

GreenSeal 2.5 HFO - A



1. Identification of Substance:

Product Name: GreenSeal 2.5 HFO Component A
Chemical Family: Water-borne Acrylic Coating
Field of Application: Silicone Coating for Roofing Applications

Company Details:
Green Shield Products
Address:
 4008 Louetta Rd. Suite #464
 Spring, TX 77388

Telephone:
 1-877-GRN-SHLD 24-Hr. Emergency Response:
 CHEMTREC (800) 424-9300
 INTERNATIONAL: +1-(703) 527-3887

2. Hazards Identification

GHS Ratings:

Inhalation Toxicity	Acute Tox. 4	Gases>2500+<=5000ppm, Vapors>10+<=20mg/l, Dusts&mists>1+<=5mg/l
Skin corrosive	2	Reversible adverse effects in dermal tissue, Draize score: >= 2.3 < 4.0 or persistent inflammation
Eye corrosive	2A	Eye irritant: Subcategory 2A, Reversible in 21 days
Respiratory sensitizer	1	Respiratory sensitizer
Skin sensitizer	1	Skin sensitizer
Organ toxin single	3	Transient target organ effects- Narcotic effects- Respiratory tract irritation exposure
Organ toxin repeated exposure	1	Significant toxicity in humans- Reliable, good quality human case studies or epidemiological studies Presumed significant toxicity in humans- Animal studies with significant and/or severe toxic effects relevant to humans at generally low exposure (guidance).

GHS Hazards

H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H372	Causes damage to organs through prolonged or repeated exposure



Energy Efficient Building Product Solutions

4008 Louetta Road, Suite #464 • Spring, TX 77388
 877.GRN.SHLD • www.greenshieldproducts.com



GreenSeal 2.5 HFO - A



GHS Precautions

P260	Do not breathe dust/fume/gas/mist/vapors/spray
P261	Avoid breathing dust/fume/gas/mist/vapors/spray
P264	Wash hands thoroughly after handling
P271	Use only outdoors or in a well-ventilated area
P272	Contaminated work clothing should not be allowed out of the workplace
P280	Wear protective gloves/protective clothing/eye protection/face protection
P285	In case of inadequate ventilation wear respiratory protection
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P314	Get Medical advice/attention if you feel unwell
P321	Specific treatment is urgent (see Section 4 First Aid measures)
P362	Take off contaminated clothing and wash before reuse
P363	Wash contaminated clothing before reuse
P302+P352	IF ON SKIN: Wash with soap and water
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P304+P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P332+P313	If skin irritation occurs: Get medical advice/attention
P333+P313	If skin irritation or a rash occurs: Get medical advice/attention
P337+P313	Get medical advice/attention
P342+P311	Call a POISON CENTER or doctor/physician
P405	Store locked up
P403+P233	Store in a well ventilated place. Keep container tightly closed
P501	Dispose of contents/container in accordance with existing federal, state, and local environmental control laws.

Signal Word: Danger



Acute Health Effects:

Eyes: Severe irritation, tearing, swelling, and possible damage to cornea.

Skin: Irritation, redness, swelling, skin sensitization, rash, scaling, and blistering.

Inhalation: Mucous membrane and respiratory tract irritation, tightness of chest, isocyanate sensitization.

Ingestion: Irritating and corrosive to mouth, stomach, and digestive tract.



Energy Efficient Building Product Solutions

4008 Louetta Road, Suite #464 • Spring, TX 77388
877.GRN.SHLD • www.greenshieldproducts.com



GreenSeal 2.5 HFO - A



Conditions Aggravated by Exposure: Asthma, respiratory disorders, skin

Chronic Health Effects: Isocyanates may cause skin and respiratory sensitivity in some individuals.

Sensitized individuals may react to very low levels diisocyanates below the PEL. Sensitized people who continue to work with diisocyanates may develop symptoms sooner after each exposure. Limited evidence of

3. Composition/information on ingredients:

Chemical Name	CAS number	Weight Concentration %
Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	50.00% - 60.00%
4,4'-Methylenediphenyl diisocyanate	101-68-8	30.00% - 40.00%
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	5873-54-1	1.00% - 5.00%

4. First Aid Measures:

After Inhalation: May cause severe irritation to upper respiratory tract and lungs, respiratory sensitization, decreased lung capacity. Remove from exposure area to fresh air. Administer oxygen or artificial respiration as needed. Obtain medical attention.

After Eye Contact: Rinse opened eye for at least 15 minutes under running water.

Remove contact lenses if present and easy to do so, and continue rinsing. If irritation persists contact physician

After Skin Contact: Remove contaminated clothing. Clean affected area with soap and plenty of water. Call a physician if irritation or rash develops.

After Swallowing: Do not induce vomiting. If conscious, give 1 to 2 cups of milk or water to drink. Consult a physician at once.

Notes to Physician: Treat symptomatically. Following severe exposure the patient should be kept under

5. Firefighting measures

Flash Point: 230 C (446 F)

LEL: N/A UEL: N/A

Upper and Lower Explosive Limits listed if known.

Suitable Extinguishing Agents: Water spray, CO₂, Foam, Dry chemical

Information about Protection against Explosions and Fires: During the incipient stage of a fire, containers should be kept cool by spraying with water (i.e., water suppression system) on the outside of container. Water spray will help prevent containers from overheating. Use cold-water spray to cool fire-exposed containers to minimize risk of rupture. Large fires can be extinguished with high volumes of water, such as from a fire hose applied from a safe distance. Closed containers may rupture when exposed to extreme heat due to build-up of pressure from thermal degradation and/or carbon dioxide generation.

Section 5 pertains to fire-fighting measures and reactivity is addressed in section 10.

Dangerous Products of Decomposition: Oxides of carbon, oxides of nitrogen, isocyanates, and traces of HCN.

Protective Equipment: Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters.



Energy Efficient Building Product Solutions

4008 Louetta Road, Suite #464 • Spring, TX 77388
877.GRN.SHLD • www.greenshieldproducts.com



GreenSeal 2.5 HFO - A



6. Accidental release measures

Person-Related Safety Precautions: Evacuate all non-essential personnel. Avoid contact with skin. Do not breathe aerosols or vapors.

Measures for Environmental Protection: Cover and contain spill with absorbent material. Place waste in open container. Remove to well ventilated area and dilute with ammonia solution (water 90%, concentrated ammonia 8%, detergent 2%). Collect for proper disposal according to local, state, and federal regulations.

7. Handling and Storage

Information for Safe Handling: Do not breathe fumes, vapors or mists. Use only with adequate ventilation. Avoid contact with skin or eyes. Immediately report spills or leaks.

Storage Requirements: Store containers in a dry, well ventilated area. Keep containers tightly closed and prevent moisture contamination. Do not re-seal the container if contamination is suspected. Store between 60oF and 100oF.

Regulatory Requirements: Store according to all local, state, and federal regulations.

8. Exposure Controls and Personal Protection:

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limit
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	Not Established	Not Established	Not Established)
4,4'-Methylenediphenyl diisocyanate 101-68-8	0.005 ppm TWA 0.02 ppm STEL	0.005 ppm TWA (listed under Methylene bisphenyl isocyanate (MDI))	NIOSH: 0.005 ppm TWA (listed under Methylene bisphenyl isocyanate); 0.05 mg/m ³ TWA 0.020 ppm Ceiling (10 min); 0.2 mg/m ³ Ceiling (10 min)
Benzene, 1-isocyanato-2-[(4-isocyanatophen yl)methyl]- 5873-54-1	Not Established	Not Established	Not Established
1,3-Propanediamine, N,N-bis[3-(dimethylamino)pro pyl]-N',N'-dimethyl- 33329-35-0	Not Established	Not Established	Not Established

SAFETY DATA SHEET



Energy Efficient Building Product Solutions

4008 Louetta Road, Suite #464 • Spring, TX 77388
877.GRN.SHLD • www.greenshieldproducts.com



GreenSeal 2.5 HFO - A



Engineering Controls: Use local exhaust ventilation to maintain airborne concentrations below the TLV, especially if heating or spraying. Use only in a well ventilated area to keep vapors below exposure limits. Use local exhaust ventilation if necessary.

General Protective and Hygienic Measures: Usual precautionary measures should be adhered to when handling chemicals.

Personal Protective Equipment:

Respiratory Protection: Do not inhale vapors. Use NIOSH approved respiratory protection if TLV/PEL is exceeded. Do not enter storage area unless adequately ventilated.

Hand Protection: Protective butyl rubber or nitrile rubber gloves.

Eye Protection: Chemical safety goggles.

Body Protection: Impervious protective work clothing. Launder separately.

9. Physical and Chemical Properties:

<p>Appearance: Brown liquid Vapor Pressure: N/A Vapor Density: N/A Specific Gravity: 1.23 Freezing point: N/A Boiling range: 92 - 342°C Evaporation rate: N/A Explosive Limits: N/A Autoignition temperature: 240°C</p>	<p>Odor: Musty Odor threshold: N/A pH: N/A Melting point: N/A Solubility: N/A Flash point: 446°F, 93°C Flammability: N/A Partition coefficient (n-octanol/water): N/A Decomposition temperature: N/A</p>
--	---

10. Stability and Reactivity:

Chemical Incompatible Materials: MDI will react with a wide range of common chemicals. During use of this product in the work environment, protect the product from contamination such as inadvertent contact with water, amines, strong bases and alcohols. For example, allowing water inside an MDI container will lead to the generation of carbon dioxide gas and result in the development of excess pressure if the container is tightly re-sealed. Diisocyanates are not soluble in water and sink to the bottom, but react at the interface to produce carbon dioxide.

Hazardous Polymerization: Not expected to occur under normal conditions.

Dangerous Products of Decomposition: Oxides of carbon, oxides of nitrogen, hydrocarbons, isocyanates, and traces of HCN.



Energy Efficient Building Product Solutions

4008 Louetta Road, Suite #464 • Spring, TX 77388
 877.GRN.SHLD • www.greenshieldproducts.com



GreenSeal 2.5 HFO - A



11. Toxicological Information:

Mixture Toxicity

Inhalation Toxicity LC50: 2mg/L

Component Toxicity

9016-87-9 Isocyanic acid, polymethylenepolyphenylene ester
Dermal LD50: 1 mg/L (Rat) Inhalation LC50: 369 mg/m3 (Rat)

Individual Toxicity Values Listed if Known

Acute Toxicity:

Eyes: Severe irritation, tearing, swelling, and possible damage to cornea.

Skin: Irritation, redness, swelling, skin sensitization, rash, scaling, and blistering.

Inhalation: Mucous membrane and respiratory tract irritation, tightness of chest, isocyanate sensitization.

Ingestion: Irritating and corrosive to mouth, stomach, and digestive tract.

Chronic Effects: Isocyanates may cause skin and respiratory sensitivity in some individuals. Sensitized individuals may react to very low levels diisocyanates below the PEL. Sensitized people who continue to work with diisocyanates may develop symptoms sooner after each exposure. Limited evidence of possible carcinogenic effects.

Routes of Entry: Inhalation, Ingestion, skin contact, eye contact.

Target Organs: Respiratory tract, eyes, skin.

Chemicals with Known or Possible Carcinogenic Effects:**Target Organs:** Eyes, skin, respiratory system, reproductive system.

Chemicals with Known or Possible Carcinogenic Effects:

<u>CAS Number</u>	<u>Description</u>	<u>% Weight</u>	<u>Carcinogen Rating</u>
None			None

12. Ecological Information:

General Information: Information: Based on experience, no adverse effects are to be expected if correct disposal procedures have been followed as indicated in section 13.

Individual component ecotoxicity listed if known.

Component Ecotoxicity

4,4'-Methylenediphenyl diisocyanate 24 Hr LC50 Brachydanio rerio: >500 mg/L
24 Hr EC50 Daphnia magna: >500 mg/L



Energy Efficient Building Product Solutions

4008 Louetta Road, Suite #464 • Spring, TX 77388
877.GRN.SHLD • www.greenshieldproducts.com



GreenSeal 2.5 HFO - A



13. Disposal considerations

Recommendation: Observe local requirements. Dispose of in accordance with local/state/federal regulations.

Empty Container Precautions: Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed and container is empty prior to disposal. Contact the Reusable Industrial Packaging Association (RIPA) at 301-577-3786 to find a drum re-conditioner in North America (www.reusablepackaging.org).

14. Transport Information

DOT Regulated Components:

4,4' Methylene Diphenyl Diisocyanate
Reportable Quantity: 5000 lbs

When in individual containers of less than the substance RQ, this material ships as non-regulated. Containers above RQ ship as:

<u>Agency Proper</u>	<u>Shipping Name</u>	<u>UN Number</u>	<u>Packing Group</u>	<u>Hazard Class</u>
DOT	Environmentally Hazardous Substance, N.O.S. (Contains Diphenylmethane Diisocyanate)	3082	III	9

15. Regulatory Information:

OSHA HAZARD COMMUNICATION STANDARD: This material is classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

SARA 311/312 Hazard Categories: Acute health hazard, chronic health hazard

California Proposition 65

(Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute unless otherwise listed:

Warning: This product contains chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm:

- None

Massachusetts Right To Know List:

4,4'-Methylenediphenyl diisocyanate 101-68-8 30 to 40 %

New Jersey Right To Know List:

Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9 50 to 60 %

Pennsylvania Right To Know List:

4,4'-Methylenediphenyl diisocyanate 101-68-8 30 to 40 %

SARA 302 Extremely Hazardous Substances:

- None



Energy Efficient Building Product Solutions

4008 Louetta Road, Suite #464 • Spring, TX 77388
877.GRN.SHLD • www.greenshieldproducts.com



GreenSeal 2.5 HFO - A



Chemicals subject to SARA 313 Reporting:

4,4'-Methylenediphenyl diisocyanate 101-68-8 30 to 40 % Emissions

Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9 50 to 60 % Emissions

<u>Country</u>	<u>Regulation</u>	<u>All Components Listed</u>
Canada	Canada DSL	Yes
US	Toxic Substances Control Act	Yes

16. Other Information:

Safety Data Sheet issued by Product Safety Department

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Green Shield Products. The data on these sheets relates only to the specific material designated herein. Green Shield Products. assumes no legal responsibility for use or reliance upon this data. It is the user's responsibility to ensure that their activities comply with federal, state, or local laws

Date revised: 2022-02-24

Reviewer Revision 0

Date Prepared: 02/24/2022

SAFETY DATA SHEET



Energy Efficient Building Product Solutions

4008 Louetta Road, Suite #464 • Spring, TX 77388
877.GRN.SHLD • www.greenshieldproducts.com

