SDS - HDPE PipeGrade

SECTION 1: IDENTIFICATION

Product Name: HDPE PipeGrade
Product Number: HPG-[NUMBERCODE][e.g., NUMBERCODE = COLOR, SURFACE, GAGE, WIDTH-LENGTH]
Physical State: Solid
Color: Natural processed color is translucent to opaque white (Colorants can be added)
Odor: Faint, mild hydrocarbon odor.
Type of Use: Building Materials, Signs, and Fabricated Polyethylene Products
FDA Status: Complies with FDA Regulations 21 CFR 177.1520 Sections 2.1 and 2.2
Company Business / Emergency Contact
A&C Plastics, Inc.
6135 Northdale St. Houston, TX 77087
www.acplastics.com

SECTION 2: HAZARD(S) IDENTIFICATION

Classification of Hazards
While in normal usage form, this material does not meet or exceed requirements to be classified as a hazardous chemical in accordance with the GHS aligned OSHA Hazardous Communication Standard 29CFR1910.1200 Appendix A, and Appendix B. However, when subjected to processing methods that increase the material temperature, or result in production of material dusts, certain precautions become necessary.
Signal Word and Precautionary Statement (Non-mandatory)
CAUTION!
Product is a clear to white, non-toxic solid sheet material having minimal odor. Dusts and heat-released air emissions may be irritating to the eyes, skin, and respiratory system. Under fire conditions, product will readily burn and emit a heavy, irritating smoke. Contact with molten material may cause serious thermal bums.
Identification Symbols or Labels
Not Applicable
Potential Health Effects

Eyes: Contact of powder or fines with eye may cause mechanical irritation. Contact with hot or molten material may cause severe injury, including possible blindness.
Skin: Contact of powder or fines with skin may cause mild to more serious irritation that is increased by mechanical rubbing or if skin is dry. Contact with hot or molten material may cause severe thermal bums.
Ingestion: Ingestion of this product is unlikely. However, ingestion of product may produce mild gastrointestinal irritation and disturbances.
Inhalation: Inhalation of fine particles may cause respiratory irritation. Fumes produced while thermal processing may cause irritation, pulmonary edema and a possible asthma-like response.
Environmental Hazards: Polyethylene is an essentially biologically inert solid and considered non-toxic. It is stable (does not decompose) in landfills or in aquatic systems.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name: 1-Butene, polymer with ethene, or 1-Hexene, polymer with ethene. (Ethene and ethylene are interchangeable.)
Common Name: High Density Polyethylene, or Polyethylene Copolymer
Synonyms: HDPE Butene Sheet; HDPE Copolymer; Ethylene/Hexene Copolymer Sheet, Ethylene/Octene Copolymer

Component	Percent by Wt.	CAS#
Polyethylene	>=99	CAS# 9002-88-4
Additives*	0-1	N/A

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS Cont.

Additional Information

*Other chemical additives including antioxidants, UV stabilizers, processing aids and slip agents may be formulated into various polyethylene resin grades in a total concentration of less than 1% wt. /wt.
Trade Secret(s) – Compositions given are typical values not specifications. Identity of Resin Manufacturers, Additive Component
Manufacturers and exact percentage of blends are proprietary information.

SECTION 4: FIRST AID MEASURES

Eyes: Remove contact lenses, if it can be done safely. Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention if symptoms develop or persist.
Skin: Remove dusty or contaminated clothing and shoes. For skin contact, wash affected area with soap and water. Seek medical attention if symptoms develop or persist. In case of contact with molten product, cool rapidly with water and seek immediate medical attention. Do not attempt to remove molten product, or molten product that has cooled, from skin without medical assistance.
Inhalation: Move affected individual to non-contaminated air. Loosen tight clothing such as a collar, tie, belt or waistband to facilitate breathing. Seek immediate medical attention if the individual is not breathing, is unconscious or if any other symptoms persist. Inhalation of smoke following a fire may result in delayed pulmonary edema; seek immediate medical attention.
Ingestion: Material is not expected to be absorbed from the gastrointestinal tract. DO NOT INDUCE VOMITING. Loosen tight clothing such as a collar, tie, belt or waistband. Seek immediate medical attention.
Notes to Physician: After adequate first aid, no further treatment is necessary, unless symptoms reappear. Burns should be treated as thermal burns. Molten resin will come off as healing occurs; therefore, immediate removal from the skin is not necessary. Treatment should be directed at the control of symptoms and the clinical condition of the patient. Ingested material should pass through the digestive system without injury.

SECTION 5: FIRE FIGHTING MEASURES

Extinguishing Media
Suitable: Use water fog, or water spray. Small fires may use dry chemical or carbon dioxide or foam.
Un-suitable: Avoid Strong Oxidizing agents. Avoid high pressure, direct water stream that may spread molten or burning resins.
General Fire Hazards: Solid resins support combustion but do not meet combustible definition. Under fire conditions, product will readily burn and emit a heavy, irritating black smoke. A high concentration of airborne powders or dust may form an explosive mixture with air.
Explosion Hazards: Dust particles may form an explosive mixture with air. Risk of dust-air explosion is increased if flammable vapors are also present. Dust may accumulate hazardous static charge.
Hazardous Combustion Products: At temperatures above 300 C, polyethylene may emit various oligomers, waxes and oxygenated hydrocarbons as well as carbon dioxide, carbon monoxide and small amounts of other organic vapors (e.g. aldehydes, acrolein). Inhalation of these decomposition products may be hazardous.
Fire Fighting Equipment/Instructions: (Use ERG Guide #133) Position upwind. Keep unnecessary personnel away. Move containers from fire area if you can do so without risk. Fight fire from maximum distance or use unmanned holders or monitor nozzles. Fire fighters should wear full-face, self-contained breathing apparatus and thermal protective clothing. Avoid inhaling any smoke and combustion materials. Remove and clean or destroy any contaminated clothing. Cool containers with flooding quantities of water until well after the fire is out. Control runoff waters to prevent entry into sewers, drains, underground or confined spaces and waterways.

SECTION 6: ACCIDENTAL RELEASE

Personal Precautions / Protective Measures:
Slipping Hazard, avoid standing or walking on product, or product debris. For product debris: Do not use compressed air to sweep debris. Eliminate sources of ignition. (No smoking, flares, sparks or flames in immediate area). Dissipate static electricity during transfer or processing by use of proper electrical grounding and bonding methods.
Equipment and Emergency Procedures: (Use ERG Guide #133 in event of fire) For debris spill, isolate area for at least 25 meters (75 feet) in all directions, if no fire exists.
In case of Fire: Keep unnecessary personnel away and notify emergency and firefighting personnel. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. Stay upwind from fire.

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Environmental Precautions: Prevent entry of small debris into ditches, sewers, and waterways. Plastic pellets, and debris are defined by the UA EPA under the Clean Water Act (40CFR 122.26) as a "Significant Material", which requires any industrial plant that may expose pellets to storm water to secure a storm water permit. Pellets or debris found in storm water runoff are subject to EPA regulations with the potential for substantial fines and penalties. Use appropriate tools to put the spilled solid in an appropriate disposal or recovery container. Reuse or recycle where possible.
Methods and Materials for Containment and Cleaning Up Spills:
Wear appropriate protective equipment and clothing during cleanup. Vacuum or sweep material into container, do not use compressed air to sweep debris material.
Other Information: Risk of dust-air explosion is increased if flammable vapors are also present.

SECTION 7: HANDLING AND STORAGE

Handling Procedures:
Sheet Material: Secure product to prevent shifting during handling, or transport.
Debris: Handle in contained and properly designed equipment systems. Avoid ingestion and inhalation. Keep away from uncontrolled heat incompatible materials. Earth (ground) all material handling and transfer equipment to dissipate build-up of static electricity. Keep handling areas and processing equipment free of debris. Do not use compressed air to sweep debris. For additional information on control of static and minimizing potential dust and fire hazards, refer to NFPA-654, "Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, 2006 Edition."
Storage Procedures:
Store sheet material flat. Secure to pallet, rack, or stack. Storage area accessible only to trained and authorized personnel. Store accumulated debris in closed, earthed (grounded) and properly designed vessels, away from uncontrolled heat and incompatible materials. Avoid accumulation of dust by frequent cleaning and suitable construction of storage and handling areas. Keep shovels and vacuum systems readily available for cleanup of debris. DO NOT enter filled bulk containers and attempt to walk over product, due to risk of slipping. Use a fall arrest system when working near open bulk containers.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

OSHA Permissible Exposure Limits (OSHA PEL)
Debris and dust produce from processing sheet material can be considered nuisance particulates.
Particulates Not Otherwise Classified (PNOC) OSHA PEL (Total Dust) 15 mg/m3 TWA OSHA PEL (Respirable Fraction) 5 mg/m3 TWA (Respirable Fraction) ACGIH (Inhalable Particulate) 10 mg/m3 TWA ACGIH (Respirable Particulate) 3 mg/m3 TWA.
Engineering Controls
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.
Personal Protection Equipment (PPE)
Inhalation: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Use appropriate respiratory protection where atmosphere exceeds recommended limits. A respiratory protection program that meets OSHA's 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. "Nuisance dust" such as polymer dust typically exhibits no significant health effect when they are reasonably controlled. Exposure to high concentrations of dust may cause slight irritation by mechanical action.
Skin: Use chemical resistant gloves appropriate to conditions of use. Wear heat protective gloves and clothing if there is a potential for contact with heated material. Protective clothing such as long sleeves or a lab coat should be worn.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION cont.

Eye: Dust service goggles should be worn to prevent mechanical injury or other irritation to eyes due to airborne particles, which may result from processing of this product. Safety glasses are required as minimum requirement.
Footwear: Use appropriate footwear. Spilled debris can be a serious slipping/falling hazard. Exercise caution when walking on spilled material.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Solid Sheet Material - Translucent to white.	**Lower Flammable Limit:** No Data Available.
Odor: Faint, mild hydrocarbon odor.	**Explosive Properties:** No Data Available.
Odor Threshold: No value available.	**Oxidizing Properties:** No Data Available.
pH: Not applicable.	**Vapor Pressure:** Not applicable.
Freezing Point: Not applicable.	**Vapor Density:** Not applicable
Melting Point: 100 to 140°C	**Relative Density:** .91 - .97 (water=1)
Boiling Point/Boiling Range: Not applicable.	**Solubility (Water):** Insoluble.
Flash Point: Not applicable.	**Partition Coefficient (Kow):** Specific data not available.
Evaporation Rate: Not applicable.	**Auto-ignition:** >300°C
Flammability: Not Classified. Burns but does not easily ignite.	**Decomposition Temperature:** Varies; >300°C
Upper Flammable Limit: No Data Available.	**Viscosity:** Not applicable.

SECTION 10: STABILITY AND REACTIVITY

Reactivity:
Non-Reactive with Air, or Water
Chemical Stability:
This product is stable under normal use conditions for shock, vibration, pressure, or temperature.
Possibility of Hazardous Reactions:
Certain Halogens, Organic Chlorides and Hydrocarbons may react with and degrade polyethylene. Powders or dusts may form an explosive mixture with air. Dusts may create static discharge; Risk of dust-air explosion is increased if flammable vapors are also present.
Conditions to Avoid:
Avoid processing material over 300°C. Avoid accumulations of debris and dust in air and surfaces.
Incompatibility:
Fluorine gas, (violent reaction), Diethyl ether, Methylene chloride, Ethylene chloride. Polyethylene degrades after lengthy contact with most Aromatic hydrocarbons; benzene, toluene, acetone, xylenes, ammonia gas, turpentine, naphtha, etc., and most Halogenated Hydrocarbons; Perchloroethylene, chloroform, trichloroethylene, carbon tetrachloride, etc.
Hazardous Decomposition Products:
At temperatures >300deg C (572deg F), polyethylene may emit various oligomers, waxes and oxygenated hydrocarbons as well as carbon dioxide, carbon monoxide and small amounts of other organic vapors (e.g. aldehydes, acrolein). Inhalation of the decomposition gases may be hazardous.

SECTION 11: TOXICOLOGICAL INFORMATION

Routes of Exposure
Eyes, Inhalation, or Skin This product when in sheet material presents no likely route of exposure. However, when machined or processed, or heated, possible exposure can occur by routes stated above.
Symptoms (characteristic)
Physical:
Hot material may cause thermal burns. Mechanical irritation to skin, eyes, and throat may occur with exposure to dust and small particles.
Chemical:
Inhalation of process fumes and vapors may cause soreness in the nose and throat and coughing.
Toxicological:
This material is considered essentially inert and non-toxic. It has no known acute health effects.
Delayed and Immediate Effects:
Coughing, throat soreness, possible redness of skin, or eyes, or throat.

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SECTION 11: TOXICOLOGICAL INFORMATION cont.

Chronic Effects: (short and long term exposure)

Product has minimal chronic effect. There are no known or reported reproductive or genetic effects.

Acute Toxicity - L050/LC50

Polyethylene (Ethene homopolymer) (-) Inhalation LC50 Mouse: 12 g/m3/30M

Polyethylene (1-Butene, polymer with ethene) (-) Oral LD50 Rat: 4 g/kg

Acute Toxicity - Effects

Inhalation:

Rats inhaling polyethylene dust developed mild inflammatory changes in the lungs. Prolonged inhalation of thermal degradation products from polyethylene caused neurological effects in rats.

Ingestion:

No adverse health effects were noted on the digestive system of test animals when fed up to 20% polyethylene.

Repeated Dose Toxicity

Sub chronic, 50-90 day, feeding studies conducted on rats, dogs and swine showed no effects from dietary levels of 120% powdered and shredded polyethylene.

Carcinogenicity

Not listed by IARC, NTP, OSHA or EPA.

SECTION 12: ECOLOGICAL INFORMATION (non-mandatory)

The content of this section is considered non-mandatory by OSHA because it concerns matters handled by other agencies.

SECTION 13: DISPOSAL CONSIDERATIONS (non-mandatory)

The content of this section is considered non-mandatory by OSHA because it concerns matters handled by other agencies.

SECTION 14: TRANSPORT INFORMATION (non-mandatory)

The content of this section is considered non-mandatory by OSHA because it concerns matters handled by other agencies.

SECTION 15: REGULATORY INFORMATION / SAFETY, HEALTH AND ENVIRONMENTAL (non-mandatory)

The content of this section is considered non-mandatory by OSHA because it concerns matters handled by other agencies.

SECTION 16: OTHER INFORMATION

Special Considerations:

Exposure to the Hazardous Combustion and Decomposition Products as described in SDS Sections 5 and 10 may be linked with various acute and chronic health effects. These effects include irritation of eyes and upper respiratory tract primarily from the aldehydes, breathing difficulties, systemic toxicity such as liver, kidney, and central nervous system effects. Polyethylene fines and dust particles are listed as a Class I combustible dust by the National Fire Protection Association (see NFPA-68, Table F.1). For additional information on control of static and minimizing potential dust and fire hazards, refer to NFPA-654, "Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids, 2006 Edition".

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