Material Safety Data Sheet (MSDS)

1 - PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME ALTURNAMATS™ POLYETHYLENE MATS
POLYETHYLENE MATS PRODUCTFAMILY:
POLYETHYLENE
DESCRIPTION: ODORLESS, BLACK, OR WHITE, POLYMERIC MATERIAL

- **TRADE NAMES/SYNONYMS:**
  ETHYLENE HOMOPOLYMER
  HIGH DENSITY POLYETHYLENE (HDPE)
  SEMICRYSTALLINE POLYETHYLENE
  THERMOPLASTIC RESIN

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2 - COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS NUMBER	PERCENTAGE BY WEIGHT	OSHAPEL	ACGIBTLV
High Density Ethylene Homopolymer	9002-88-4	98-99	(PNOR) 15 mg/m³ Total 5mg/m³RESP	(PNOC) 1Omg/ m³ Total 3mg/m³RESP
Carbon Black (Colorant)	1333-86-4	0-1	3.5 mg/m³	3.5mg/m³
Ultraviolet Light Absorber	NA	0-1	NA	NA

NOTE: 1) The above details encompass the composition range for this series of product grades.
2) All exposure limits are 8-hour TWAs unless otherwise specified.
3) Abbreviations/Acronyms are defined in Section 16.
4) OSHA PEL - Mandatory regulatory exposure standard.
5)ACG1H TLV - Consensus exposure guideline, hot a regulatory requirement.
6) NA- Not applicable to low content, polymer-encapsulated material.

3 - HAZARDS IDENTIFICATION

GENERAL HAZARD STATEMENT: Solid bulk products prepared from this material are classified as "articles" and are exempt from OSHA MSDS requirements. This product in its normal, as manufactured physical state does not represent a health hazard. It is recognized that us.er processing can alter the inherent hazardous properties of this product. Airborne dust characterized by OSHA as "Nuisance Dust", or Particulate Not Otherwise Regulated (PNOR), may be generated by physical/mechanical means such as grinding, sawing, drilling, polishing, and machining. Toxic smoke/fumes/aerosols may be emitted at high temperature melt processing, and under combustion conditions. Melt processing presents a potential burn hazard. This document is directed toward airborne particulate that may be generated during processing of this product.

HAZARD OVERVIEW: Potentially hazardous airborne dust and fumes may be generated under certain handling and processing conditions. Processing should be performed in well-ventilated areas. High airborne dust/fume/aerosol concentrations should be addressed by a Certified Industrial Hygienist or other competent professional. If dust/fume concentrations cannot be effectively limited by procedural improvements or ventilation and other engineering controls, respiratory protection and other PPE must be utilized.

NFPA DESIGNATION/SOLID PRODUCT: HEALTH 1 FLAMMABILITY 1 REACTMTY 0

The above designation applies to solid product. Health risk and flammability are dependent upon particle size and dust concentration.

PRIMARY ROUTE OF ENTRY: Inhalation of airborne dust.

HMIS KEY: 0 = Minimal Hazard; **1** = Slight Hazard; 2 = Moderate Hazard; 3 = Serious Hazard; 4 = Severe Hazard

Acute Effects of Overexposure:

This product in normal solid form does not present an exposure hazard. Airborne dust associated with mechanical processing, and aerosols resulting from high temperature melt processing, may result in a hazardous condition.

INHALATION:

Acute exposures to high concentrations of airborne dust and high temperature aerosols may result in respiratory irritation. Recurring inhalation at high dust levels from any source may result in respiratory system damage.

EYE:

Direct eye contact with airborne dust may cause eye irritation, redness, itching associated with mechanical abrasion.

SKIN:

Polyethylene is biologically inert and is not a skin irritant.

INGESTION:

Solid product as manufactured is biologically inert and does not represent an ingestion hazard. Ingestion of large quantities of this product may cause gastrointestinal irritation and pain, nausea and/or vomiting. Ingestion of massive quantities of dust is extremely unlikely under typical processing conditions.

Chronic Effects of Overexposure:

REPEATED EXCESSIVE EXPOSURES MAY CAUSE:

Eye inflammation, irritation of mucous membranes

CARCINOGENICITY:

This product in solid form has not been identified as a known or suspected carcinogen. Toxic characteristics of individual components are presented in Section 11.

SYNERGISTIC MATERIALS:

None known

SIGNS AND SYMPTOMS OF OVEREXPOSURE:

Exposure to high temperature aerosol emissions may cause irritation of skin and eyes, coughing, respiratory irritation.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Pre-existing allergies, respiratory disorders, and skin conditions may be aggravated by exposure to airborne dust and fumes. Individuals with prior history of emphysema, asthma, bronchitis, dermatitis, or other pulmonary and skin disorders may exhibit sensitivity to dust and aerosols/fumes.

4 - FIRST AID MEASURES

INHALATION: If overexposure to dust and high-temperature aerosols occurs, remove victim from the adverse environment to fresh air. If symptoms of pulmonary involvement persist (coughing, wheezing, shortness of breath), seek medical attention. If breathing has stopped, certified individuals should perform CPR. Keep affected person warm and at rest.

EYE: Immediately flush with large amounts of cold water for several minutes. If persistent eye irritation occurs, seek medical attention.

SKIN: If molten material gets on skin, wash contaminated area with soap and water.

INGESTION: Material is not considered to be an ingestion hazard.

5 - FIRE FIGHTING MEASURES

FLASH POINT: *NIA*

FLAMMABLE LIMITS: *NIA*

AUTOIGNITION TEMPERATURE: *NIA*

GENERAL FIRE HAZARD: Combustible Hydrocarbon

FLAMMABILITY CLASSIFICATION: Solid, as-manufactured product: Flammable in the presence of a high ignition temperature source. Finely divided airborne particles at extremely high concentration may ignite in contact with a high energy spark. Fine dust accumulations may burn readily.

EXTINGUISIDNG METHOD: Water, Dry Chemical, Foam, Carbon Dioxide

FIRE FIGHTING EQUIPMENT: Very small fires may be extinguished quickly with a hand-held extinguisher. Positive pressure SCBA and structural firefighter's protective clothing should be used for fighting large fires. Note: Extremely dangerous conditions caused by large indoor fires are oxygen deficiency and carbon monoxide. The combined effects of limited oxygen plus carbon monoxide have resulted in many firefighter deaths.

UNUSUAL FIRE OR EXPLOSION HAZARDS: Solid formed product does not constitute an explosion hazard. Extremely high-airborne concentrations of finely divided particles may present an explosion hazard. Fire and explosion are extremely rare. Toxic, irritating combustion/decomposition products may be evolved at high temperature. Combustion may result in oxygen deficiency and of emissions of carbon monoxide and other toxic combustion products.

EXPLOSION DATA: *Sensitivity/Mechanical Impact: NIA*

SENSITIVITY/STATIC DISCHARGE: Very high airborne dust concentrations may be ignited by high energy static sparking.

HAZARDOUS COMBUSTION PRODUCTS: Combustion may result in oxygen deficiency and may generate carbon monoxide and toxic fumes.

6 -ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN **CASE MATERIAL IS RELEASED:** The following precautions apply to material spills:

Transfer spilled material into an appropriate ·container for disposal or recycling.

Appropriate PPB should be worn during cleanup if exposure limits could possibly be exceeded *(see SECTION 8, EXPOSURE CONTROLS/ PERSONAL PROTECTION).*

Comply with federal, state, and local regulations regarding reporting of spills and waste disposal.

Spilled product should be reclaimed and recycled to the extent feasible.

7 - HANDLING AND STORAGE

HANDLING: Avoid dust/fume generation and breathing of airborne dust, fume, and aerosols. If excessive airborne dust/fumes are generated during handling, apply exposure control measures noted in Section 8.

STORAGE: Store indoors in a dry, secure area away from high temperature ignition sources and incompatible materials *(see SECTION 10, STABILITY AND REACTIVITY).* Maintain good housekeeping practices to prevent excessive dust accumulation.

8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: If airborne dust or high temperature fume/aerosols are generated, provide general dilution ventilation and/or local exhaust ventilation sufficient to maintain personal exposures below the OSHA PEL.

RESPIRATORY: When engineering, administrative or process controls cannot maintain exposures below OSHA permissible limits, use an appropriate NIOSH approved respirator. If respiratory protection is required, all requirements as set forth in 29 CFR 1910.134 (1998 revision) must be met. A Certified Industrial Hygienist or other competent health and safety professional should be consulted for respirator selection, fit testing, and training.

GLOVES: Suitable for effective grip of material and protection of hands against direct skin contact with hot molten material and sharp edges.

EYE: Safety glasses, goggles or face shield when there is a reasonable probability of projectiles or high airborne particulate concentration.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Adequate footwear (safety shoes if necessary) and clothing that protects skin from prolonged or repeated contact with dust/fumes/aerosols.

9 - PHYSICAL, CHEMICAL, ELECTRICAL, THERMAL PROPERTIES

Boiling Point Estimate: Non-volatile; decomposes at temperature below boiling point

Vapor Pressure (mm Hg, @68°F): *NIA* (Non-Volatile)

Vapor Density (AIR= 1): *NIA* (Non-Volatile)

Melting Point (ASTM D3418-08): 268-273°F; 131-134°C

Specific Gravity (H_20 = 1): 0.92-0.97

Evaporation Rate: *NIA* (non-volatile)

Solubility in water: Insoluble

pH: *NIA* (not water soluble)

Appearance and Odor: Odorless, white/opaque or colored solid.

Flash Point/Autoignition Temperature ASTM E136 (Estimated Minimum): 649°F; 343°C

Dielectric Strength: 393-424 volts/mil

Surface Resistance (ASTM D257-07): >6.77 E+l3 ohms

Surface Resistivity (ASTM D257-07): >3.55 E+13 ohms/cm²

Volume Resistance (ASTM D257-07): >l .00E+14 ohms

Volume Resistivity (ASTM D257 07): >6.12 E+15 ohm-cm

10 - STABILITY AND REACTIVITY

STABILITY: Stable under normal temperature and pressure conditions.

CONDITIONS TO AVOID: Strong Oxidizers.

INCOMPATIBLE MATERIALS: Strong Oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Product will not decompose spontaneously. Thermal decomposition may occur at temperatures above 649°F, 343°C. Toxic fume emissions may occur during melt-welding, melt-cutting or other high-temperature thermal treatment. May react with oxygen at high temperature, potentially resulting in oxygen deficiency.

HAZARDOUS POLYMERIZATION: Will not occur.

11-TOXICOLOGICAL INFORMATION

High Density Polyethylene: This product in bulk form is biologically inert and is not hazardous as defined in OSHA CFR1910.1200.

Colorants and stabilizers are encapsulated within the polymer and are at sufficiently low levels so as not to present a health risk.

Physical/Chemical hazards associated with airborne dust, fume, aerosols, decomposition products, combustion products and hot/molten product are addressed in appropriate sections throughout this document.

12 - ECOLOGICAL INFORMATION

Material is stable and essentially insoluble in water. The solid formed product will not readily migrate into soil and groundwater and does not present an ecological hazard. Finely divided particles may present an airborne dust and environmental-ecological hazard. This material is not biodegradable but may slowly degrade under prolonged environmental exposure to atmospheric oxygen and ultraviolet light. HDPE is slightly less dense than water and will float, protruding marginally above the water surface.

EPA requires a permit to allow discharge of polyethene in storm water runoff

13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Solid formed product would not be classified as hazardous waste. Potential hazard level increases with decreasing particle size. Waste should be classified by a competent environmental professional and disposed, processed, or recycled in accordance with federal, state and local regulations. Reclamation and recycling of waste material is recommended.

14 - TRANSPORT INFORMATION

HAZARDOUS MATERIALS DESCRIPTION/PROPER SHIPPING NAME: N/A

HAZARD CLASS: N/A

LABEL REQUIRED: *N/*A - No special labeling is required for the solid product as manufactured. Some transportation guidelines may classify finely divided metallic powders as "flammable solid." Appropriate labeling placarding and documentation must accompany shipment of any material that is subject to labeling requirements.

PACKING GROUP: N/A

15 - REGULATORY INFORMATION

SARA TITLE III **HAZARD CATEGORIZATION:** Total composition has not been categorized.

SARA TITLE III **SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHSs):** No components are listed as extremely hazardous substances.

SARA TILE III **SECTION 313 REPORTABLE SUBSTANCES:** None

CERCLA HAZARDOUS SUBSTANCES: None

16 - OTHER INFORMATION

ABBREVIATIONS/ACRONYMS:

Following are some abbreviations and acronyms that may appear on MSDSs:

ACGIH	-American Conference of Governmental Industrial Hygienists
AL	- Action Level
ANSI	- American National Standards Institute
ASTM	- American Society for Testing of Materials
C	- Ceiling Concentration (OSHA)-not to be exceeded
CAS	- Chemical Abstracts Service
CEIL	- Ceiling Limit (OSHA) - Exposure Limit not to be exceeded
CERCLA	- Comprehensive Environmental Response, Compensation and Liability Act
CFR	- Code of Federal Regulations
CPR	- Cardiopulmonary Resuscitation
DOT	- US Department of Transportation
EPA	- Environmental Protection Agency
EST	- Eastern Standard Time
HEPA	-High Efficiency Particle Arrestor (Filter)
HM.IS	- Hazardous Materials Identification System
IARC	- International Agency for Research on Cancer
mg/m3	- milligrams per cubic meter of air
mg/kg	-milligrams per kilogram (=parts per million by weight)
mppcf	- million particles per cubic foot
MSDS	- Material Safety Data Sheet
MSHA	- Mine Safety and Health Administration
NIA	- Not Applicable
NFPA	- National Fire Protection Association
NIA	-No Information Available
NIF	-No Information Found
NIOSH	-National Institute for Occupational Safety and Health
NTP	- National Toxicology Program
OSHA	- Occupational Safety and Health Administration
PEL	- Permissible Exposure Limit
pH	-Negative Logarithm of Hydrogen Ion Concentration
PNOR	- Particulate Not Otherwise Regulated
PNOC	- Particulate Not Otherwise Classified
POTW	- Publicly Owned Treatment Works
PPE	- Personal Protective Equipment
ppm	- parts per million
RCRA	-Resource Conservation and Recovery Act
resp	- respirable
SARA	-Superfund Amendments and Reauthorization Act
SCBA	- Self-contained Breathing Apparatus
STEL	- Short-term Exposure Limit
TLV	- Threshold Limit Value
TWA	- Time-weighted Average
µg/m3	- Micrograms per cubic meter of air
<	-Less than
>	- Greater than

DISCLAIMER:

Details presented in this MSDS were derived from literature sources and regulatory documents believed to be accurate and authoritative. The purpose of this MSDS is to serve as a general guide to users of this product. It is the user's responsibility to define acceptability of this product for their application, to ensure safe usage of this product, and to comply with all applicable federal, state and local regulations. The user must satisfy requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and any other applicable occupational health and environmental regulations. This MSDS is not intended as a total regulatory compliance document, nor should it be construed as a license or a recommendation to violate any law or infringe on any patent.

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