

# **Material Safety Data Sheet**

## **(MSDS)**

### ***GUIDE TO THE SAFE HANDLING OF MATERIALS***

CHEMICAL NAME        POLYETHYLENE

CHEMICAL FAMILY     Polyolefin

APPEARANCE           Natural, slightly white powder (800-2000 micron) or cylindrical pellets

ODOUR                 Wax – like when heated, characteristic.

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#### **MAIN HAZARD**

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NOT CLASSIFIED AS HAZARDOUS

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#### **EMERGENCY AND FIRST AID PROCEDURE**

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**FIRE**                    Extinguish fires with water, foam or dry chemical. Do not use water jet. Fire fighters should wear self-contained breathing apparatus.

**EYE**                    Wash out eye with plenty of water. Obtain medical attention if soreness or redness persists.

**SKIN**                    Wash skin with soap and water.  
For molten material, immediately flood affected area with cold water. Do not remove solidified material from the skin. Obtain medical attention immediately.

**INGESTED**             Wash out mouth with water. Do not induce vomiting.

**INHALED**              Powder: - Remove from exposure.  
Processing fumes: - Remove from exposure. Keep warm and at rest. If there is respiratory distress, give oxygen. If breathing stops or shows signs of failing, give artificial respiration. Obtain medical attention immediately.

**SPILLAGE**              Pellets create slippery conditions underfoot. Vacuum up spillages immediately. Dispose of as no-hazardous waste. Recommended method of disposal is by landfill.

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### OCCUPATIONAL EXPOSURE LIMITS

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EH40/89: biologically inert dusts: total inhalable dust: 10mg/m<sup>3</sup> 8h TWA:  
total respirable dusts : 5mg/m<sup>3</sup> TWA

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### HEALTH EFFECTS

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EYES	Solid particles will cause transient irritation as a result of mechanical abrasion. Process fumes may cause irritation.
SKIN	No effect. Hot solid or liquid will cause thermal burns.
INGESTION	Acute: Practically non toxic. Significant ingestion may give rise to gastrointestinal disturbance.
INHALED	Exposure to dust at concentrations greatly above the hygiene standard may cause irritation to the respiratory tract.

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### ADDITIONAL MEDICAL INFORMATION

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Polyethylene is generally accepted as being inert. No specific antidotal treatment, symptomatic support required.  
No known delayed effects following single exposure.  
Processing at excessively high temperatures may generate carbon monoxide, formaldehyde and acrolein. The irritancy of the aldehydes provides a good warning of excessive exposure.

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### FIRE AND EXPLOSION DATA

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FLASH POINT (DEG C)	Not applicable
AUTOIGNITION (DEG C))	350 (ASTM D 1929-77)
FLAMMABLE LIMITS (% V/V) UPPER	Not applicable
LOWER	Not applicable
EXPLOSION HAZARDS	In powder form this product contains particles which can form a group A dust capable of ignition and propagating flame. See “other Information”.

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**CHEMICAL DATA**

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FORMULA /COMPOSITION	[ C <sub>2</sub> H <sub>4</sub> ] <sub>n</sub> Contains traces of antioxidants.
REACTIVITY/STABILITY	Stable. No unusual reactivity.
INCOMPATIBILITY	None under normal circumstances.
HAZARDOUS DECOMPOSITION	Combustion will generate oxides of carbon. Thermal decomposition under conditions of limited oxygen supply will give rise to carbon monoxide. It has also been reported that acrolin may be produced in toxicologically significant amounts.

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**PHYSICAL DATA**

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DENSITY LIQUID	910-960 kg/m <sup>3</sup> (solid)
BULK DENSITY (KG/M <sup>3</sup> )	480-560 (pellet), 300-320 (powder)
BOILING POUNT (DEG °C)	Decomposition starts at about 300 deg C
FREEZING/MELTING POINT (DEG °C)	125 – 145
COEFFICIENT OF CUBICAL EXPANSION (PER DEG °C)	Not applicable
VAPOUR PRESSURE	Negligible
SOLUBILITY	Insoluble in water
VISCOSITY	Not applicable
ELECTROSTATIC GENERATION	Rapid movement of particles or pellets through transfer lines generates static electricity.

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**HANDLING AND STORAGE MATERIALS**

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UNSUITABLE	Mild steel
SUITABLE	Stainless steel Aluminum Polyethylene

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**HANDLING AND STORAGE PRECUATIONS**

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Vacuum up spillages immediately (pellets create slip hazard)  
Keep dry.  
Store away from direct sunlight, especially for extended periods of storage.  
When handling in bulk, the possibility of dust explosion should be considered.

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**RECOMMENDED PROTECTION**

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Goggles  
Wear resistant gloves and face shield when handling hot product.  
Dust respirator if conditions are dusty.

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**STATUTORY AND OTHER CONTROLS**

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RELEVANT STATOTY INSTRUMENT  
None

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**LABELLING INFORMATION (EEC)**

CLASSIFICATION      Not classified

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**TRANSPORTATION INFORMATION**

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UN CLASS	Not classified
ADR/RID CLASS	Not classified
IMO CLASS	Not classified
ICAO/IATA CLASS	Not classified
KEMLER CLASS	Not classified
HAZCHEM CODE	None
TREMCARD No.	None

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**ENVIRONMENTAL DATA**

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Polyethylene is not biodegradable

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**RELITERATURE**

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H&SE Guidance Note EH44:-Dust in the workplace : general principles of protection.  
(1984))

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**OTHER INFORMATION**

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During subsequent processing of linear polyethylene, care should be taken to provide adequate ventilation and to control the processing temperature. Thermal decomposition under conditions of limited oxygen supply will give rise to carbon monoxide. It has also been reported in toxicologically significant amounts

**FIRE AND EXPLOSION DATA –DUSTS**

The figures below apply to fines having a mean particle size of 90 microns

Maximum Explosion Pressure : 8.4 bar  
Maximum Rate of Pressure Rise : 157 bar/s  
Minimum Ignition Energy : 20 mJ  
Minimum Explosive Concentration : 30 g/m<sup>3</sup>  
Minimum Ignition Temperature : 420 deg °C