

MSDS -04: HDPE -MATERIAL SAFETY DATA SHEET

1. Product and company identification

Product identification HDPE
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2. Composition/information on ingredients

Chemical name: high-density polyethylene
Synonyms: HDPE

Composition:	CAS #	% m/m
Polyethylene	9002-88-4	> 99
Additives	-	<1

Physical appearance: Translucent white pellets ,cake and powder. Contains slight traces of titanium, chlorine, aluminium. Various organic and inorganic additives may be incorporated.

Potential hazard: Spilled material may present a slipping hazard. Following handling and packing various procedures, polyethylene dust may occur. Molten polymer may cause thermal burns. When burning without sufficient oxygen, it starts to release fumes that can contain carbon mono and dioxide, other oxidizing organic compounds. To minimize exposures, adequate room and ventilation should be provided.

3. Hazard identification

Polyethylene is not classified as toxic, harmful, irritant or corrosive product.

Eye contact: The product may content small particles that may cause eyes irritation, due to the mechanical action. Gaseous emissions released while burning may cause eyes irritation/redness.

Skin contact: The product may content small particles that may cause irritation. The contact with molten polymer cause thermal burns.

Ingestion: The product presents minimal toxicity. No hazard anticipated from swallowing incidental small amounts.

Inhalation: In normal concentrations, polymer dust induces no health effects. The product is not volatile at room temperature. Gaseous emissions released while burning may cause nose and breathing tract irritation.

4. First aid measures

Eye contact: Flush with plenty of water for 15 minutes. Remove large particles. In case the irritation persists, get medical attention.

Skin contact: Flush with water and soap for several minutes. In case the irritation persists, get medical attention. Molten polymer – if molten material comes in contact with the skin, cool under ice water or a running stream of cold water. Cover the affected area with clean cotton sheeting or gauze. Do not attempt to remove the product from skin; it could result severe tissue damage. Get medical attention.

Ingestion: not applicable

Inhalation: In case typical symptoms occur, remove the victim to fresh air. Get medical attention if symptoms persist.

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5. Fire fighting measures

Flashpoint: > 340°C

Ignition conditions: Polyethylene is a combustible substance but under normal housekeeping conditions there is no risk of ignition. It not easily ignites but in contact with a flame it becomes soft, flows, ignites and burns until exhausting (if it isn't stabilized with a flame retardant agent). In foil form ignites easily. Static electricity may accumulate during handling/storage, and in certain conditions may constitute an ignition source source in case a high dust concentration exists.

Toxic combustion products: Carbon mono and dioxide, other oxidizing organic compounds. In case of burning without sufficient oxygen, a black, dense smoke is released

Extinguishing media: Small fire: dry chemicals, and carbon dioxide extinguishers. Large fires: large quantities of water spray.

Fire fighting procedures: Keep people away. Isolate fire area and deny unnecessary access. Cool the area with water to localize the fire. Soak with water to cool and to avoid re-ignition.

Protective equipment for fire fighters: Complete fire fighting clothing, self-contained breathing apparatus. In case these are not available, fire extinguishing has to be done from a safe distance or a protected location.

Explosion hazard: The product as delivered has no explosive character. In case of accumulation, polymer dust may form explosive mixtures with the air.

6. Accidental release measures

Personnel protection: Remove unnecessary personnel from area. Limit access to the area. Spilled pellets may induce slipping hazard. Molten polymer presents thermal burns hazard in case of skin contact.

Environment protection: The released material will not be discharged to the sewerage.

Clean up: The contaminated area shall be swept and cleaned, and the residual material collected in dried and labeled containers. For disposal, see section 13.

7. Handling and storage

Store polyethylene in dark, dry and well-ventilated area, away from all heat and ignition sources (sparks, open flames or hot surfaces, welding operations), combustible materials or incompatible substances (strong oxidizing agents). Temperature in the storage area shall not exceed 40°C. Avoid dust accumulation by frequent cleaning and suitable warehouses structure. Local exhaust ventilation is recommended for control of airborne dust, fumes and vapors, in enclosed areas.

During handling and processing, polymer may charge electrostatic. Use only machines fitted with earth.

8. Exposure control /personal protection

Eyes and hands protection: Safety glasses for handling at ambient temperature. Thermal resistant gloves, arm protection and goggles/face shield in case of possible contact with molten product.

Skin and body protection: In case of polymer handling or processing at elevated temperatures or in a molten state, adequate protective equipment will be used over the skin, to prevent contact.

Respiratory protection: For most conditions, no special respiratory protection is necessary. When polymer is heated, general and local ventilation systems will be provided.

Hygienic measures: Inside work areas, eating is not allowed. Normal clothing will be kept separately from work and protective equipment.

9. Physical and chemical properties

Physical state: Pellets, powder

Color: White translucent

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Odor: No odor
Melting temperature: 190- 210 °C
Flash point: > 340 °C
Density: 0.94 - 0.97 g/cm³
Water solubility: Negligible

10. Stability and reactivity

Chemical stability: Polyethylene pellets and cakes are normally stable. The product is not corrosive.
Hazardous polymerization: No
Conditions to avoid: Excessive temperatures (over 250 °C) or open flames.
Materials to avoid: Strong oxidizing agents (chlorates, nitrates, peroxides, free halogens), organic solvents.
Hazardous decomposition products: carbon mono and dioxide, other oxidizing organic products.

11. Toxicological information

Acute toxicity: Polyethylene is considered non-toxic for animals, in case of powder inhalation or solid swallowing.
Local effects: Unknown
Sensibility: Unknown
Chronic toxicity: Unknown
Cancer hazard: Not established
Maximum concentration accepted: Not regulated.
According to Governmental Regulations HG 1218/6.09.2006 related to establishment of minimal health and safety work conditions for personnel protection against chemical agents, for polyethylene there are not regulations regarding the exposal limits of personnel .
If toxic impurities or decomposition products appear, it has to take into consideration the smallest limits stipulated in local or national legislation.

12. Ecological information

Movement: Soil- the product will not migrate.
Degradation: The product is inert and it is not biodegradable. Surface photo degradation is expected with exposure to sunlight. Due to the negligible water solubility, it produces no effects on aquatic environment.
Bioaccumulation: Not expected
Ecotoxicity: Minimal, due to the negligible water solubility. Pellets may be harmful for birds and fish if swallowed.

13. Disposal considerations

Spilled material removal: Sweep and clean contaminated area, collect residual material into dried, labeled containers. Wash the area with water.
Wastes disposal: Polyethylene wastes are recyclable materials. It is preferably that production rejects and conversion wastes be recycled instead of being disposed.
Disposal of any wastes should observe all national and local valid regulations. In this case should be provided the information regarding the delivered polyethylene : the additives content ,the fillers or other components which can affect the disposal process.
Polyethylene can be disposed by burial (after the elimination of risk of soil contaminations) or controlled incineration, respecting valid regulations regarding gaseous or solid particles discharges. Due to the high heat value, incineration has to be done only in units designed to handle high heats of combustion. In case it is landfilled: polyethylene is inert, does not degrade quickly and does not release gases or other compounds known to pollute water resources.

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14. Transport information

International settlements: not regulated by RID, ADR, DOT, IATA, ICAO, IMDG rules.

Polyethylene pellets transport: CP4 euro pallets (1375 kg HDPE/pallet, distributed in polyethylene bags, containing each one 25 kg of product), big-bags- in truck or rail silo, maritime transport containers

Polyethylene powder transport: polyethylene bags, containing each one 25 kg of product, big-bags- in truck or rail silo.

Polyethylene cake transport : Bulk and big-bags- in truck or rail silo.

15. Regulatory information

According valid Romanian legislation:

Label:	Hazard symbol:	Not regulated
	R - phrases:	Not regulated
	S - phrases:	Not regulated

According international legislation: To the best of Rompetrol Petrochemicals knowledge, the product contains no chemical subject to SARA /Title III, OSHA or CERCLA requirements.

16. Other information

Rompetro Petrochemicals does not recommend any company product for applications that involve human tissues or internal fluids contacts (regardless of the contact length of time), for cardiac devices, for medical device components that support human life, as well as for applications that have connections with human reproduction.

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