



MATERIAL SAFETY DATA SHEET

HDPE

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical Name & Synonyms : High Density Polyethylene (HDPE)
Chemical Family : Polyolefin
C.A.S. No. : 9002-88-4
Formula : $(-CH_2 - CH_2 -)_n$
Manufacturer's Name : Indian Oil Corporation Limited
Address : Product Application and Development Centre (PADC),
C/O Panipat Petrochemical Marketing Complex (PPMC),
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SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

Paints Preservatives & Solvents	%	TLV (Units)	Alloys & Metallic Coatings	%	TLV (Units)
Pigments	Nil	NA	Base Metal	Nil	NA
Catalyst	<0.01	NA	Alloys	Nil	NA
Vehicle	Nil	NA	Metallic Coatings	Nil	NA
Solvents	Nil	NA	Filler Metal plus coating or core flux	Nil	NA
Additives	<1	NA	Others	Nil	NA
Hazardous Mixture of other liquids, solids or gases				Nil	NA

SECTION 3 - HAZARDS IDENTIFICATION

The product is not considered to be hazardous under normal processing conditions.

Potential Health Effects on:

Eyes

Contact of powder or fines with eye may cause mechanical irritation. Contact with hot or molten material may cause severe injury, including in extreme contact, 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 burns.

Ingestion

Ingestion of this product is unlikely. However, ingestion of the product may produce mild gastrointestinal irritation and disturbances.

Inhalation

Inhalation of fine particles may cause respiratory & eye irritation. Negligible hazards at ambient temperatures (-18°C to +50°C)

Environmental Hazards

Polyethylene is an essentially biological inert solid and considered non-toxic. It is stable (does not decompose) in landfills or in aquatic systems.

SECTION 4 - FIRST AID MEASURES

Skin Contact

If molten material contacts the skin, immediately flush with large amounts of water to cool the affected tissues and polymer. Do not attempt to peel the polymer from skin. Obtain immediately emergency medical attention if 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

Adverse health effects due to ingestion are not anticipated.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Ignition Temperature : 335°C

Auto Ignition Temperature : 350°C

Flammable Limits : NA

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

For Safety reasons, unsuitable extinguishing media: None

Protective Equipment: Respiratory & Eye protection for fire fighting personnel

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spill and Leak procedure : Sweep up spilled material for use or disposal. Good house keeping must be maintained to avoid potential slipping problem.

Caution : Keep walking surface free of spilled material to avoid slipping hazard.

SECTION 7 - STORAGE AND HANDLING

Information for safe handling

No special requirements necessary, if handled at room temperature.

Avoid spilling the product, as this might cause falls.

Potential toxic/irritating fumes may be evolved from heated material.

Provide appropriate ventilation for such processing conditions.

Take precautionary measures against explosion risks, as all types of polymers may develop dust during transporting or grinding of granules.

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 bags in areas protected with automatic sprinklers. Storage temperature should be below 60 °C.

Do not smoke.

Take precautionary measures to prevent the formation of static electricity.

Ground equipment electrically.

Electric safety equipment.

Open flames prohibited.

Store the product in bags, car silos, container, or large cartons.

Information about storage in one common storage facility

Not required.

Further information about storage conditions

Protect from heat and direct sunlight.

Store under dry conditions.

Specific Applications:

For safe stacking follow the storage recommendations specific for this product

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:

Use in a well-ventilated area. If handling results in 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.

PERSONAL PROTECTIVE EQUIPMENT:

Respiratory system

Product processing, heat sealing of film or operations involving the use of wires or blades heated above 300°C may produce dust, vapour or fumes. To minimize risk of overexposure to dust, vapour or fumes it is recommended that a local exhaust system is placed above the equipment, and that the working area is properly ventilated. If ventilation is inadequate, use certified respirator that will protect against dust/mist.

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: None required; however, use of gloves is good industrial practice.

Hand

Hot material: Wear heat-resistant protective gloves able to withstand the temperature of the molten product. Cold material: None required; however, use of gloves is good industrial practice.

The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Eyes

Safety glasses with side shields. Use dust goggles if high dust concentration is generated.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	: Pellets.
ODOR	: Slight waxy odour.
COLOR	: Clear to white
FREEZING POINT	: Not Applicable.
MELTING POINT	: 125 – 135 °C
BOILING POINT	: Not Applicable.
FLASH POINT	: Not Applicable.
DENSITY	: > 0.940 g/cm ³
SPECIFIC GRAVITY	: Not Applicable.
AUTOIGNITION TEMPERATURE	: Not Applicable
EXPLOSIVE PROPERTIES	: High dust concentrations have a potential for Combustion or explosion
PERCENT VOLATILE	: Not Applicable.
VAPOR PRESSURE	: Not Applicable

SECTION 10 - STABILITY AND REACTIVITY

Chemical stability

This product is stable under normal use conditions for shock, vibration, pressure or Temperature.

Chemical stability - Condition to Avoid

Avoid strong oxidizing agents. Avoid Processing Material over 300°C

Incompatibility

May react with strong oxidizing agents. Organic solvents, ether, gasoline, lubricating oils, chlorinated hydrocarbons and aromatic hydrocarbons may react with and degrade

polyethylene. Powders or dusts may form explosive mixture with air. Risk of dust-air explosion is increased if flammable vapours are also present.

Hazardous Polymerisation

Not likely to occur

Corrosivity

Product is not corrosive

Hazardous Decomposition

Upon heating, polyethylene may emit various oligomers, waxes and oxygenated hydrocarbons as well as carbon dioxide, carbon monoxide and small amounts of other organic vapours (e.g. Aldehydes, acrolein). Inhalation of these decomposition products may be hazardous.

SECTION 11 - TOXICOLOGICAL INFORMATION

Ecotoxicity

Not toxic under normal conditions.

Persistence

Non-biodegradable

Chemical

Polyethylene

Toxicity Data

No toxicology data available.

SECTION 12 - ECOLOGICAL INFORMATION

Polyethylene is an essentially biological inert solid and considered non-toxic. It is stable (does not decompose) in landfills or in aquatic systems. If released into water courses, most polyethylene pellets float.

SECTION 13 - DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible.

Waste disposal method: Landfill or incineration.

SECTION 14 - TRANSPORT INFORMATION

Not regulated as a dangerous goods for transportation.

SECTION 15 - REGULATORY INFORMATION

HDPE manufactured by IOCL shall meet the requirements stipulated in IS 10146-1982 on, 'Specification for Polyethylene and its copolymers for safe use in contact with foodstuff, pharmaceuticals and drinking water'.

Additives incorporated in this grade would conform to the positive list of constituents as prescribed in IS 10141-1982.

The product and the additives incorporated in it also comply with the FDA: CFR Title 21, 177.1520 Olefin Polymer

SECTION 16 - OTHER INFORMATION

DISCLAIMER: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Information contained in this **Material Safety Data Sheet** is to the best of our knowledge and believed to be reliable but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application etc. It is up to the user / distributor to ensure that the information contained in the material safety data sheet is relevant to the product manufactured or sold as the case may be. **Indian Oil Corporation Ltd** makes no warranties, expressed or implied, in respect of the adequacy of this document for any particular purpose.