



MATERIAL SAFETY DATA SHEET (MSDS)

HDPE Geomembrane Sheet

1. Identification of the Product and Company

Product Name: HDPE Geomembrane Sheet

Chemical Name: High Density Polyethylene (HDPE) Geomembrane

Chemical Family: Polyolefin / Thermoplastic Polymer

Recommended Use: Waterproofing, containment, lining, environmental protection, reservoirs, ponds, landfills, foundations, tunnels, canals and civil engineering applications.

Product Form: Solid flexible sheet / roll

2. Hazards Identification

GHS Classification: Generally not classified as hazardous in its supplied solid sheet form.

Main Hazards:

- Under normal handling and installation, the product is not expected to present significant health hazards.
- Molten or heated HDPE can cause severe thermal burns.
- Excessive heating, welding, burning or thermal decomposition may generate irritating fumes.
- Burning may produce carbon monoxide, carbon dioxide, smoke, soot and other organic decomposition products.
- Rolls and loose sheets may present manual-handling, slipping or tripping hazards.
- Fine polymer dust, if generated during processing, may present a combustible-dust hazard.

Signal Word: Not applicable under normal conditions of use.

3. Composition / Information on Ingredients

Component	CAS Number	Typical Content
High Density Polyethylene	9002-88-4	≥ 97%
Carbon Black	1333-86-4	Approx. 2–3%
Antioxidants / UV Stabilizers	Proprietary	< 1%

The exact formulation may vary according to grade, color and manufacturer.

4. First Aid Measures

Inhalation:

Exposure is unlikely under normal use. If fumes generated during hot-air welding, extrusion welding, overheating or combustion are inhaled, move the affected person to fresh air. Seek medical attention if irritation, coughing or breathing difficulty persists.

Skin Contact:

Normally no special treatment is required. Wash with soap and water if necessary. For contact with molten polymer, immediately cool the affected area with plenty of clean cold water. Do not



attempt to remove solidified polymer from the skin. Obtain medical attention.

Eye Contact:

If dust or particles enter the eyes, rinse carefully with clean water for at least 15 minutes. Seek medical attention if irritation persists.

Ingestion:

Not considered a likely route of exposure. Rinse mouth and obtain medical attention if significant quantities are swallowed or discomfort occurs.

5. Fire-Fighting Measures

Flammability: Combustible when exposed to sufficient heat or flame.

Suitable Extinguishing Media:

- Water spray or fog
- Foam
- Dry chemical powder
- Carbon dioxide (CO₂)

Hazardous Combustion Products:

- Carbon monoxide (CO)
- Carbon dioxide (CO₂)
- Smoke and soot
- Irritating organic vapors and decomposition products

Special Fire-Fighting Procedures:

Firefighters should wear suitable protective clothing and self-contained breathing apparatus (SCBA). Cool surrounding materials with water spray where appropriate.

6. Accidental Release Measures

As the product is supplied as solid sheets or rolls, conventional chemical spillage is not expected.

Precautions:

- Collect loose sheets and off-cuts to prevent slipping or tripping.
- Avoid releasing scraps into waterways, drainage systems or the environment.
- Collect waste mechanically for reuse, recycling or appropriate disposal.
- Prevent accumulation of fine polymer dust if generated during cutting or processing.

7. Handling and Storage

Handling:

- Handle rolls using suitable lifting equipment.
- Avoid dragging the membrane over sharp or abrasive surfaces.
- Protect sheets from puncture and mechanical damage.
- Keep away from open flames and excessive heat.
- Ensure adequate ventilation during thermal or extrusion welding.
- Follow appropriate lifting procedures for heavy rolls.

Storage:

- Store in a cool, dry and well-ventilated location.
- Keep away from open flames, ignition sources and excessive heat.



- Protect from physical damage.
- Keep rolls properly secured to prevent rolling or falling.
- Store according to the manufacturer's recommended stacking requirements.

8. Exposure Controls / Personal Protection

Under normal handling of the finished HDPE geomembrane sheet, special respiratory protection is generally not required.

During Installation or Welding:

Eye Protection:

Safety glasses or goggles are recommended during cutting and welding.

Hand Protection:

Wear suitable work gloves. Heat-resistant gloves should be used during thermal welding operations.

Respiratory Protection:

Normally not required in well-ventilated areas. Provide local exhaust ventilation where fumes from thermal welding or overheating may accumulate.

Protective Clothing:

Normal industrial work clothing and safety footwear are recommended.

Engineering Controls:

Provide adequate general and/or local ventilation during welding and other high-temperature operations.

9. Physical and Chemical Properties

Property	Typical Information
Physical State	Solid sheet / membrane
Appearance	Smooth or textured flexible sheet
Color	Typically black
Odor	Essentially odorless
pH	Not applicable
Density	Typically $\geq 0.94 \text{ g/cm}^3$
Water Solubility	Insoluble
Melting Range	Approximately 120–140°C
Flash Point	Not normally applicable to solid sheet
Vapor Pressure	Negligible
Evaporation Rate	Not applicable
Flammability	Combustible under sufficient heat
Water Absorption	Very low

Values may vary according to formulation and geomembrane grade.



10. Stability and Reactivity

Chemical Stability:

Stable under normal recommended handling and storage conditions.

Conditions to Avoid:

- Excessive heat
- Open flames
- Ignition sources
- Prolonged overheating

Incompatible Materials:

Strong oxidizing agents and certain aggressive chemicals under elevated temperature conditions.

Hazardous Decomposition Products:

Thermal decomposition or combustion may produce carbon monoxide, carbon dioxide, smoke, soot and irritating organic vapors.

Hazardous Polymerization:

Will not occur under normal conditions.

11. Toxicological Information

HDPE geomembrane in its finished solid form is generally considered to have low toxicity and is not expected to cause significant adverse health effects during normal handling.

Acute Toxicity: No significant acute toxicity expected from the finished sheet.

Skin Irritation: Not normally irritating.

Eye Irritation: Mechanical irritation may occur from particles or dust.

Inhalation: Fumes from overheating or combustion may irritate the respiratory system.

Thermal Hazard: Molten material can cause severe burns.

12. Ecological Information

HDPE is generally considered chemically stable and has very low water solubility.

- Not expected to readily biodegrade.
- Finished geomembrane is not expected to release hazardous substances under normal service conditions.
- Plastic scraps should not be released into soil, drains, rivers or marine environments.
- Collect installation off-cuts and recycle wherever practical.

13. Disposal Considerations

HDPE geomembrane waste should be:

- Reused where practical.
- Recycled through an appropriate plastic recycling facility where available.
- Disposed of according to applicable local and national regulations.

Do not burn in uncontrolled conditions because combustion can generate smoke, carbon monoxide and other decomposition products.



14. Transport Information

The finished HDPE geomembrane sheet is generally **not classified as dangerous goods for transport** under normal shipping conditions.

UN Number: Not applicable

UN Proper Shipping Name: Not regulated

Transport Hazard Class: Not applicable

Packing Group: Not applicable

Marine Pollutant: Generally No

Applicable transport regulations and carrier requirements should always be checked for the specific shipment and jurisdiction.

15. Regulatory Information

HDPE geomembrane supplied as a finished solid article is generally not classified as hazardous under standard GHS chemical hazard criteria during normal intended use.

Applicable national occupational health, environmental, fire safety and waste-disposal regulations should be followed.

16. Other Information

This MSDS is intended to provide general health, safety, handling, storage and environmental information for **HDPE Geomembrane Sheet**.

The information applies to the product in its normal solid sheet form. Additional precautions may be required during thermal welding, extrusion welding, cutting, grinding, recycling or other operations that generate heat, fumes or fine particles.

Product: HDPE Geomembrane Sheet

Document Type: Material Safety Data Sheet (MSDS/SDS)

Revision Date: August 2026

Disclaimer:

The information contained in this document is provided in good faith and is based on generally available safety information for high-density polyethylene geomembranes. Actual composition and properties may vary by manufacturer and grade. Users should verify the final SDS against the specific product formulation and applicable regulations before issuing it as an official regulatory document.