and subjected to one-side (i.e. coated side) chemical exposure. Deleterious effects, such as blistering, swelling, surface hardness, and indentation hardness were investigated. Chemical exposures were jet fuel, ethanol, gas, and diesel; exposure was 72h; assessment was made after 72h as well as after 72h exposure plus 48h recovery period. VFI-200 performed comparable or equivalent to benchmark comparison.

Chemical Resistance immersion testing (ASTM D543) – Volatile Free VFI-200 was applied to a releasable substrate to facility cured free film sample. Free films were subjected to chemical immersion. Tensile properties were assessed. Chemical exposures were jet fuel, ethanol, gas, and diesel; exposure was 72h; assessment was made after 72h as well as after 72h exposure plus 48h recovery period. VFI-200 performed comparable or equivalent to benchmark comparison.

Remarks:
Volatile Free VFI-200 tests comparable or equivalent to current Florida DEP approved benchmark (EQ-531) in chemical resistance performance as assessed by standardized test methods. Approval as a secondary containment membrane for concrete in underground storage tank applications is warranted.

Signed: _____
Brad Grzybowski
Managing Director

Date: 12/03/2018

VFI-071-02-01

PRI Construction Materials Technologies LLC

6412 Badger Drive
Tampa, FL 33610
813.621.5777
https://www.pri-group.com/

Laboratory Test Report

Report for:	Mike Sullivan Volatile Free 19500 Janacek Court Brookfield, WI 53045
Product Name:	VFI-200 (with benchmark comparison)
Project No.:	VFI-071-02-01
Date(s) Tested:	Sep. 12, 2018 – Sep. 28, 2018
Test Method(s):	ASTM D6943 (with ASTM C661, ASTM D714, ASTM D3363, and ASTM D6132) and ASTM D543 (with ASTM D412)
Results Summary:	Benchmarking Study ONLY – refer to results

Purpose: Complete a chemical resistance benchmarking study for a secondary containment membrane in accordance with proponent instructions and standard test methods.

Test Methods: Testing was conducted as instructed by proponent. Benchmarking study included Chemical Resistance testing for jet fuel, ethanol, gas, and diesel.

Chemical Resistance cell testing was performed in accordance with ASTM D6943-15: *Standard Practice for Immersion Testing of Industrial Protective Coatings and Linings*. Procedure B (One-Side Cell Testing), but without temperature gradient, was utilized; this procedure is analogous to ASTM C868: *Standard Test Method for Chemical Resistance or Protective Linings* and NACE TM 0174: *Laboratory Methods for the Evaluation of Protective Coatings and Lining Materials on Metallic Substrates in Immersion Service*, Procedure A. Substrate was concrete. Exposure duration was 72h. Test specimens were evaluated for a.) Blistering in accordance with ASTM D714-02(2017): *Standard Test Method for Evaluating Degree of Blistering of Paints*, b.) Swelling/Thickness in accordance with ASTM D1005-95(2013): Standard Test Method for Measurement of Dry-Film Thickness of Organic Coatings Using Micrometers, c.) Surface Hardness in accordance with ASTM D3363-05(2011)$^{\varepsilon 2}$: *Standard Test Method for Film Hardness by Pencil Test*, and d.) Indentation Hardness in accordance with ASTM D2240-15$^{\varepsilon 1}$: *Standard Test Method for Rubber Property – Durometer Hardness*.

Chemical Resistance immersion testing was performed in accordance with ASTM D543-14: *Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents*. Free films of cured coating were evaluated. Exposure duration was 72h. Test specimens were evaluated for Tensile Properties in accordance with ASTM D412-17: *Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension*; Method A with Die C specimens was utilized.

The test results, opinions, or interpretations are based on the material supplied by the client. This report is for the exclusive use of stated client. No reproduction or facsimile in any form can be made without the client's permission. This report shall not be reproduced except in full without the written approval of this laboratory. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

Sampling: The following materials were received by PRI.

Product	Source	Received	Sampling
Volatile Free VFI-200 on concrete	Brookfield, WI	Aug. 6, 2018	Volatile Free
Volatile Free VFI-200 free films	Brookfield, WI	Aug. 6, 2018	Volatile Free
Sherwin Williams AR-425 on concrete	Brookfield, WI	Aug. 6, 2018	Volatile Free
Sherwin Williams AR-425 free films	Brookfield, WI	Aug. 6, 2018	Volatile Free

PRI provided the concrete substrate to Volatile Free, who prepared samples due to requisite spray equipment; hot, airless, plural component, high pressure spray equipment is required for these products.

Sample Preparation: Samples were prepared in accordance with manufacturer Technical Data Sheets and application instructions. Target dry film thicknesses were 70-100mil.

Continued on Following Page

The test results, opinions, or interpretations are based on the material supplied by the client. This report is for the exclusive use of stated client. No reproduction or facsimile in any form can be made without the client's permission. This report shall not be reproduced except in full without the written approval of this laboratory. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

PRI Construction Materials Technologies LLC 6412 Badger Drive Tampa, FL 33610 Tel: 813-621-5777 Fax: 813-621-5840 e-mail: materialstesting@pricmt.com WebSite: http://www.pri-group.com

Results:

Physical Properties	Test Method	Results								Requirement
		Volatile Free - VFI-200				Sherwin Williams - AR 425				
		jet fuel	ethanol	gas	diesel	jet fuel	ethanol	gas	diesel	
Chemical Immersion (One-Side Cell Test) Substrate: concrete 2 specimens; exposure area of 2in Ø	ASTM D6943									
Unexposed Control										
Blistering[1] *[Rating]*	ASTM D714 Size/Frequency	10				10				Report
Swelling / Thickness (mil)	ASTM D1005	-				-				Report
Surface Hardness[2] *[pencil lead]*	ASTM D3363 Scratch	H				F				Report
Indentation Hardness (Durometer) Type A-2	ASTM C 661	90				86				Report
After 72h Exposure (no temp. gradient)										
Blistering[1] *[Rating]*	ASTM D714 Size/Frequency	10	10	10	10	#4, MD	10	#6, MD	10	Report
Swelling / Thickness (mil)	ASTM D1005	54	54	88	3	57	81	74	8	Report
Surface Hardness[2] *[pencil lead]*	ASTM D3363 Scratch	> 9H	> 9H	> 9H	H	> 9H	> 9H	> 9H	H	Report
Indentation Hardness (Durometer) Type A-2	ASTM C 661	76	62	58	86	76	54	50	84	Report
After 72h Exposure plus 48h Recovery										
Blistering[1] *[Rating]*	ASTM D714 Size/Frequency	10	10	10	10	#4, MD	10	#6, MD	10	Report
Swelling / Thickness (mil)	ASTM D1005	16	18	28	1	15	37	6	4	Report
Surface Hardness[2] *[pencil lead]*	ASTM D3363 Scratch	4H	6H	7H	H	F	8H	6H	H	Report
Indentation Hardness (Durometer) Type A-2	ASTM C 661	86	76	78	88	84	74	80	86	Report

Note(s): 1- indicates that Blistering was assessed by ASTM D714; rating is based on pictorial standards that describe blister size as 10 (no blisters) to 0 (large) and frequency as Dense (D), Medium Dense (MD), Medium (M), and Few (F)

2- indicates that Surface Hardness was assessed by ASTM D3363; hardness scale is as follows: 6B – 5B – 4B – 3B – 2B – B – HB – F – H- 2H – 3H – 4H – 5H – 6H – 7H – 8H – 9H (softest to hardest)

VFI-071-02-01

The test results, opinions, or interpretations are based on the material supplied by the client. This report is for the exclusive use of stated client. No reproduction or facsimile in any form can be made without the client's permission. This report shall not be reproduced except in full without the written approval of this laboratory. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

Physical Properties	Test Method	Results								Requirement
		Volatile Free - VFI-200				Sherwin Williams - AR 425				
		jet fuel	ethanol	gas	diesel	jet fuel	ethanol	gas	diesel	
Chemical Immersion (Free Film Test) 2 specimens; ASTM D412 Die C	ASTM D543									
Unexposed Control	ASTM D412									
Tensile Properties 5 specimens; Die C Test @ 73.4±3.6°F Test Rate = 20in/min ±3%	Strength (psi)	2137				2166				Report
	Elongation (%)	310				378				Report
After 72h Exposure (no temp. gradient)	ASTM D412									
Tensile Properties 5 specimens; Die C Test @ 73.4±3.6°F Test Rate = 20in/min ±3%	Strength[1] (psi)	755	321	362	2079	511	166	204	1159	Report
	Elongation (%)	130	90	85	278	110	55	60	245	Report
After 72h Exposure plus 48h Recovery	ASTM D412									
Tensile Properties 5 specimens; Die C Test @ 73.4±3.6°F Test Rate = 20in/min ±3%	Strength[1] (psi)	2175	1228	1980	2376	1754	1430	1503	1567	Report
	Elongation (%)	328	313	343	318	350	415	408	310	Report

Note(s): 1- indicates that Tensile Strength results in units of psi were based on calculations using initial, unexposed dimensions; adjustment for swelling was not included in calculation.

The test results, opinions, or interpretations are based on the material supplied by the client. This report is for the exclusive use of stated client. No reproduction or facsimile in any form can be made without the client's permission. This report shall not be reproduced except in full without the written approval of this laboratory. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

PRI Construction Materials Technologies LLC 6412 Badger Drive Tampa, FL 33610 Tel: 813-621-5777 Fax: 813-621-5840 e-mail: materialstesting@pricmt.com WebSite: http://www.pri-group.com

Statement of Attestation: The chemical resistance benchmarking study for a secondary containment membrane portrayed herein was completed in accordance with proponent instructions and standard test methods as described. The laboratory test results presented in this report are representative of the materials tested.

Signed:	**Trevor Petzold** **Laboratory Technician**	**Signed:**	**Brad Grzybowski** **Managing Director**
Date:	12/03/2018	**Date:**	12/03/2018

Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	12/03/2018	5	NA

END OF REPORT

The test results, opinions, or interpretations are based on the material supplied by the client. This report is for the exclusive use of stated client. No reproduction or facsimile in any form can be made without the client's permission. This report shall not be reproduced except in full without the written approval of this laboratory. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

PRI Construction Materials Technologies LLC 6412 Badger Drive Tampa, FL 33610 Tel: 813-621-5777 Fax: 813-621-5840 e-mail: materialstesting@pricmt.com WebSite: http://www.pri-group.com

From:	Michael P. Sullivan
To:	Curran, Kimberley
Cc:	"Brad Grzybowski"; estandard@pricmt.com
Subject:	RE: Florida Department of Environmental Protection approval
Date:	Thursday, October 25, 2018 9:48:47 AM
Attachments:	image006.png

Hi Kim,

Thank you very much for the quick response. Yes, please list me as the contact with the email and phone number listed below.

Have a great day.

Mike Sullivan
Technical Director
Volatile Free, Inc
(262) 787-0400
michaels@volatilefree.com

From: Curran, Kimberley [mailto:Kimberley.Curran@dep.state.fl.us]
Sent: Thursday, October 25, 2018 8:39 AM
To: Michael P. Sullivan <michaels@volatilefree.com>
Cc: 'Brad Grzybowski' <bgrzybowski@pricmt.com>; estandard@pricmt.com
Subject: RE: Florida Department of Environmental Protection approval

Mike,

Thank you for your equipment registration submission. I will be waiting on the additional information from PRI and we will move forward with the registration process. Would you like to be the contact if anyone has questions regarding contractor approval by Volatile Free, Inc.? On our Equipment List we do list a contact name and number and that isn't always the person who submits the form, so just checking.

Thank you and I hope you enjoy your vacation!
Kim

Kim Curran
Environmental Consultant
Compliance Assistance Program
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 4560
Tallahassee, Florida 32399-2400
Kimberley.Curran@floridadep.gov
Office: 850.245.8849
Website: Storage Tank Compliance

From: Michael P. Sullivan [mailto:michaels@volatilefree.com]
Sent: Thursday, October 25, 2018 8:47 AM
To: Curran, Kimberley <Kimberley.Curran@dep.state.fl.us>
Cc: 'Brad Grzybowski' <bgrzybowski@pricmt.com>; estandard@pricmt.com
Subject: RE: Florida Department of Environmental Protection approval

Kimberly,

My name is Mike Sullivan. I am the Technical Director at Volatile Free, Inc. Volatile Free applying for the use of one of our products, VFI-200 for use as a secondary containment membrane in concrete storage tanks for gasoline, ethanol, diesel, and jet fuel. We have completed the application, and have attached the Application Instructions, as well as the Product Datasheet and Safety Datasheets for the VFI-200.

We outsourced our testing to PRI in Tampa Florida (copied on this message). They will be submitting the supporting testing information for the application.

I will be on vacation until November 5th, but please let me know if you need more information, or have any questions.

Thanks and have a great day.

Mike Sullivan
Technical Director
Volatile Free, Inc
(262) 787-0400
michaels@volatilefree.com

From: estandard@pricmt.com [mailto:estandard@pricmt.com]
Sent: Wednesday, October 24, 2018 4:17 PM
To: Michael P. Sullivan <michaels@volatilefree.com>
Cc: 'Brad Grzybowski' <bgrzybowski@pricmt.com>
Subject: RE: Florida Department of Environmental Protection approval

Hello Mike,

We did chemical resistance testing but we did not do any UV testing. The thought was to be equivalent to the Sherwin Williams product which is underground. We can do above ground but we should probably do some UV testing.

-Emily Standard

From: Michael P. Sullivan <michaels@volatilefree.com>

Sent: Wednesday, October 24, 2018 3:18 PM
To: estandard@pricmt.com
Cc: 'Brad Grzybowski' <bgrzybowski@pricmt.com>
Subject: RE: Florida Department of Environmental Protection approval

Thanks Emily. Just to double check, do you know if we specified above ground only, or both?

Mike

From: estandard@pricmt.com [mailto:estandard@pricmt.com]
Sent: Wednesday, October 24, 2018 2:05 PM
To: Michael P. Sullivan <michaels@volatilefree.com>
Cc: 'Brad Grzybowski' <bgrzybowski@pricmt.com>
Subject: FW: Florida Department of Environmental Protection approval

Hello Mike,

In the email below there is a link to the Florida DEP page with the registration forms. Go ahead and fill out and submit the forms online. Also be prepared to submit copies of any installation instructions and warranties. We will start preparing the third-party documentation listed on the website under the required forms and we will let you know as soon as they are ready to go.

Thank you,
Emily Standard

From: Curran, Kimberley <Kimberley.Curran@dep.state.fl.us>
Sent: Wednesday, October 24, 2018 1:21 PM
To: estandard@pricmt.com
Subject: RE: Florida Department of Environmental Protection approval

Emily,

Good afternoon thanks for inquiring about the registration process for equipment. This is our website for Storage Tank System Equipment Registration. On that page, you will find all the information regarding the Storage Tank Equipment Registration process. There is the form you will submit, and what information is required to register (the big one is supplying 3rd Party Certification that your equipment will meet the performance requirements as required by Chapter 62-761, Florida Administrative Code (F.A.C.), and/or Chapter 62-762, F.A.C.). If you had a 3rd Party do a comparison of your product and one that is already registered (previously approved), that should suffice. Once you are ready to fill out the form, don't digitally sign the form until you have completed it. This will lock out all the fields above your signature (in case you need to make a change).

My contact information will be here in this email and also on the website.

Thanks,
Kim

Kim Curran

Environmental Consultant
Compliance Assistance Program
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 4560
Tallahassee, Florida 32399-2400
Kimberley.Curran@floridadep.gov
Office: 850.245.8849
Website: Storage Tank Compliance

From: Compton, Elena
Sent: Wednesday, October 24, 2018 10:23 AM
To: estandard@pricmt.com; Curran, Kimberley <Kimberley.Curran@dep.state.fl.us>
Cc: Dougherty, Brian <Brian.Dougherty@dep.state.fl.us>; Burns, Bill <Bill.Burns@dep.state.fl.us>
Subject: RE: Florida Department of Environmental Protection approval

Thank you, Emily, for contacting the Florida Department of Environmental Protection with the described below inquiry.

I'm forwarding your e-mail to Kim Currant to guide you through the Equipment Certification process. Please do not hesitate to contact me again, if you have further questions.

Thank you,
Elena

From: estandard@pricmt.com <estandard@pricmt.com>
Sent: Wednesday, October 24, 2018 9:01 AM
To: Compton, Elena <Elena.Compton@dep.state.fl.us>
Subject: Florida Department of Environmental Protection approval

Hello Elena,

I recently left you a voicemail about a client of ours that wishes to obtain Florida Department of Environmental Protection approval for a polyurea coating used as secondary containment and would love to know the process. I wanted to reach out via email as well just in case it is easier for you to respond via email. There is a very similar product (Sherwin Williams' AR 425; This product is identified as EQ-531) that already has Florida Department of Environmental Protection approval and we have done a head-to-head comparison between it and our product. Please let me know the best way to go about getting approval with this comparative testing or if any other testing is required.

Thank you,

Emily Standard

Project Administrator

PRI Construction Materials Technologies LLC
6412 Badger Drive
Tampa, FL 33610
Ph: 813.621.5777
Fax: 813.621.5840
www.pricmt.com [pricmt.com]
estandard@pricmt.com