Material Safety Data Sheet

SECTION 1  PRODUCT IDENTIFICATION

PRODUCT NAME: CLEARTUF® P76
PRODUCT TYPE: Thermoplastic
USES: Use for thermoplastics processing, mainly by injection blow molding.
SUPPLIER: M&G Polimeri Italia S.p.A.
Via Movelense Km 10
03010 Patrica (FR), ITALY

SECTION 2  HAZARDS IDENTIFICATION

This product is not hazardous to health and environment according to EC directives.

Human health hazards: Molten product adheres to the skin and causes burns.
Safety hazards: No specific hazards.
Environmental hazards: Not classified as dangerous under EC criteria.
Other hazards: Not classified as dangerous for supply or conveyance.

SECTION 3  PRODUCT/INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>CAS#</th>
<th>CONCENTRATION, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyester Resin</td>
<td>24938-04-3</td>
<td>100 % weight</td>
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</tbody>
</table>

Substance formal name: 1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid and 1,2-ethanediol
Substance chemical name: Poly(ethylene terephthalate-isophthalate)
Common name: PET
Synonyms: Polyethylene terephthalate-isophthalate copolymer
Polyester of ethylene isophthalate-terephthalate

SECTION 4  FIRST AID MEASURES

Symptoms and effects: Not expected to give rise to an acute hazard under normal conditions of use.
First Aid – Inhalation: Remove to fresh air. If rapid recovery does not occur, obtain medical attention.
First Aid – Skin: Molten material on the skin should be cooled rapidly with cold water, but not pulled off. OBTAIN MEDICAL ATTENTION IMMEDIATELY.
First Aid – Eye: Flush eye with water. If rapid recovery does not occur, obtain medical attention.
First Aid – Ingestion: No specific measures.
Advice to physician: Treat symptomatically.
SECTION 5  FIRE FIGHTING MEASURES

Exposure hazards: Not classified as flammable but will burn. Hazardous combustion products may include carbon monoxide, toxic gases.

Extinguishing media: Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media: Water in a jet.

Protective equipment: Full protective clothing and self-contained breathing apparatus.

SECTION 6  ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid raising a dust cloud.

Personal protection: No specific measures.

Environmental precautions: No specific measures.

Clean-up methods – small spillage: Shovel up and place in a labeled, sealable container for subsequent safe disposal.

Clean-up methods – large spillage: Transfer to a labeled container for product recovery or safe disposal.

SECTION 7  HANDLING AND STORAGE

Handling: Adequate ventilation, engineering controls or personal respiratory protection must be employed when opening sealed containers to prevent exposure to potentially toxic/irritating vapors which may have accumulated in the container headspace during storage. Avoid contact with heated or molten product. Do not breathe fumes or vapors from heated product. Use local exhaust extraction over processing area. Avoid generation or accumulation of dusts. Take precautionary measures against static discharges. Ground all equipment.

Storage: Keep container dry. Keep away from direct sunlight. Keep away from heat.

Storage temperatures: Ambient.

Product transfer: Take precautionary measures against static discharge. Ground all equipment.

SECTION 8  EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Controls

Occupational exposure standards: None established for polymer but the powder is a potential dust hazard.

Particulates (Insoluble) Not otherwise classified TLV/ACGIH

Respirable particulates: TWA (8 h) = 3 mg/m$^3$

Inhalable particulates: TWA (8 h) = 10 mg/m$^3$

Personal Protection

Engineering control measures: Use only in well-ventilated areas.

Respiratory protection: Not normally required. Where local exhaust ventilation is not practicable wear: general purpose dust respirator (disposable) NPF 7-10.

Hand protection: PVC, neoprene, or nitrile rubber gloves.

Eye protection: Safety glasses.

Body protection: Standard issue work clothes, safety shoes or boots.
SECTION 9  PHYSICAL AND CHEMICAL PROPERTIES

Appearance form: Granules
Physical state: Solid
Color: Opaque
Odor: Odorless

pH: Not applicable
Melting/Freezing point: ca 250°C
Flash point: ca 370°C (DIN 51794) flash ignition temperature
Auto-ignition temperature: ca 500°C (DIN 51794)
Flammability: Not applicable
Decomposition temperature: > 350°C
Density: ca 1400 kg/m³ at 20°C
Bulk Density (for solids): ca 830 kg/m³ at 20°C
Solubility in water: Insoluble
n-octanol/water partition coefficient (log Pow): Not applicable

SECTION 10  REACTIVITY AND STABILITY

Stability: Stable. Hygroscopic. At processing temperatures some degree of thermal degradation will occur although this is highly dependent on temperature and environmental conditions. Decomposes above 350°C.

Conditions to avoid: None known.
Materials to avoid: Oxidizing agents.
Hazardous decomposition products: Carbon monoxide, acetaldehyde, and acidic gases may be formed.

SECTION 11  TOXICOLOGICAL INFORMATION

Basis for assessment: Information given is based on product data, a knowledge of the components and the toxicology of similar products.

Acute toxicity – Oral: Low toxicity, LD50 > 2000 mg/kg.
Acute toxicity – Dermal: Expected to be of low toxicity, LD50 > 2000 mg/kg.
Skin irritation: Not expected to be irritating.
Eye irritation: Not expected to be irritating.
Skin sensitization: Not expected to be a skin sensitizer.
Repeated dose toxicity: Repeated exposure does not cause significant toxic effects.
Developmental/Reproductive effects: No known hazard.
Mutagenicity: Not mutagenic.
Carcinogenicity: No known hazard.

SECTION 12  ECOLOGICAL INFORMATION

Basis for assessment: Ecotoxicological data have not been determined specifically for this product. The information given below is based on a knowledge of the components and the ecotoxicology of similar products.

Mobility: Sinks in water.
Persistence/Degradability: Not readily biodegradable. Integrated environmental half-life expected to be >= 100 days. The product will persist in the environment as lumps of particles and disperses very slowly.
Bioaccumulation: Not expected to bioaccumulate significantly.
Sewage treatment: Expected to be not toxic at limit of water solubility.
Other information: Product is not toxic, but small particles may have physical effects on aquatic and terrestrial organisms.

SECTION 13   DISPOSAL CONSIDERATIONS

Waste disposal: Recover or recycle if possible. Otherwise, incineration.
Product disposal: Recover or recycle if possible. Otherwise, incineration.
Container disposal: Remove all packaging for recovery or waste disposal.
Local legislation: The recommendations given are considered appropriate for safe disposal. However, local regulations may be more stringent and must be complied with.

SECTION 14   TRANSPORT INFORMATION

Other information: Not dangerous for conveyance under UN, IMDG/IMO, ADR/RID and IATA/ICAO codes.

SECTION 15   REGULATORY INFORMATION

EC classification: Not classified as dangerous under EC criteria.
EINECS (EC) status: Polymer exempt.

SECTION 16   OTHER INFORMATION

SDS distribution: The information in this document should be made available to all who may handle the product.
Other information: CLEARTUF® is an M&G trade mark.

Revision#: 5
Revision Date: 04/03/2009
Revisions since last change (discussion): New MSDS format. Change in CAS number.
Product Codes: FFK36

ADMINISTRATIVE INFORMATION

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Disclaimer:
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the Product.