Dear Customer:

Thank you for your interest in Equistar Chemicals, LP products. Attached is a current Material Safety Data Sheet (MSDS) for the following product(s) purchased or requested by your company.

<table>
<thead>
<tr>
<th>EQUISTAR Product Name</th>
<th>Product Number</th>
<th>Material Name</th>
<th>MSDS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polypropylene Homopolymer</td>
<td>000000000000507317</td>
<td>MICROTHENE FP80000</td>
<td>0000000000146</td>
</tr>
</tbody>
</table>

Where applicable, Equistar has developed MSDS(s) to represent a group of similar products. MSDS distributions will be based on the products’ chemical name with subsequent distributions made on a twelve-month cycle to be initiated on January 1 of each year. This MSDS is representative of products characterized by the description, Polypropylene homopolymer and chemical abstract number (CAS#) 9003-07-0. You will not receive another MSDS for other product grades characterized by the same chemical name and CAS# until an order is placed in the following MSDS distribution cycle.

This MSDS has been prepared in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200). The MSDS provides important health and safety information. We suggest that you review this document prior to handling the product. For the MSDS to be an effective means of hazard communication, it must be made available to all those who handle and are responsible for operations involving this product.

Information contained herein should not be used for specification purposes. We recommend that you consult your occupational health and safety specialist to insure that methods used in the handling, storage and reporting of these products will be adequate and in compliance with applicable laws and regulations.

If additional health and safety information is required, please call the Equistar Product Safety office at (800) 700-0946 or FAX (713) 951-1574.

Sincerely,
Equistar Chemicals, LP
Product Safety

Attachment
### SECTION 1: IDENTIFICATION

**Product Name:** Polypropylene Homopolymer  
**Chemical Name:** Polypropylene homopolymer  
**CAS Number:** 9003-07-0  
**Synonyms:** Polypropylene homopolymer (powder), Polypropylene-1 (powder), PP (powder).  
**Chemical Family:** Olefinic Polymer  
**Manufacturer:** Equistar Chemicals, LP  
**Telephone Numbers:**  
- **Emergency:** CHEMTREC 800 424-9300, EQUISTAR 800-245-4532  
- **Non-Emergency:** CUSTOMER SERVICE 888 777-0232, PRODUCT SAFETY 800 700-0946

### SECTION 2: COMPOSITION

<table>
<thead>
<tr>
<th>Component Name</th>
<th>CAS #.</th>
<th>OSHA PEL</th>
<th>OSHA STEL</th>
<th>ACGIH TLV</th>
<th>ACGIH STEL</th>
<th>Carcinogenic *</th>
<th>Avg.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polypropylene</td>
<td>9003-07-0</td>
<td>N/L</td>
<td>N/L</td>
<td>N/L</td>
<td>N/L</td>
<td>N/L</td>
<td>N/L</td>
<td>98.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Proprietary Additives</td>
<td>N/L</td>
<td>N/L</td>
<td>N/L</td>
<td>N/L</td>
<td>N/L</td>
<td>N/L</td>
<td>0.0</td>
<td>2.0</td>
<td></td>
</tr>
</tbody>
</table>

*1 = OSHA  2 = IARC  3 = NTP  4 = Others  N/L = Not Listed

See Section 11 for more information

### SECTION 3: HAZARD IDENTIFICATION

**Emergency Overview:** This material is NOT HAZARDOUS by OSHA Hazard Communication definition.  
**Signal Word:** CAUTION!  
**Hazards:** Molten polymer may cause thermal burns. At process temperatures irritating fumes may be produced. Dust may form explosive mixtures with air.  
**Physical State:** Solid  
**Color:** Translucent to white solid pellets or granules.  
**Odor:** Faint, mild hydrocarbon odor.  
**Odor Threshold:** No value available.

**Potential Health Effects**

**Routes of Exposure:** Eye, Ingestion, Skin.

**Signs and Symptoms of Acute Exposure:** See component summary.
Polypropylene

Hot material may cause thermal burns. At process temperatures, irritating fumes may cause soreness in the nose and throat; coughing may result. Mechanical irritation is possible.

Skin: Molten polymer may cause thermal burns.

Inhalation: At process temperatures irritating fumes may be produced. Inhalation of process fumes and vapors may cause soreness in the nose and throat and coughing. "Nuisance dust" such as polymer dust typically exhibit no significant health effect when they are reasonably controlled. Exposure to high concentrations of dust may cause slight irritation by mechanical action.

Eye: Mechanical irritation is possible.

Ingestion: Ingestion not a likely route of exposure.

Chronic Health Effects: See component summary.

Polypropylene

No known chronic health effects.

Conditions Aggravated by Exposure: No known conditions are aggravated by this material.

SECTION 4: FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. For specific information refer to the Emergency Overview in Section 3 of this MSDS.

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

Eye: Wash eyes with clean low-pressure water. Seek medical attention if discomfort persists.

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

Ingestion: Adverse health effects due to ingestion are not anticipated.

SECTION 5: FIRE FIGHTING MEASURES

NFPA: Health 0; Fire 1; Reactivity 0; Others:

Flammability Classification: Not Classified. Polymer will burn but does not easily ignite.

Flash Point / Method: Not applicable.

Auto-Ignition Temperature: 570 °C (1,050 °F)

Flammable Limits:

LOWER: Not applicable.

UPPER: Not applicable.

Hazardous Combustion Products: Carbon monoxide, olefinic and paraffinic compounds, trace amounts of organic acids, ketones, aldehydes and alcohols may be formed.

Special Conditions to Avoid: Dust may form explosive mixtures with air.

Extinguishing Media:

SMALL FIRE: Use DRY chemicals, CO2, water spray
LARGE FIRES: Use dry chemicals, CO2, or water spray
Fire Fighting Instructions:

**Protective Equipment/Clothing:** Wear an approved positive pressure self-contained breathing apparatus and firefighter turnout gear.

**INSTRUCTIONS:** Use flooding quantities of water until well after fire is extinguished.

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**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Release Response:** Pick up and retain for recycle or disposal.

**Reportable Quantities:** See Section 15: Regulatory Information.

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**SECTION 7: HANDLING AND STORAGE**

**Handling:** Keep material off walking surfaces, it may create a slipping hazard. Polymer dust may form explosive mixtures with air. Avoid accumulation of dust in enclosed space. Use in well-ventilated area. Ground and bond equipment to prevent electrostatic charge when transferring product. Control spilled material to prevent runoff to the sewers and the environment.

**Storage:** Keep container dry. Store away from excessive heat and away from strong oxidizing agents. Keep container closed to prevent contamination.

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**SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION**

**Engineering Controls:** Ventilate area to prevent accumulation of dust and fumes.

**Personal Protection:**

**Inhalation:** Use appropriate respiratory protection where atmosphere exceeds recommended limits.

**Skin:** Protective clothing such as long sleeves or a lab coat should be worn.

**Eye:** Safety glasses are required as minimum requirements.

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**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**Boiling Point:** Not applicable.  

**pH:** Not applicable.  

**Vapor Pressure:** Not applicable.  

**Viscosity:** Not applicable.  

**Specific Gravity:** Solid/Liquid: 0.89 - 0.91  

**Water Solubility:** Insoluble.  

**Vapor:** Not applicable.  

**Octanol/Water Partition Coefficient in Kow:** Specific data not available.  

**Melting/Freezing Point:** 162 °C (325 °F)  

**Evaporation Rate:** Not applicable.

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**SECTION 10: STABILITY AND REACTIVITY**

**Chemical Stability:** The product is stable.

**Conditions to Avoid:** Avoid contact with strong oxidizers, excessive heat, sparks or open flame.

**Incompatibility with:** Chlorine, fuming nitric acid and strong oxidizing agents.

**Hazardous Products of Decomposition:** Not expected to decompose under normal conditions.

**Hazardous Polymerization:** Not likely.
Reactions with Air and Water: Does not react with air, water or other common materials.

SECTION 11: TOXICOLOGICAL INFORMATION

Product Summary: Not expected to be toxic to humans or animals.

CARCINOGENICITY: See component summary.

Component Summary:
- Polypropylene

**ACUTE INHALATION EFFECTS:** Inhalation of polypropylene DUST may cause lung inflammation. Prolonged inhalation of thermal degradation products from polypropylene may cause neurological effects.

**ACUTE ORAL EFFECTS:** Mice given an acute oral dose of 8 g/kg of Polypropylene showed no noticeable toxic effects.

**SKIN EFFECTS:** No adverse effects are expected.

**Repeated Dose Toxicity** A two year test showed no effect in rats fed a diet as high as 20,000 ppm and dogs fed up to 1 g/kg of Polypropylene.

**CARCINOGENICITY:** Not expected to occur.

**Reproductive / Development Effects** Not expected to occur.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: Ecotoxicity is expected to be minimal based on the low water solubility of polymers. Pellets can be harmful to birds and fish if ingested.

Environmental Fate: No information found in our selected references.

Bioaccumulation: Not expected to occur.

SECTION 13: DISPOSAL CONSIDERATIONS

Use only licensed transporters and permitted facilities for waste disposal. Recycle if possible.

SECTION 14: TRANSPORT INFORMATION

Proper Shipping Name: Polypropylene, ot Liquid

DOT Hazard Class: Not Regulated.

UN/NA ID: Not Regulated

Marine Pollutant: No

NAER Guidebook: Not Regulated

Packing Group: Not applicable.

DOT Status: Not Regulated.

SECTION 15: REGULATORY INFORMATION
TSCA: All components of this product are listed or are exempt from listing on the TSCA 8(b) inventory. If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below.

**TSCA 12(b) Component**

SARA - Section 313 Emissions Reporting:

<table>
<thead>
<tr>
<th>Component Summary</th>
<th>Reporting Threshold</th>
</tr>
</thead>
</table>

SARA - Section 311/312: Based upon available information, this material is not classified as the following health and/or physical hazards according to Section 311 & 312:

CERCLA Hazardous Substances and their Reportable Quantities:

<table>
<thead>
<tr>
<th>Component Summary</th>
<th>Reportable Quantity</th>
</tr>
</thead>
</table>

California Prop. 65: Proposition 65 requires manufacturers or distributors of consumer products into the State of California to provide a warning statement if the product contains ingredients for which the State has found to cause cancer, birth defects or other reproductive harm. If this product contains an ingredient listed by the State of California to cause cancer or reproductive toxicity it will be listed below.

**SECTION 16: OTHER INFORMATION**

**DISCLAIMER OF RESPONSIBILITY:**

CAUTION DO NOT USE EQUISTAR MATERIALS IN APPLICATIONS INVOLVING IMPLANTATION WITHIN THE BODY; DIRECT OR INDIRECT CONTACT WITH THE BLOOD PATHWAY; CONTACT WITH BONE, TISSUE, TISSUE FLUID, OR BLOOD; OR PROLONGED CONTACT WITH MUCOUS MEMBRANES. EQUISTAR MATERIALS ARE NOT DESIGNED OR MANUFACTURED FOR USE IN IMPLANTATION IN THE HUMAN BODY OR IN CONTACT WITH INTERNAL BODY FLUIDS OR TISSUES. EQUISTAR WILL NOT PROVIDE TO CUSTOMERS MAKING DEVICES FOR SUCH APPLICATIONS ANY NOTICE, CERTIFICATION OR INFORMATION NECESSARY FOR SUCH MEDICAL DEVICE USE REQUIRED BY FDA REGULATION OR ANY OTHER STATUTE. EQUISTAR MAKES NO REPRESENTATION, PROMISE, EXPRESS WARRANTY OR IMPLIED WARRANTY CONCERNING THE SUITABILITY OF THESE MATERIALS FOR USE IN IMPLANTATION IN THE HUMAN BODY OR IN CONTACT WITH INTERNAL BODY TISSUES OR FLUIDS.

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Latest Revision(s): Revised Section(s): 3 4 11 15

END OF DOCUMENT