



MATERIAL SAFETY DATA SHEET

Linear Low-Density Polyethylene (LLDPE)

Section 1 - Identification of the Substance / Preparation & of the Company / Undertaking

Product Details:

Product Name : HP Durapol® LLDPE
Chemical Family : Synthetic Polymer - Polyolefin
Identified Uses : Raw material for plastics processing industry

Company Details:

Name : Hindustan Petroleum Corporation Limited
Address : Petrochemicals Marketing, 10th Floor, Marathon Futurex,
N. M. Joshi Marg, Lower Parel (East), Mumbai - 400013
Contact No. : +91 2223030000
Website : www.hindustanpetroleum.com
E-Mail ID : petrochemical.marketing@hpcl.in

Section 2 - Hazards Identification

Information Pertaining to Particular Dangers for Man and Environment:

Negligible hazard at ambient temperature.

Classification System:

Product is not considered to be hazardous under normal processing conditions.

Section 3 - Composition / Information on Ingredients

Chemical Formula : $(C_4H_8)_x(C_2H_4)_n$ / $(C_6H_{12})_x(C_2H_4)_n$

CHEMICAL NAME	CONTENT (NORMAL)*	CAS NUMBER [#]
Linear Low Density Polyethylene (LLDPE)	≥ 99 wt%	25087-34-7 / 25213-02-9
Proprietary additives	≤ 1 wt%	Mixture
* Minor changes may be there for different grades of LLDPE. # CAS No. 25087-34-7 (Ethylene & 1-Butene copolymer) & 25213-02-9 (Ethylene & 1-Hexene copolymer)		



Section 4 - First Aid Measures

General Information:

At room temperature the product is neither an irritant nor release hazardous vapours. The measures listed below apply to critical situations (like fire, incorrect process conditions, etc).

Skin Contact:

If molten material contacts the skin, immediately flush with large amount of water to cool the affected tissues and polymer. Do not attempt to peel the polymer from skin. Obtain immediate emergency medical attention if the burn is deep or extensive.

Eye Contact:

Flush eyes thoroughly with water for several minutes and seek medical attention if discomfort persists.

Inhalation:

If symptoms are experienced, move victim to fresh air. Obtain medical attention if breathing difficulty persists.

Ingestion:

Unlikely to be hazardous if swallowed provided the patient is conscious. Wash out mouth with water and give 200 to 300 ml of water to drink. Do not induce vomiting. Adverse health effects due to ingestion are not anticipated. If symptoms develop obtain medical attention.

Section 5 - Fire Fighting Measures

Auto Ignition Temperature : > 330°C

Flammable Limits : NA

Suitable Extinguishing Media : Foam, Carbon Dioxide, Dry Chemical Powder

Unsuitable Extinguishing Media : Do not use Water jet or Water spray

Protective Equipment : Self Contained Respiratory Equipment, Protective Clothing & Eye protection for firefighting personnel.

Special Hazards caused by the material and its products on combustion:

In case of fire, it can release Carbon dioxide (CO₂) or Carbon monoxide (CO) or Ketones or Aldehydes. The evolve gases are hazardous.

The formation of hydrocarbons and aldehydes are possible in the initial stages of a fire (especially in between 400°C and 700°C). Molten material tends to flow or drip and will help to propagate fire.



Section 6 - Accidental Release Measures

Personal Precautions

: Spillage of Polymer granules on the floor may be slippery. Ensure suitable personal protection (including respiratory protection) during removal of spillage. Dust clouds are sensitive to ignition by electrostatic discharge.

Environmental Precautions

: Don't expose the polymer in open environment. Avoid disposal in drains, watercourses or sewers.

Section 7 - Handling & Storage

HANDLING

Information for safe handling:

No special requirement is necessary, if handled at room temperature. Avoid eating, drinking & smoking at work area. Wash face and hands before eating, drinking or smoking. Polymer dust accumulates static charges that may cause an electric spark (ignition source).

Control formation of dust. Dust clouds are sensitive to ignition under electrostatic discharge. Take precautionary measure against static discharge.

STORAGE

Requirements to be met by storerooms and containers:

This product may react with strong oxidising agents & should not be stored near such materials. Store the material at ambient temperature, away from excessive heat and direct sunlight.

Store only in the original container. Keep container tightly closed. Keep in a cool, well-ventilated place. This product should be kept away from naked flames and other sources of ignition.

Information about storage in one common storage facility: Not required.

Further information about storage conditions:

- Protect from heat and direct sunlight.
- Store container in a well-ventilated position.
- Store under dry conditions.

Specific applications: For industrial use

Section 8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Material to be used in a well-ventilated area. If material handling results dust generation, special ventilation may be needed to minimize dust exposure. If heated material generates vapour or fumes, use process enclosures, local exhaust ventilation, or other engineering controls to control exposure.



EXPOSURE LIMITS IN AIR		
ACGIH TLV-TWA	ACGIH TLV-STEL	Immediately dangerous to life or health (IDLH)
10 mg/m ³ (inhalable fraction)	NA	NA

PERSONAL PROTECTIVE EQUIPMENT

Respiratory system:

Product processing, heat sealing of film or other operations may produce dust, vapour or fumes. To minimize risk of over exposure to dust, vapour or fumes, it is recommended that a local exhaust system is placed above the equipment, and the working area to be properly ventilated. If ventilation is inadequate, use certified respirator that will protect against dust.

Skin and body:

Hot material: Wear heat-resistant protective gloves, clothing and face shield able to withstand the temperature of the molten product.

Cold material: Nothing required; however, use of gloves is a good industrial practice.

Hand:

Hot material: Wear heat-resistant protective gloves, which will be able to withstand the temperature of the molten product. Wear suitable gloves if prolonged skin contact is likely.

When dealing with hot material it is recommended to use Insulating gloves EN 407 (heat). Cold material: Nothing required; however, use of gloves is a good industrial practice.

Eyes:

Safety glasses with side shields (EN 166). Use dust goggles if high dust concentration is generated.

Section 9 - Physical and Chemical Properties

General Information	
Form	Solid Granular
Colour	Translucent to White
Odour	Odourless
Melting point/Melting range	115 - 130°C
Calorific Values	8000-11000 kcal/kg
Flash point	> 330°C
Decomposition temperature	> 300°C
Danger of explosion	Product is not explosive
Density	> 0.910 to < 0.940 g/cm ³
Solubility in / Miscibility with Water	Insoluble



SECTION 10 – Stability and Reactivity

Chemical stability : This product is stable under normal conditions of shock, vibration, pressure or temperature.

Conditions to avoid : Avoid strong oxidizing agents. Avoid processing the material above 300°C

Hazardous polymerisation : Not likely to occur

Corrosivity : Product is not corrosive

Dangerous products of decomposition: No hazardous decomposition products known at room temperature. At elevated temperature the material will begin to decompose, producing fumes that can contain CO₂, CO, Ketones & Aldehydes.

Section 11- Toxicological Information

ACUTE TOXICITY:

Low Oral Toxicity. LD50 (Rat) : > 5000 mg/kg

Low Acute Toxicity. Dust & vapours or fumes evolved during thermal processing may cause irritation to the respiratory system.

Primary irritant effect:

- **On the skin:** No irritant effect
- **On the eye:** No irritant effect
- **Sensitization:** No known sensitizing effect

ADDITIONAL TOXICOLOGICAL INFORMATION:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information available to us.

Section 12 - Ecological Information

Information about elimination (persistence and degradability): The product is not expected to be readily biodegradable.

Environmental Fate and Distribution: Solid insoluble in water. Floats on water. The product has low mobility in soil.

Toxicity & Effect on Effluent Treatment: The product has low toxicity to aquatic organisms and unlikely to affect biological treatment processes.



Section 13 - Disposal Considerations

PRODUCT

Recommendations:

- 1) Do not allow to enter drains, sewers or watercourses.
- 2) Disposal through controlled incineration or authorised waste dump in accordance with Local, State or National Regulations.
- 3) It can be reprocessed or recycled as per suitability.

POLYMER PACKAGING SACKS / CONTAINER:

Recommendation:

Disposal must be done according to official regulations or recycled as per suitability.

Section 14 - Transport Information

Transport / Additional information:

Not regulated as dangerous goods for transportation.

Section 15 - Regulatory Information

EC Classification	Not classified as dangerous for supply / use
Hazard Symbol	Not applicable
Risk Phrases	Not applicable
Safety Phrases	Not applicable

HPCL's 'HP Durapol[®] LLDPE' shall meet the requirements specified in IS 10146 - "Specification for Polyethylene and its copolymers for safe use in contact with foodstuff, pharmaceuticals and drinking water".

Furthermore, the additives added in this material formulation compiles to the "Positive List of Constituents for Polypropylene, Polyethylene and their Copolymers for its Safe Use in Contact with Foodstuffs and Pharmaceuticals" as laid down under IS 16738 - 2018.

In general, the additives & constituents used in the grade are in line with requirement laid down under FDA: CFR Title 21,177.1520, Olefin Polymers.

Section 16 - Other Information

Disclaimer:

The information & data presented herein are typical values, which should not be considered as specification. This may be used as guideline only for the purpose of specifying the requirements regarding environment, health and safety in conjunction with the product.

HPCL does not undertake any responsibility for any outcome or results from the adoption or replication of the above-mentioned data & information there on for possible use for various



products. HPCL reserves the right to change the information & data without any prior notice or information. The user will solely be responsible for any process / product usage.

Users of the material should be intimated about the appropriate warnings and safe handling procedures mentioned in the MSDS. In case of a user in the European Union, as per Article 34 of REACH Regulation (EC) No. 1907/2006, user shall communicate to HPCL any new information on hazardous properties of the Product and/or new information relevant to risk management measures for the identified uses.

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