

SAFETY DATA SHEET

According to Regulation (EU) 2015/830 and Regulation (EC) No 1907/2006

| | | | |
|---------------------|----------------------------------|----------------------|------------|
| Product Name | High Density Polyethylene | Print Date | 24.11.1994 |
| | | Revision Date | 07.07.2017 |
| Form Number | UR.15-BF-00002-ING | Revision No. | 15 |
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SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier

| | |
|-------------------------------|---|
| Substance Name | High Density Polyethylene |
| EC No. | 618-339-3 |
| REACH Registration No. | The monomer of Low Density Polyethylene is Ethylene registered by 01-2119462827-27-0143 |
| CAS No. | 9002-88-4 |

1.2. Relevant identified uses of the substance or mixture and uses advised against :

Relevant identified uses :

| | |
|--------------------------|---|
| PETILEN YY I 668 (UV) | Injection Moulding (bottle and fruit crates). |
| PETILEN YY I 668 | Injection Moulding. |
| PETILEN YY I 668 POWDER | Polyethylene wax production, base polymer for masterbatch production. |
| PETILEN YY S 0464 | Blow Moulding (Large-sized containers for chemicals, drums for kerosene, large-sized toys). |
| PETILEN YY S 0452 | Blow Moulding (Detergent bottles, small-sized containers). |
| PETILEN YY F 00556 (HMW) | Film extrusion (Shopping bags, disposable waste bags, heavy-duty bags, thin high strength film). |
| PETILEN YY F 00756 (HMW) | Film extrusion (Shopping bags, disposable waste bags, heavy-duty bags, thin high strength film). |
| PETILEN YY B 00552 | Pipe extrusion (Distribution of drinking and irrigation water, sewerage). |
| PETILEN YY B 0153 | Pipe extrusion (Distribution of drinking and irrigation water, sewerage). |
| PETILEN YY S 00356 | Blow Moulding (Large sized containers, storage tanks for water and chemicals for transportation). |
| PETILEN YY I 457 (UV) | Injection Moulding (large containers, plastic pallets, kitchen goods). |
| PETILEN YY I 457 (O) | Injection and compression molding: organoleptic caps and closures for still (non-carbonated) mineral water and (non-carbonated) soft drink bottles. |
| PETILEN YY I 468 (UV) | Injection Moulding (palets, crates, cases and similar items). |
| PETILEN YY I 768 (UV) | Injection Moulding (crates, cases, trays and similar items). |
| PETILEN YY S 0564 | Blow moulding, monofilaments, raffia, LDPE/LLDPE coex films (in middle layer of coex films to increase stiffness and mechanical properties). |
| PETILEN YY S 00750 | It is recommended for blow molding of large size containers (up to 100 L), non-pressure pipe and telecom conduits. |
| PETILEN YY I 860 (UV) | Injection Moulding (crates, boxes, cases, trays, baskets, housewares, toys etc.). |
| PETILEN YY I 860 (O) | Injection Moulding (caps and closures for still water and soft drink bottles). |
| LOW POLYMER | Paints, inks, waxes, paper industries. |

1.3. Details of the Supplier of the safety data sheet

| | |
|---|--|
| Manufacturer/Supplier | PETKIM Petrokimya Holding A.S. P.O. Box 12 TURKEY/35800/Aliaga-Izmir |
| Telephone Number | +90 232 616 12 40 (10 lines) |
| Fax Number | +90 232 616 12 48 |
| E-Mail of Competent person responsible for the SDS | baacar@petkim.com.tr |

1.4. Emergency telephone number

| | |
|-----------------------------------|------------------------------------|
| Opening hours | 08:00-18:00 |
| Emergency Telephone Number | +90 232 616 12 40 (Ext. 1230/1240) |

SECTION 2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation EU CLP 2008 (1272/2008/EC)

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Not hazardous and not classified

2.1.2. Additional information

| | |
|--------------------------------------|----------------|
| Physical and chemical hazards | Not classified |
| Human health hazards | Not classified |
| Environmental hazards | Not classified |

2.2. Label elements

| | |
|--|----------------|
| Hazard Pictograms | Not applicable |
| Signal Words | Not applicable |
| Hazard Statement Code(s) | Not applicable |
| Precautionary Statement Code(s) | Not applicable |

2.3. Other hazards

The additives in this product (if any) are bound in a thermoplastic resin matrix. In accordance with GHS for the classification of the product, the hazard potential may be assessed with respect to the physico-chemical form and/or bioavailability of the individual components in the thermoplastic resin. Where GHS classifications are shown below, these are based on the individual components in the thermoplastic resin matrix. Under the typical use conditions for the resin, these hazardous components are unlikely to contribute to workplace exposure. Please read the entire safety data sheet and/or consult an EHS professional for a complete understanding.

SECTION 3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1. Substances

| Substances / Ingredient | Identifier | % | Classification |
|---------------------------|---|-----|-------------------------|
| High Density Polyethylene | RRN: Not available EC No: 618-339-3 CAS No: 9002-88-4 | 100 | EC No. 1272/2008 |
| | | | NA |

3.2. Mixtures

No data available

SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact

Dust, fines and process vapors may irritate the eyes. Immediately flush eyes with running water for at least 15 minutes. Remove contact lens, if worn. Seek medical attention.

Skin Contact

Exposure to molten resin may cause thermal burns. If molten material comes in contact with the skin, cool under ice water or a running stream of water. DO NOT attempt to remove the material from the skin or use solvents or thinners to dissolve it. Removal could result in severe tissue damage. Seek Medical attention. The use of vegetable oil, mineral oil is recommended for removal of this material from the skin.

Ingestion

No adverse health effects expected from ingestion. Do not induce vomiting.

Inhalation

Dust and process vapors may be irritating to the nose, throat and respiratory tract. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention. If the exposed individual is not breathing, qualified personnel should perform emergency rescue resuscitation. Seek immediate medical attention. Remove affected individual to fresh air immediately. Loosen tight clothing such as collar, tie, belt or waistband to facilitate breathing. Seek immediate medical attention if the individual is not breathing.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled

SECTION 5. FIREFIGHTING MEASURES

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5.1. Extinguishing media

Water fog, foam, carbon dioxide, dry chemical, synthetic foams, alcohol resistant foams.

5.2. Special hazards arising from the substance or mixture

The smoke can contain polymer fragments of varying composition, in addition to unidentified toxic and/or irritating compounds. Combustible gases will be released when product is exposed to temperatures over 300 °C. Combustion by-products include, but are not limited to, carbon dioxide, carbon monoxide, and aldehydes.

5.3. Advice for firefighters

Use positive pressure self contained breathing apparatus to protect fire fighters from decomposition products.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Glasses with side shields in dusty conditions. Gloves and protective garments when handling molten material. Wear a suitable anti-dust respirator where exposure is likely, protective clothing must be worn including gloves goggles/spectacles. For emergency responders wear; suitable breathing equipment, in case of risk of exposure to vapour or fumes.

6.2. Environmental Precautions

Stop the source of the release if you can do it without risk. Prevent to deposit in working area and reach to sewer system or watercourses. Avoid creating dust clouds.

On soil; granules spilled on the floor can cause a risk of slipping on smooth surfaces. Recover the spilled product by sweeping or suction; put it in containers to facilitate its disposal. Dispose safely in accordance with local or national regulations.

On water; prevent the spilled material from spreading. If the material has been discharged into a stream or a sewerage system, inform the authorities of the possible presence of floating materials. Clean up the water surface by creaming off debris from the top. Refer to a specialist for waste disposal in a safe manner in accordance with local or national regulations.

6.3. Methods and material for containment and cleaning up

Slippery material. Collect product for re-use or disposal. Sweep up immediately to eliminate slipping hazard. Notify applicable government authority if release is reportable or could adversely affect the environment.

6.4. Reference to other sections

See section 4

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Use caution to avoid creation of dusts and to prevent inhalation of product dust (fines). Electrostatic charge may accumulate and create a hazardous condition when handling this material.

7.2. Conditions for safe storage, including any in compatibilities

Store in dry area. Keep away from sunlight, sparks, heat and flame. This product may react with strong oxidizing agents and should not be stored near such materials. Store boxes and bags of material in areas protected with automatic sprinklers. Use proper grounding procedures. Two pallets may be stacked on flooring in sound condition. However, when the pictorial warning as shown on the top of the safety data sheet is affixed to the pallet, the pallet must never be placed either on top of or below another pallet. The term pallet includes both the pallet and its load. When pallets are stored in racks, it should be checked whether the pallet is fit for stacking in the concerned racks. Storage and Transport Temperature : Ambient condition. Max 50 °C. Packaging materials recommended polyethylene, paper bags, stainless steel.

7.3. Specific end use(s)

No data available

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1. Control parameters

Safety shower and eye bath located close to chemical exposure area in case of malfunction of process equipment. Use in a well ventilated area.

Exposure limits / standards

There is no special control limit for HDPE. However, the limit value for non-toxic dust concentration in ambient air is 10 mg/m³.

| Exposure Limits | ACGIH TLV | OSHA PEL TWA |
|---------------------------|--|--|
| High Density Polyethylene | 10 mg/m ³ Total Dust 3 mg/m ³ Respirable Dust | 15 mg/m ³ Total Dust 5 mg/m ³ Respirable Dust |

8.2. Exposure controls

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8.2.1. Appropriate engineering controls

Ventilated area to prevent accumulation of dust and fumes.

8.2.2. Personal Protection equipment

8.2.2.1. Eye and face protection

Wear safety glasses, face shield or chemical goggles to avoid getting material in the eyes during bulk handling. Eyewash fountains and safety showers should be easily accessible. Observe good hygiene practices when handling this product including changing work clothes after use. Do not eat, drink or smoke in areas where this material is handled.

8.2.2.2. Skin/Hand/Feet Protection

Wear heat resistant gloves, especially when polymer is heated.

8.2.2.3. Respiratory protection

No respiratory protection is normally required. If it is necessary, wear a suitable anti-dust respirator. Adequate ventilation is recommended to minimize accumulation of fines or vapours during processing and handling. Where exposure to nuisance dust may exceed acceptable levels, use NIOSH/MSHA approved respiratory protection equipment.

8.2.3. Environmental exposure controls

No information available

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

| | |
|--------------------------------|---|
| a) Appearance | Solid Resin Pellets (Diameter of 2 to 5 mm), Powder (Avg. Particle Size 150 µm) |
| b) Colour | Translucent, White to Grey |
| c) Odour | Odourless |
| d) Boiling Point | Not applicable |
| e) Melting Point | >100 °C |
| f) Flash Point | >240 °C |
| g) Autoignition Temperature | >350 °C |
| h) Dynamic Viscosity (mPa·s) | Not applicable |
| i) Relative Density | 0.950-0.970 |
| j) Water Solubility | Insoluble in water |
| k) Vapour Density | Not available |
| l) Explosion Limits (in air) | |
| Upper | Not determined |
| Lower | 0.015 kg/m ³ (for polymer dust < 63 µm) |
| m) Min. Ignition Energy (20°C) | 63 mJ |

9.2. Other information

No information available.

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3. Possibility of hazardous reactions

Not applicable

10.4. Conditions to avoid

Keep away from heat, sparks and flame. Dust formation should be avoided if the concentration of dust in the air exceeds 10 g/m³ and there is a risk of explosion. Avoid contact with strong oxidizing agents. It is recommended not to heat at a temperature higher than 320 °C. Exposure above 80 °C should be avoided.

10.5. Incompatible materials

Fluorinated and oxygenated compounds (>50% Fluorine)

10.6. Hazardous decomposition products

Hazardous polymerization will not occur. Carbon Monoxide, Carbon Dioxide, selected alkenes and aldehydes including acrolein and formaldehyde can be formed in negligible amount. It is advised to prevent explosion that avoid dust accumulation by use of filters

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in the pneumatic transport equipment. Thoroughly ventilate the working place. All conductive materials must be electrically earthed. In case of pneumatic alimentation, feed the extruders by aspiration, use preferably nitrogen as carrier gas.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

a) Acute Toxicity

Polyolefins are biologically inert.

| Toxicity | Inhalation LC 50 | Dermal LD 50 | Oral LD 50 |
|---------------------------|--------------------|---------------|-------------------------|
| High Density Polyethylene | > 5000 mg/kg (rat) | Not available | NOAEL >7950 mg/kg (rat) |

b) Ingestion:

Because of its composition, the product should be considered as practically not harmful. No adverse effects are anticipated. It can be toxic in low level.

c) Inhalation:

It may be dangerous if its dust is inhaled for long period. If heated to more than 130°C, the product may form vapours or fumes which may lead to irritation in the nose, throat and respiratory system and may cause coughing and sneezing, headache and vertigo.

d) Skin contact:

Because of its composition, the product should be considered practically as not irritating. In contact with hot material, it may cause severe thermal burns. Thermal decomposition products are produced at elevated temperatures and these may be irritating.

e) Eye contact:

Because of its composition, the product should be considered practically as not irritating. Fine dust may cause irritation to ocular mucous. Splashing of molten droplets causes ocular tissue burns. Thermal decomposition products are produced at elevated temperatures and these may be irritating.

f) Specific Effects:

Polyolefins are biologically inert. No particular preoccupation for man (Genotoxicity, carcinogenicity, reproductive toxicity)

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity

There is no evidence report that the material has environmental risk. Because of its structure, the product should not be dangerous for aquatic life.

Aquatic toxicity

The material is not soluble. Not toxic. Fish or birds may eat pellets which may obstruct their digestive tracts.

12.2. Persistence and degradability

Very low level UV deterioration. Persistent in the environment. This substance is slowly biodegradable.

BOD 5 (gO₂/g) below the detection limit

12.3. Bioaccumulative potential

This material is not expected to be readily biodegradable.

12.4. Mobility in Soil

Not Estimated

12.5. Results of PBT and vPvB assessment

Not applicable

12.6. Other adverse effects

No information available

12.7. Additional information

Not available

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Product

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It is not hazardous or toxic. It can be recycled. If it can't be recycled, dispose of waste material at a suitable landfill site, or at an approved waste incineration facility in accordance with applicable local, provincial, state and federal regulations. It may be used as fuel in suitably designed installations.

Hazardous Waste

Not applicable.

Package

Our product is packaged in 25 kg PE bags or in 1400 kg PP big bags; loose or palletized and shrink-wrapped. The waste packing material must be treated according to national legislation.

API (Association of Plastic Industry) Code 2, HDPE: High Density Polyethylene

Industrial waste number EC; 07 02 13, 16 01 19, 17 02 03 & 20 01 39: plastics

SECTION 14. TRANSPORT INFORMATION

14.1. UN Number

UN Number Not applicable

14.2. UN Proper Shipping Name

Shipping Name Not applicable

14.3./14.4./14.5. Transport Hazard Class(es)/Packing Group/Environmental Hazards

ADR/RID/ADNR Regulation It is not classified as hazardous substance in under current transportation regulation

IMDG (Marine Transportation) It is not classified as hazardous substance in under current transportation regulation

ICAO/IATA It is not classified as hazardous substance in under current transportation regulation

14.6. Special Precautions For User

Not required

14.7. Transport in Bulk According to Annex II MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Classification and Labeling According to regulation EU CLP 2008 (1272/2008/EC)

EU regulation Classification and labeling have been determined according to EU Directive 67/548/EEC,1999/45/EC(including amendments) and (EC) No. 1907/2006 Regulation take into account the intended product use.

This product is not hazardous according to EU Regulation.

15.2. Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16. OTHER INFORMATION

| | |
|------|---|
| F | Highly flammable |
| T | Toxic |
| N | Dangerous for the environment |
| OSHA | Occupational Safety Health Administration |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |

The information's given here depends on our present knowledge. Related National and International Legislation and Agreements should be considered by customer with their responsibility.