



ENVIROFILL TECHNICAL DATA SUMMARY

Envirofill is an acrylic-coated, round sand infused with Microban technology that is used as synthetic turf infill in sports systems.

PHYSICAL PROPERTIES

	Bulk Density	Size Range	Specific Gravity	Mohs Hardness	Sphericity	Roundness	Angle of Repose
Envirofill 12/20 (Green, Tan)	100 lbs/ft ³ (1601 kg/m ³)	>95% retained on 12-20 sieve (1.68mm - 0.841mm)	2.65	7	0.6+	0.6+	30°

Packaging: 3,000lb (1360kg) supersacks. Also available in 50lb (22.7kg) bags, 62 bags per pallet.

100% MANUFACTURED IN THE UNITED STATES WITH KNOWN AND VETTED COMPONENTS.

ENVIRONMENTAL PERFORMANCE*

Heavy Metal Analysis			PAH Review	Carcinogenic Review	Human Health Risk	Flammability	
ASTM F3188 (US Heavy Metal Test)	EN71-3 (European Toy Standard)	CAM17 (California Title 22 Metals)	Polycyclic Aromatic Hydrocarbon Analysis	California Prop 65	California Office of Environmental Health & Safety	Pill Burn	Radiant Panel
PASS	PASS	PASS	NONE DETECTED	CERTIFIED EXEMPT FROM LABELING	PASS	PASS	NFPA CLASSIFICATION: 1

PERFORMANCE

Recommended System Performance Data

Turf: Monofilament / slit film 1.625" | 46oz face weight | 17oz slit, 22oz monofilament, 7oz thatch

Infill: 7.0lbs± Envirofill

Pad: ProPlay 23, Brock SP14+

Performance Data* (as reported by SportsLabs Report No 91900/2062)

	Force Reduction (%)	Vertical Deformation (mm)	Energy Restitution (%)	355A "Flat" Gmax	Critical Fall Height (m)	Rotational Resistance (Nm)	Ball Rebound (m)	Infiltration (in/hr)	Abrasion Index
Score:	63	7.3	33	108	1.3	43	0.93	97	20.3
Desired Range:	57-68	4-11	<35	85-125	≥1.3	27-48	0.6-1.0	≥14	

Test results above were conducted with ProPlay 23 over concrete.

* Formal results for these tests are available upon request.

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 06/02/2015

Reviewed on 11/05/2018

1 Identification

- **Product Identifier**
- **Trade Name:** Envirofill
- **Relevant identified uses of the substance or mixture and uses advised against:**
- **Product Description:** Infill for synthetic / artificial turf
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**
USGreentech, LLC
5076 Wooster Road
Cincinnati, OH 45226
(800) 548-0402 For Product Information
- **Emergency telephone number:** (800) 548-0402



2 Hazard(s) Identification

- **Classification of the substance or mixture:**
The product does not need classification according to OSHA HazCom Standard 29 CFR paragraph (d) of §1910.1200(g) and GHS Rev 03.
- **Additional information:**
COMPOSITION NOTE: This product consists of silicon dioxide coated with an acrylic polymer. Although Envirofill® is composed primarily of Silica Sand (SiO₂), and such sand is potentially a source of respirable dust, the sand particles in Envirofill® are thoroughly encapsulated in a coating which captures all dust and ingredients. Under normal circumstances, this prevents any normal release of silica dust to the workplace. An independent study was conducted by Duke University School of Medicine on this product and determined that this product does not contain hazardous substances when evaluated under ASTM F963.8.2. Further this product should be classified as NOT being toxic, corrosive, skin/eye irritants, or a strong sensitizer as defined in 16 CFR 1500.3(b)(5), and 1500.3(b)(7) – (9) of the Federal Hazardous Substances Act.

HAZARDS DISCLOSURE: This product does not contain known hazardous materials in reportable levels as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200 except as listed above. As defined under Sara 311 and 312, this product does not contain known hazardous materials.

- **Label elements:**
- **GHS label elements:** Non-Regulated Material
- **Hazard pictograms:** Non-Regulated Material
- **Signal word:** Non-Regulated Material
- **Hazard statements:** Non-Regulated Material
- **Unknown acute toxicity:**
2 % of the mixture consists of component(s) of unknown toxicity.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMS-ratings (scale 0 - 4)**
- | | | |
|------------|----|---------------------|
| HEALTH | *0 | Health = *0 |
| FIRE | 0 | Fire = 0 |
| REACTIVITY | 0 | Physical Hazard = 0 |

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- **Hazard(s) not otherwise classified (HNOC):** None known

3 Composition/Information on Ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of substances listed below with non-hazardous additions.

- **Dangerous Components:**

CAS: 14808-60-7 RTECS: VV 7330000	Silicon Dioxide ☠ Carc. 1A, H350; STOT RE 1, H372; ☠ Acute Tox. 4, H332; STOT SE 3, H335; Eye Irrit. 2B, H320	>98%
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- **Additional information:**

COMPOSITION NOTE: This product consists of silicon dioxide coated with an acrylic polymer. Although Envirofill® is composed primarily of Silica Sand (SiO₂), and such sand is potentially a source of respirable dust, the sand particles in Envirofill® are thoroughly encapsulated in a coating which captures all dust and ingredients. Under normal circumstances, this prevents any normal release of silica dust to the workplace. An independent study was conducted by Duke University School of Medicine on this product and determined that this product does not contain hazardous substances when evaluated under ASTM F963.8.2. Further this product should be classified as NOT being toxic, corrosive, skin/eye irritants, or a strong sensitizer as defined in 16 CFR 1500.3(b)(5), and 1500.3(b)(7) – (9) of the Federal Hazardous Substances Act.

4 First-Aid Measures

- **Description of first aid measures**
- **After inhalation:**
This product is not expected to generate dust under normal conditions. If dusts generated by this product are inhaled, remove contaminated individual to fresh air.
If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- **After skin contact:**
Generally the product does not irritate the skin.
If skin irritation occurs, consult a doctor.
- **After eye contact:**
Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.
Could cause general eye irritation.
- **After swallowing:**
Routine use of this product is not expected to cause any situation which could lead to ingestion.
If swallowed and symptoms occur, consult a doctor.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed:** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

* 5 Fire-Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Use any standard agent – choose the one most appropriate for type of surrounding fire (Envirofill itself is not flammable).
- **For safety reasons unsuitable extinguishing agents:** No further relevant information is available.
- **Special hazards arising from the substance or mixture:** No further relevant information available.

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- **Advice for firefighters**
- **Special protective equipment for firefighters:**
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures:** Not required.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**
Sweep up the material.
Ensure adequate ventilation.
Dispose of the collected material according to regulations.
- **Reference to other sections:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and Storage

- **Handling**
- **Precautions for safe handling:**
Avoid breakage of bagged material or spills of bulk material. Material does not have a shelf life.
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** No further relevant information.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** No further relevant information.
- **Specific end use(s):** Artificial Turf Owners/Suppliers

8 Exposure Controls/Personal Protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters:**

Components with occupational exposure limits:

14808-60-7 Silicon Dioxide

PEL	see Quartz listing
REL	Long-term value: 0.05* mg/m ³ *respirable dust; See Pocket Guide App. A
TLV	Long-term value: 0.025* mg/m ³ *as respirable fraction

- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.
- **Exposure controls:**
- **Personal protective equipment**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.

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Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

- **Breathing equipment:** Not required.
- **Protection of hands:** Not required.
- **Eye protection:**



Safety glasses

* 9 Physical and Chemical Properties

• Information on basic physical and chemical properties

• General Information

• Appearance:

Form:

Granulate

Color:

Green, Tan, Red, Black

• Odour:

Odorless

• Odor threshold:

Not determined.

• pH-value:

Not applicable.

• Change in condition

Melting point/Melting range:

1713 °C (3,115.4 °F)

Boiling point/Boiling range:

2230 °C (4,046 °F)

• Flash point:

None

• Flammability (solid, gaseous):

Product is not flammable.

• Decomposition temperature:

Not determined.

• Auto igniting:

Product is not self-igniting.

• Danger of explosion:

Product does not present an explosion hazard.

• Explosion limits:

Lower:

Not determined.

Upper:

Not determined.

• Vapor pressure @ 1732 °C (3,149.6 °F):

13.5 hPa (10.1 mm Hg)

• Density @ 20 °C (68 °F):

2.9-3.1 g/cm³ (24.2005-25.8695 lbs/gal)

• Bulk density:

100 (lbs per cu ft)

• Relative density:

Not determined.

• Vapor density:

Not applicable.

• Evaporation rate:

Not applicable.

• Solubility in / Miscibility with:

Water:

Insoluble.

• Partition coefficient (n-octanol/water):

Not determined.

• Viscosity:

Dynamic:

Not applicable.

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Trade Name: Envirofill

- Kinematic:** Not applicable.
- **Solvent content:**
 - Organic solvents:** 0.0 %
 - Solids content:** 100.0 %
- **Other information:** No further relevant information available.

10 Stability and Reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** Extreme temperatures above 870°C.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological Information

- **Information on toxicological effects:**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

14808-60-7 Silicon Dioxide

Inhalative	LC50/96 hours	1033 mg/l (Trout)
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- **Primary irritant effect:**
- **On the skin:** No irritating effect.
- **On the eye:** Irritating effect. Causes serious eye irritation.
- **Additional toxicological information:** The product shows the following dangers according to internally approved calculation methods for preparations: Irritant
A component of this product is found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, or CAL/OSHA but because the product is encapsulated in a polymer coating and having a larger particle size it should therefore not be considered to be, or suspected to be a carcinogenic agent by these agencies.
- **Carcinogenic categories:**
- **IARC (International Agency for Research on Cancer):**
 - Group 1 - Carcinogenic to humans
 - Group 2A - Probably carcinogenic to humans
 - Group 2B - Possibly carcinogenic to humans
 - Group 3 - Not classifiable as to its carcinogenicity to humans
 - Group 4 - Probably not carcinogenic to humans

14808-60-7	Silicon Dioxide	1
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- **NTP (National Toxicology Program):**

14808-60-7	Silicon Dioxide	K
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Trade Name: **Envirofill**

· **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

12 Ecological Information

· **Toxicity:**

· **Aquatic toxicity:**

14808-60-7 Silicon Dioxide

EC50 218 mg/l (Green algae)

- **Persistence and degradability:** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water.
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

13 Disposal Considerations

- **Waste treatment methods**
- **Recommendation:** Dispose with household trash.
- **Uncleaned packaging**
- **Recommendation:** Dispose with household trash.

14 Transport Information

- **UN-Number:**
- **DOT, ADR/ADN, ADN, IMDG, IATA** Non-Regulated Material
- **UN proper shipping name:**
- **DOT, ADR/ADN, ADN, IMDG, IATA** Non-Regulated Material
- **Transport hazard class(es):**
- **DOT, ADR/ADN, ADN, IMDG, IATA**
- **Class:** Non-Regulated Material
- **Packing group:**
- **DOT, ADR/ADN, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:** Not applicable.
- **Special precautions for user:** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.
- **UN "Model Regulation":** Non-Regulated Material

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15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**

- **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

- **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

- **TSCA (Toxic Substances Control Act):**

14808-60-7 Silicon Dioxide

471-34-1 Calcium Carbonate

- **California Proposition 65:**

- **Chemicals known to cause cancer:**

14808-60-7 Silicon Dioxide

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

- **Carcinogenic categories:**

- **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

- **TLV (Threshold Limit Value established by ACGIH):**

14808-60-7 Silicon Dioxide

A2

- **NIOSH-Ca (National Institute for Occupational Safety and Health):**

14808-60-7 Silicon Dioxide

- **GHS label elements:** Non-Regulated Material

- **Hazard pictograms:** Non-Regulated Material

- **Signal word:** Non-Regulated Material

- **Hazard statements:** Non-Regulated Material

- **National regulations:**

None of the ingredients are listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

- **Date of preparation / last revision:** 11/05/2018 / 6

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• **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety & Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B
Carc. 1A: Carcinogenicity – Category 1A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

• *** Data compared to the previous version altered.**

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