

**Material Safety Data Sheet**  
**Low Density/High Density & High Molecular Weight Polyethylene (LDPE, HDPE & HMW)**

**MSDS No:** LDPE, HDPE, HWM  
**Issue Date:** 9/23/96

**Section 1 – Identification**

**Product:** LDPE/HDPE/HMW plastic welding rods  
**Synonyms:** Polyethylene (LDPE, HDPE, HMW)  
**Formula:** CH<sub>3</sub> - (CH<sub>2</sub>)<sub>n</sub> - CH<sub>3</sub>  
**CAS RN:** 25087-34-7

**Section 2 – Ingredients**

**Composition – Polyethylene (CAS #900-88-4)**  
**Nominal % - 100 (LDPE) 96 (HDPE) 98 (HMW)**  
**PEL/TLV – None**

This product is not a hazardous chemical as defined in 29 CFR 1910.1200. Please review this information with those who will use the product.

**Material – HDPE**

<b>Typical Properties</b>	<b>ASTM Test Method</b>
ASTM type, class, category	D 1248 III A 5
Melt Index (g/cm <sup>3</sup> )	D 1238 0.38
Density (g/cm <sup>3</sup> )	D1505 0.954
Tensile Strength at Break (psi)	D 638 3,850
Elongation at Break (%)	D 638 850
Flexural Modulus (psi)	D 790 185,000
1% Secant Modulus (psi)	D 790 *
Tensile Impact (ft./lb./in.2)	D 1822 115
Low Temperature Brittleness (F50, C)	D 746 <-76
Heat Deflection Temperature at 66 psi (C)	D 648 74
Vicat Softening Point (C)	D 1525 127
Hardness (Shore D)	D 2240 66
Environmental Stress Crack Res., (F50, hr)	D 2561 >500

**FDA Status** 21 CFR 177.1520

**Key Properties:** Good Stiffness and ESCR

Applications: Household chemicals and personal care bottles.

Good general purpose Polyethylene (LDPE, HDPE, HMW).

Conforms to L-P-390C Type 1 Class H Grades 1 – 4

### Section 3 – Health Information

Swallowing: No adverse effects in rats.

Skin Contact: Molten or heated material can cause serious burns to unprotected skin.

Eye Contact: Rods can be abrasive. Particulates and fines from processing may cause mechanical irritation to the eyes.

Inhalation: Dust can be caused by some operations. Fumes may be generated when polyethylene is heated.

### Section 4 – Occupational Exposure Limits

PEL/TWA (OSHA Permissible Limit/Time – Weighted Average): No OSHA PEL for this mixture. For particulates not otherwise regulated (dust): 15 mg/m<sup>3</sup> for total dust and 5 mg/m<sup>3</sup> for respirable dust. See also Section 2 for components.

TLV/TWA (ACGIH Threshold Limit Value/Time Weighted Average): No ACGIH TLV for this mixture. For Particulates not otherwise classified (dust): 10 mg/m<sup>3</sup> for total dust. See also Section 2 for components.

### Section 5 – Emergency First Aid Procedure

For Overexposure By:

Swallowing: This product is not believed to be harmful by oral ingestion, but a physician or Poison Control Center should be called whenever any foreign object is swallowed.

Skin Contact: If contacted by molten polymer, immediately flush area with large amounts of water. GET MEDICAL ATTENTION PROMPTLY.

Eye Contact: Immediately flush eyes with plenty of cool water for at least 15 minutes. Do not permit victim to rub eyes. GET MEDICAL ATTENTION PROMPTLY.

Inhalation: Immediately provide fresh air to victim. If victim has stopped breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION PROMPTLY.

## Section 6 – Physical Data

Boiling Point:	Does not apply
Melting Point:	Crystalline, 257-284°F (125-140°C), ASTM D 2117
Vapor Pressure:	Does not apply
Specific Gravity:	0.94 to 0.965 g/cc, ASTM D 792
Vapor Density (air = 1)	Does not apply
Solubility in Water:	Insoluble
Appearance and Odor:	Various Round, Triangular, Flat and Square shapes in various colors. Odorless.

## Section 7 – Fire and Explosion Hazards

Flash point and method used:	Does not apply
Auto-ignition Temperature:	Approximately 645°F
Flammable Limits in Air (% by volume)	Lower: Does not apply Upper: Does not apply
NFPA Rating: Health (1) Flammability (1) Reactivity (0)	(Does not apply to exposure hazards other than during a fire)

### Fire Fighting Procedures:

*(Note: Individuals should perform only those fire fighting procedures for which they have been trained).*

Use water spray, dry chemical, foam or Carbon Dioxide. If possible, water should be applied as a spray from a fogging nozzle since Polyethylene is a surface burning material.

### Usual fire and explosion hazards:

Fire fighters should wear self contained breathing apparatus in the positive pressure mode with a full face piece when there is a possibility of exposure to smoke, fumes or hazardous decomposition products. The application of high velocity water will spread the burning surface layer.

## Section 8 – Reactivity

Stability:	Generally stable.
Hazardous Polymerization:	Not likely.
Conditions and Materials to avoid:	May burn or react violently with Flourine/Oxygen mixtures with 50 – 100% Flourine. May be decomposed by strong oxidizing agents such as Nitric and Sulfuric Acids, Halogens, Hydrogen Peroxide and Chlorinating agents.
Hazardous Decomposition Products:	Thermal decomposition products may include C, CO, CO <sub>2</sub> , H <sub>2</sub> O, Acrolein, Formaldehyde, and other organic vapors.

## Section 9 – Employee Protection

### Control Measures:

Engineering controls should be used whenever feasible to maintain concentrations below dust exposure limits (Section 4), including but not limited to enclosures, local ventilation and dilution ventilation. Provide adequate mechanical ventilation at the point of extrusion where polymer is at elevated temperatures coming from welding equipment.

### Respiratory Protection:

Where engineering controls are not feasible or sufficient to achieve full conformance with dust exposure limits (Section 4), use NIOSH/MSHA approved respiratory protection equipment. Respirators should be selected based on the form and concentration of contaminant in air and in accordance with OSHA (29 CFR 1910.134).

### Protective Clothing:

No need anticipated. Wear heat protective gloves and clothing if there is potential for contact with heated material.

### Eye Protection:

Wear safety glasses meeting the specifications of ANSI Standard Z87.1.

## Section 10 – Environmental Protection

### Environmental Precautions:

Avoid uncontrolled releases of this material. Where spills are possible, a comprehensive spill release response plan should be developed and implemented.

### Spill or Leak Procedures:

Use good housekeeping practices since spilled rods may be a slipping hazard. Wear appropriate respiratory protection and protective clothing as described in section 9. Contain spilled material. Transfer to secure containers.

### Waste Disposal:

All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with good engineering practices. Reclaim where possible. This product, if disposed in its pure stat, is nota RCRA hazardous waste.

## Section 11 – Regulatory Controls

### Department of Transportation:

DOT classification:	Non-Regulated Commodity
DOT Proper Shipping Name:	Non-Regulated Commodity
Other DOT Information:	Non-Regulated Commodity

### Other Regulatory Requirements:

Toxic Substance Control Act:  
This product is (or if a mixture, the components of this product are) listed in the TSCA

Inventory of Chemical Substances.

SARA Title III (sections 311/312) Hazard Categories:

This product does not meet the criteria of any SARA hazardous categories.

### **Section 11 – Precautions: Handling, Storage and Usage**

The handling of rods in both loading and unloading operations as well as fabrication may cause dust to be formed, and necessary precautions for personal protection (See Section 9) should be used.

*The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believe to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Seelye Acquisitions, Inc. bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.*