MATERIAL SAFETY DATA SHEET
OPTIMUM CARTRIDGES

Identity | Polypropylene Copolymer

Used in manufacturing EFD part numbers:
- 7015214-CARTRIDGE O 2.5OZ BK IM
- 7015217-CARTRIDGE O 6OZ BK IM
- 7015220-CARTRIDGE O 12OZ BK IM
- 7015223-CARTRIDGE O 20OZ BK IM
- 7015215-CARTRIDGE O 2.5OZ GN IM
- 7015218-CARTRIDGE O 6OZ GN IM
- 7015221-CARTRIDGE O 12OZ GN IM

Section I
Manufacturer’s Name
Proprietary
For Additional Information:
Phone: 401-431-7000
800-556-3484
Fax: 401-431-7079
wwwefd-inc.com

Section II – Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s)) | OSHA PEL | ACGIH TLV | Other Limits Recommended | % (optional)
--- | --- | --- | --- | ---
Propene, Polymer with ethene (9003-07-0) | < 85% |
Polyolefin Copolymer / Terpolymer (9010-79-1) | < 15% |
Colorant (Trade Secret)
FDA Compliant – 21CFR 177.1520 (c) 1.1a.

Section III - Physical/Chemical Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignition Temperature</td>
<td>570 (1058°F)</td>
</tr>
<tr>
<td>Specific Gravity (H2O = 1)</td>
<td>0.895 to 0.905</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg)</td>
<td>NA</td>
</tr>
<tr>
<td>Melting Point</td>
<td>145-164 C.</td>
</tr>
<tr>
<td>Vapor Density (AIR = 1)</td>
<td>NA</td>
</tr>
<tr>
<td>Evaporation rate (Butyl Acetate = 1)</td>
<td>NA</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>INSOLUBLE</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>NA</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Translucent pellets and odorless</td>
</tr>
</tbody>
</table>

Date Issued: 7/10/08
Date Revised: 5/19/10
Rev #: 4
MSDS#: 0035

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Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used) | Flammable Limits | LEL | UEL
--- | --- | --- | ---
>343°C (650°F) | NA | NA | NA

Extinguishing Media
Use water spray, dry chemical, foam, or carbon dioxide to extinguish flames. Use water spray to cool fire-exposed containers. Water or foam may cause frothing.

Special Firefighting Procedures
No special equipment or procedures required.

Unusual Fire and Explosion Hazards
Hazardous melting and dripping may occur at elevated temperatures. May burn at or above flash point and airborne dust may explode if ignited. See National Fire Protection Association Bulletin 654, “Dust Explosion Prevention, Plastics Industry 1975”.

Section V - Reactivity Data

<table>
<thead>
<tr>
<th>Stability</th>
<th>Unstable</th>
<th>Conditions to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable</td>
<td>X</td>
<td>STRONG OXIDATION</td>
</tr>
</tbody>
</table>

Incompatibility (Materials to Avoid)
STRONG OXIDIZERS

Hazardous Decomposition or Byproducts
AT PROCESSING TEMPERATURES SOME DEGREE OF THERMAL DEGRADATION WILL OCCUR. A VARIETY OF DECOMPOSITION PRODUCTS MAY OCCUR INCLUDING, SIMPLE HYDROCARBONS, TO TOXIC AND IRRITATING GASES SUCH AS CARBON, CARBON MONOXID, CARBON DIOXIDE, ACIDS, KETONES AND ALDEHYDES. SOME SPECIAL FILM GRADES MAY ALSO RELEASE FLUORINATED ORGANIC SUBSTANCES.

<table>
<thead>
<tr>
<th>Hazardous Polymerization</th>
<th>May Occur</th>
<th>Conditions to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will Not Occur</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Section VI - Health Hazard Data

Route(s) of Entry: Inhalation? Skin? Ingestion?
--- | --- | --- |
YES | YES | UNLIKELY

Health Hazards (Acute and Chronic)
MAY CAUSE EYE IRRITATION.

Carcinogenicity: NTP? IARC Monographs? OSHA Regulated?
--- | --- | --- |
NO | NO | NO

Signs and Symptoms of Exposure
NA

Medical Conditions Generally Aggravated by Exposure
PREEXISTING EYE, SKIN, AND RESPIRATORY TRACT SENSITIVITIES PROLONGED OR REPEATED INHALATION OF DUST OR PARTICULATES MAY IMPAIR LUNG FUNCTION OR CAUSE LUNG DAMAGE.

Emergency and First Aid Procedure
EYES: FLUSH WITH WATER. SEE PHYSICIAN IF IRRITATION PERSISTS. SKIN: WASH WITH SOAP AND WATER. SEE PHYSICIAN IN CASE OF BURNS. INHALATION: REMOVE TO FRESH AIR, SEEK MEDICAL ATTENTION.
Section VII - Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled
AVOID THE GENERATION OF DUST CLOUDS. PLACE IN APPROPRIATE CONTAINERS FOR DISPOSAL OR RECYCLE. AVOID BREATHING DUST. PRESSURE DEMAND AIR SUPPLIED RESPIRATORS SHOULD ALWAYS BE WORN WHEN THE AIRBORNE CONCENTRATION OF THE CONTAMINANT OR OXYGEN IS UNKNOWN. OTHERWISE, WEAR RESPIRATORY PROTECTION AND OTHER PERSONAL PROTECTIVE EQUIPMENT AS APPROPRIATE FOR THE POTENTIAL EXPOSURE HAZARD. WEAR GLOVES, GOGGLES, AND PROTECTIVE CLOTHING TO AVOID CONTACT WITH EYES, SKIN, OR CLOTHING. USE VACUUMING OR SWEEPING COMPOUND FOR CLEAN-UP. DO NOT DRY SWEEP OR USE METHODS WHICH INCREASE DUSTING. PREVENT ENTRY INTO SWERS AND WATERWAYS.

IF SPILLED WHEN MOLTEN, ALLOW TO SOLIDIFY. SWEEP UP RELEASED MATERIAL. CLEAN UP DUST OR FINES WITH A SPECIAL INDUSTRIAL VACUUM CLEANER.

Waste Disposal Method
THIS PRODUCT HAS BEEN EVALUATED FOR RCRA CHARACTERISTICS AND DOES NOT MEET THE CRITERIA OF A HAZARDOUS WASTE IF DISCARDED IN ITS PURCHASED FORM. UNDER RCRA, IT IS THE RESPONSIBILITY OF THE USER OF THE PRODUCT TO DETERMINE AT THE TIME OF DISPOSAL, WHETHER THE PRODUCTS MEETS RCRA CRITERIA FOR HAZARDOUS WASTE. THIS IS BECAUSE PRODUCT USES, TRANSFORMATIONS, MIXTURES, PROCESSES, ETC. MAY RENDER THE RESULTING MATERIALS HAZARDOUS.

Precautions to be Taken in Handling and Storage
PRACTICE GOOD HOUSEKEEPING AND CLEAN UP SPILLS IMMEDIATELY, AS THIS PRODUCT CAN PRESENT A SERIOUS SLIPPING HAZARD. THE HANDLING OF THIS PRODUCT DURING LOADING, UNLOADING, AND FABRICATION MAY GENERATE NUISANCE DUSTS. TAKE NECESSARY PRECAUTIONS TO PREVENT EXPOSURE TO THESE DUSTS. WHEN UNLOADING BULK VEHICLES, DO NOT USE METAL SAMPLING DEVICES, SUCH AS A GRAIN THIEF, DUE TO THE RISK OF STATIC SHOCK AND POTENTIAL IGNITION HAZARDS. PNEUMATIC HANDLING SYSTEMS, AUGERS, AND OTHER UNLOADING DEVICES SHOULD BE FREE OF CONTAMINANTS. PERIODS OF EXPOSURE TO HIGH TEMPERATURES SHOULD BE MINIMIZED. WATER CONTAMINATION SHOULD BE AVOIDED.

Other Precautions
NA
Section VIII - Control Measures

Respiratory Protection (Specify Type)
AIRBORN CONCENTRATIONS SHOULD BE KEPT TO LOWEST LEVELS POSSIBLE. IF VAPOR, MIST OR DUST IS GENERATED AND THE OCCUPATIONAL EXPOSURE OF THE PRODUCT, OR ANY COMPONENT OF THE PRODUCT, IS EXCEEDED, USE APPROPRIATE NIOSH APPROVED AIR PURIFYING OR AIR SUPPLIED RESPIRATOR AFTER DETERMINING THE AIRBORNE CONCENTRATION OF THE CONTAMINANT. AIR SUPPLIED RESPIRATORS SHOULD ALWAYS BE WORN WHEN AIRBORNE CONCENTRATION OR OXYGEN CONTENT IS UNKNOWN.

<table>
<thead>
<tr>
<th>Ventilation</th>
<th>Local Exhaust</th>
<th>Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN VICINITY OF MOLDING MACHINERY</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Mechanical (General)</td>
<td>Other</td>
<td>NA</td>
</tr>
</tbody>
</table>

Protective Gloves
AS REQUIRED FOR HOT MATERIALS

Other Protective Clothing or Equipment
PROTECTIVE CLOTHING SUCH AS COVERALLS OR LAB COATS SHOULD BE WORN. LAUNDER OR DRY-CLEAN WHEN SOILED. GLOVES AND BOOTS RESISTANT TO CHEMICALS AND PETROLEUM DISTILLATES ALSO RECOMMENDED. HEAT PROTECTIVE CLOTHING SHOULD BE WORK WHEN HANDLING HEATED MATERIALS.

Work/Hygienic Practices
NA