



SAFETY DATA SHEET

Medium-Density Polyethylene — MDPE

Version: 1.0

Issue date: 13 July 2026

1. Identification

Product name: Medium-Density Polyethylene

Abbreviation: MDPE

Chemical name: Polyethylene

CAS number: 9002-88-4

Product form: Pellets or granules

Recommended use: Raw material for gas pipes, water pipes, industrial piping, fittings, conduit and other thermoplastic products.

Supplier: Basekim Chemical Production Co. Ltd.

Email: info@basekim.com

Emergency telephone: Insert the supplier's monitored emergency number.

2. Hazard Identification

GHS Classification

The solid polymer resin is generally **not classified as hazardous** under normal conditions of handling.

Signal word: None

Pictograms: None

Hazard statements: None required

Other Hazards

- Molten polymer can cause severe thermal burns.
- Spilled pellets create a serious slipping hazard.
- Dust generated during cutting, grinding or conveying may irritate the eyes and respiratory tract.
- Fine polymer dust may form a combustible dust atmosphere.
- Thermal decomposition can release irritating fumes and carbon oxides.



- Pellets may present an environmental hazard to wildlife if released.

3. Composition/Information on Ingredients

Component	CAS Number	Concentration
Polyethylene resin	9002-88-4	≥95%
Pigments, antioxidants and processing additives	Proprietary	≤5%

Black grades may contain carbon black. The exact additive package depends on the product grade.

4. First-Aid Measures

Inhalation: Move the affected person to fresh air if dust or decomposition fumes have been inhaled. Obtain medical attention if coughing, breathing difficulty or irritation continues.

Skin contact: Wash with soap and water. For contact with molten polymer, immediately cool the affected area with clean running water. Do not remove solidified polymer from the skin. Obtain urgent medical care.

Eye contact: Flush cautiously with clean water for at least 15 minutes. Obtain medical advice if irritation persists. For contact with molten material, seek immediate medical attention.

Ingestion: Rinse the mouth. The product is not expected to present an acute ingestion hazard, but obtain medical advice if discomfort occurs.

5. Firefighting Measures

Suitable extinguishing media:

- Water spray or fog
- Foam
- Dry chemical powder
- Carbon dioxide

Avoid dispersing molten burning polymer with a high-pressure water jet.



Polyethylene is combustible and may melt, drip and continue burning when exposed to sufficient heat. Combustion or severe overheating may generate carbon monoxide, carbon dioxide, smoke and irritating decomposition products.

Firefighters should wear full protective clothing and self-contained breathing apparatus. Cool exposed packages with water spray.

6. Accidental Release Measures

- Eliminate ignition sources where dust is present.
- Prevent pellets from entering drains and waterways.
- Sweep, shovel or vacuum the material into suitable containers.
- Avoid generating airborne dust.
- Reuse clean material where possible.
- Clean the floor thoroughly because pellets can cause slipping.
- Collect molten material only after it has cooled and solidified.

7. Handling and Storage

Handle using good industrial hygiene practices.

- Avoid creating dust.
- Keep away from open flames and excessive heat.
- Use adequate ventilation around heated processing equipment.
- Prevent accumulation of electrostatic charge.
- Keep containers or bags closed when not in use.
- Do not smoke in processing or storage areas.
- Store in a cool, dry and ventilated location.
- Protect from sunlight, water and contamination.

8. Exposure Controls/Personal Protection

Engineering controls: General ventilation is normally adequate. Use local exhaust ventilation at extrusion vents, cutting stations and locations where fumes or dust may be generated.

Eye protection: Safety glasses. Use a face shield when handling molten resin.

Hand protection: Work gloves for pellets; heat-resistant gloves for hot equipment or molten material.



Skin protection: Long sleeves, long trousers and protective footwear.

Respiratory protection: Normally not required for pellet handling. Use an approved particulate respirator when dust exposure cannot be controlled. Use suitable respiratory protection for thermal decomposition fumes.

9. Physical and Chemical Properties

Property	Typical Information
Physical state	Solid pellets or granules
Colour	Natural, black or customised
Odour	Essentially odourless
Density	Approximately 0.926–0.940 g/cm ³
Melting range	Approximately 120–130°C
Water solubility	Insoluble
Flash point	Not applicable to solid pellets
Vapour pressure	Negligible
Auto-ignition temperature	No verified grade-specific data
Decomposition temperature	Above normal processing temperatures; grade dependent
Explosive properties	Fine suspended dust may be combustible

MDPE density falls between conventional low- and high-density polyethylene, while exact melting and mechanical properties depend on molecular structure and grade.

10. Stability and Reactivity

Stable under normal storage and processing conditions.

Avoid:

- Open flames and strong heat
- Prolonged overheating
- Strong oxidising agents
- Accumulation of fine dust
- Excessive processing residence time

Hazardous polymerisation is not expected.



Thermal decomposition may produce carbon monoxide, carbon dioxide, hydrocarbons, aldehydes and irritating smoke.

11. Toxicological Information

The solid polymer is expected to have low acute toxicity.

Pellet contact is not normally irritating. Polymer dust may cause temporary mechanical irritation to the eyes, skin or respiratory tract.

Fumes from overheated material may irritate the eyes, nose and respiratory system. One polyethylene SDS notes that fumes generated above approximately 300°C may cause respiratory irritation, coughing and shortness of breath.

Molten product causes thermal burns rather than chemical burns.

No carcinogenic, mutagenic or reproductive classification is expected for the polyethylene polymer itself. Additive and pigment status must be confirmed for the specific grade.

12. Ecological Information

Polyethylene is insoluble in water and is not expected to be readily biodegradable.

The polymer is not expected to produce acute aquatic toxicity through dissolution, but pellets and fragments can persist in the environment and may be ingested by wildlife.

Prevent all releases to drains, waterways, coastal areas and soil.

13. Disposal Considerations

Reuse or recycle uncontaminated material where possible.

Dispose of waste resin and packaging according to local regulations. Controlled incineration may be used at an authorised facility.

Do not burn in an uncontrolled fire. Do not discharge pellets or dust into drains or the natural environment.



14. Transport Information

Item	Classification
UN number	Not assigned
ADR/RID	Not regulated
IMDG	Not regulated
IATA/ICAO	Not regulated
Packing group	Not applicable
Marine pollutant	No

Keep packages secured, dry and protected from damage during transport.

15. Regulatory Information

The final SDS must be assessed under the regulations of the country where the resin is manufactured, imported and sold.

The supplier should confirm:

- Exact additive and pigment composition
- REACH or applicable inventory status
- Food-contact status, where claimed
- Potable-water approval
- Gas-pipe and pressure-pipe certifications
- Carbon-black and restricted-substance compliance
- Destination-country labelling requirements

16. Other Information

This SDS applies to a typical MDPE resin supplied as pellets. It does not automatically apply to powders, recycled MDPE, compounds containing hazardous additives or finished articles.

The selected product grade, Certificate of Analysis, technical specification and applicable pipe approvals take precedence over this generic document.

Supplier: Basekim Chemical Production Co. Ltd.