1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

HM-20
HM-30
HM-60

1.1 Product Identifier

Product Names: Carbon Fiber: uni-directional carbon fiber

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

Relevant identified use(s): Reinforcement fiber for manufactured polymer goods.

1.3 Details of the supplier of the safety data sheet

Manufacturer: Polymer Anchoring Systems, Inc/Horse Construction 10190 Katy Freeway Suite 352, Houston TX 77043, United States

1.4 Emergency telephone number

Manufacturer: 713-351-1955 Fax

2. HAZARD IDENTIFICATION

2.1 Classification of the Substance or Mixture

This product is not classified as hazardous or flammable.

Preparation classification: None known

2.2 Label Elements

No special labeling

2.3 Other Hazards

Physio-chemical hazards: In the supplied form the product is not explosive, the build-up of fines and dust can lead to a risk of dust explosions.

Eyes: Dust may cause temporary irritation

Skin: Dust may cause mild irritation or allergic skin reactions

Inhalation: Dust may cause mild irritation

Other hazards: This product and the dust from the product are electrically conductive

3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

3.1 Chemical nature: Carbon, fibers

3.2 Other substances with occupational exposure limits:

CAS	Weight %	Name
308063-67-4 (7440-44-0)	90%-99%	Carbon Fiber (carbon) polyacryonitrile(PAN)-based

4. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: Move to fresh air. Get medical attention immediately if symptoms occur.

Skin: If skin irritation occurs, wash thoroughly with soap and water.

Eye: Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists, consult a specialist.

4.2 Notes to physician

Treat symptomatically.

4.3 Protection of first-aiders

Use personal protective equipment. Do not breathe dust.

4.4 Ingestion

Not a probable route. However, in case of gastro-intestinal distress following accidental ingestion, call a physician.

5. FIRE FIGHTING MEASURES

5.1 Flammable properties

Not flammable.

5.2 Flash point

Not applicable.

5.3 Extinguishing media

Suitable Extinguishing Media: Water spray, Foam, CO2, Chemical Powder

5.4 Hazardous combustion products

Carbon oxides, Nitrogen oxides (NO x), Volatile organic compounds, Hydrogen cyanide.

5.5 Explosion data

Sensitivity to Mechanical Impact: None

Sensitivity to Static Discharge: airborne fibers are electrically conductive

5.6 Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions: Do not breathe dust.

Emergency Procedures: No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended. Use normal clean up procedures.

6.2 Environmental precautions

Should not be released into the environment.

6.3 Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

Avoid dust formation. Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Handling: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Avoid dust formation.

7.2 Conditions for safe storage, including any incompatibilities

Airborne particles and filaments should be stored to minimize skin contact and electrical shorts. Do not store with oxidizing agents.

7.3 STORAGE TEMPERATURE (min./max.): 0°F (4°C) / 120°F (49°C)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure guidelines

Exposure Limits: OSHA and ACGIH (USA) have not established air contamination for carbon fibers. This could be a nuisance dust. OSHA has set a standard for nuisance dust to 5 mg/m^3 (respirable fraction) and 15 mg/m^3 (total dust). ACGIH has established an exposure value of 3 mg/m^3 (respirable fraction) and 10 mg/m^3 (total).

8.2 Exposure controls

Engineering Measures/Controls: Exhaust for airborne fiber removal

Personal Protective Equipment:

Respiratory: In case of insufficient ventilation wear suitable respiratory equipment (filter type P2). This is required in cases where maximum concentration of 1 RFP/ml of air is exceeded.

Eye/Face: Safety glasses

Hand: Protective gloves

Skin/Body: Disposable protective garments to eliminate potential skin irritation.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

Thermal Hazards: None

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state @20°C	Solid
Appearance	Black Fiber
Color	Black
Odor	Odorless
pH	N/A
Melting/freezing point	~3500 C
Boiling point/boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not applicable
Flammability Limits in Air	Not applicable
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	~1.8 Negligible
Solubility	Negligible Not
Solubility in other solvents	applicable Not
Partition coefficient (n-octanol/water)	applicable
Auto-ignition temperature	
Decomposition temperature	>650 °C
Viscosity, dynamic	Not applicable
Explosive properties	Potential for weak explosion Class St 1 / Kst (bar – m/
Oxidizing Properties	s) Not relevant

10. STABILITY AND REACTIVITY

10.1 Chemical stability

Stable under normal conditions.

10.2 Possibility of hazardous reactions

Can react with strong oxidizing agents.

10.3 Conditions to avoid

See section 7.

10.4 Hazardous decomposition products

Products of combustion and decomposition will depend on other materials present in the fire and the fire conditions.

Burning will produce CO2, CO, and minute amounts of N2, HCN and H2O.

11. TOXICOLOGICAL AND HAZARD ENDPOINT INFORMATION

11.1 Information on toxicological effects

Acute toxicity: No data available

Skin Corrosion/irritation: No data available

Serious eye damage/irritation: No data available

Respiratory or skin sensitization: No data available

Germ cell mutagenicity: No data available

Carcinogenicity: No data available

Reproductive toxicity: No data available

STOT-single exposure: No data available

STOT-repeated exposure: No data available

Aspiration hazard: Not an inhalation hazard, filament diameter > 3um / non-respirable (IARC)

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in Soil

No data available

12.5 Results of PBT and NPvB assessment

No data available

12.6 Other adverse effects

Ecological data not available

13. DISPOSAL CONSIDERATIONS

13.1 Waste disposal methods

Waste materials must be disposed of in accordance with the Directive on waste 2008/98/EC and any other applicable national or local regulations.

14. TRANSPORTATION INFORMATION

14.1 UN Shipping Name

Not dangerous goods ADR/RID land, AND (inland navigation), IMGD (marine)

SHIPPING NAME:..... Not applicable.
TECHNICAL SHIPPING NAME:..... Not applicable.
HAZARD CLASS:..... Not applicable.
PACKING GROUP:..... Not applicable.

CANADA TDG
U.N./N.A. NUMBER:..... Not regulated.
SHIPPING NAME:..... Not applicable.
TECHNICAL SHIPPING NAME:..... Not applicable.
HAZARD CLASS:..... Not applicable.
PACKING GROUP:..... Not applicable.

15. REGULATORY INFORMATION

COUNTRY	INVENTORY LIST	STATUS
United States	TSCA	All ingredients are listed or otherwise compliant.
Europe	EINECS or ELINCS	All ingredients are listed or otherwise compliant.
Canada	CEPA (DSL/NDSL)	All ingredients are listed or otherwise compliant.
Australia	AICS	All ingredients are listed or otherwise compliant.
Japan	ENCS	All ingredients are listed or otherwise compliant.
South Korea	KECI	All ingredients are listed or otherwise compliant.
China	IECSC	All ingredients are listed or otherwise compliant.
Philippines	PICCS	All ingredients are listed or otherwise compliant.

15.1 Safety, health and environmental regulations/legislation specific for substance or mixture

TSCA Status: Exempt – satisfies 'article' definition under 40 CFR 704.3

15.2 Chemical safety assessment

Has not been carried out

16. OTHER INFORMATION

Information in this document is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Polymer Anchoring Systems, Inc. The data on this sheet is related only to the specific material designated herein. Polymer Anchoring Systems, Inc. assumes no legal responsibility for use or reliance upon these data.

HM-20
HM-30
HM-60

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