Polyethylene Malaysia urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product; and (3) request its customer to notify their employees, customers, and other users of the product of this information.

## 1 PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| Trade name | ETILINAS |
| Product type | Polyethylene (PE) |
| Manufacturer/Supplier | Polyethylene Malaysia Sdn.Bhd. |
| Address | Polyethylene Malaysia Sdn. Bhd.<br>P.O. Box 12444,<br>50778 Kuala Lumpur, Malaysia |
| Phone number | (603) 2331 3375 |
| Fax number | (603) 2331 3444; 2331 3445 |
| Emergency phone number | (609) 827 2040 |

## 2 COMPOSITION/INFORMATION ON INGREDIENTS

| | |
|---|---|
| Trivial name | Polyethylene |
| Formal name/CAS number (Main components) | Ethene homopolymer/9002-88-4<br>Ethene-butene-1 copolymer/25087-34-7<br>Ethene-hexene-1 copolymer/25213-02-9 |
| Chemical family | Polyolefin |
| Product description | Clear to opaque, white to off-white pellets, or coloured pellets (e.g. black, yellow, etc.) |

## 3 HAZARD IDENTIFICATION

| | |
|---|---|
| Physical and Chemical Hazards / Fire and Explosion Hazards | Low hazards. Material can form flammable mixtures or can burn only upon heating to temperatures at or above flash point.<br><br>Decomposes. Flammable/toxic gases will form upon decomposition. See section 10 "STABILITY AND REACTIVITY".<br><br>Toxic gases will form upon combustion. See section 5 "FIRE-FIGHTING MEASURES".<br><br>Dust. Material in form of dust is subject to explosions.<br><br>Static Discharge. Product can accumulate static charges which can cause an incendiary electrical discharge. |

| 4 | FIRST AID MEASURES | |
|---|---|---|
| | Inhalation | In case of adverse exposure to vapours and/or aerosols formed at elevated temperature, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention. |
| | Skin contact | First aid is normally not required.<br>In case of frequent or prolonged contact, flush with large amount of water; use soap if available.<br>For hot product; immediately immerse in or flush the affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze. No attempt should be made to remove material from skin or to remove contamination clothing, as the damage flesh can be easily torn. Thermal burns require immediate medical attention. |
| | Eye contact | This product is an inert solid. If in eye, remove as one would any foreign object. |
| | Ingestion | First aid is normally not required. |
| 5 | FIRE - FIGHTING MEASURES | |
| | Specific hazards | Under Oxygen lean condition, Carbon Monoxide (CO) and irritating smoke may be produced. |
| | Extinguishing media | Foam, water spray of frog, dry chemical powder, carbon dioxide. Do not use water extinguishers in close proximity to live electrical installation. |
| | Unsuitable extinguishing media | Do not use water jets in the early stage of extinguishing fire since they could help to spread the flames. |
| | Protective equipment | Respiratory and eye protection required for fire fighting personnel. |
| 6 | ACCIDENTAL RELEASE MEASURES | |
| | Personal precautions | Pellets spilled on the floor can cause a risk of slipping on smooth surfaces. Avoid raising a dust cloud. |
| | Environmental precautions | If the materials has flowed out into stream or a public sewer on other drainage systems, inform the authorities. |
| | Spillage | Transfer into suitable container for subsequent recovery or safe disposal. |

## 7 HANDLING AND STORAGE

**Handling**

Good housekeeping and controlling of dusts are necessary for safe handling of product.
Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures.

**Storage**

The polymer pellets and finished article should be stored in a manner that they are not exposed to ultra-violet light.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering control measures**

Use only in well ventilated areas. Minimum 6 air changes per hour.
Occupational exposure : nuisance dust TLV 10 mg/m$^3$ (ACGI).
Limits for the hazardous decomposition product (see section 10)

| Component name | limit type | value | unit | other info. |
|---|---|---|---|---|
| Carbon monoxyde | TLV/TWA | 29 | mg/m$^3$ | |
| Acrolein | TLV/TWA | 0.23 | mg/m$^3$ | |
| | STEL | 0.69 | mg/m$^3$ | |
| Formaldehyde | TLV/TWA | 0.37 | mg/m$^3$ | A2 carcinogen |

**Respiratory protection**

In case of risk of over exposure to dust, vapour or fumes during product processing, heat sealing PE film or other operations involving the use of heated wires or blade with surface temperature in the range 300ºC - 600ºC, it is recommended that a local exhaust system is placed above the conversion equipment and the working area must be properly ventilated.

**Hand protection**

Direct contact with PE materials does not normally lead to skin irritation. However, the unnecessary contact with the material must be avoid and employees who have a history of skin disease or allergy should receive medical clearance prior to employment involving direct contact.

**Eye protection**

In case of exposure to dust; it is recommended to wear safety glasses.

**Body protection**

Standard work clothes and safety shoes.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Physical state | Solid |
| Form/colour | Clear to opaque, white to off-white pellets, or coloured pellets (e.g. black, yellow, etc.) |
| Odor | Odorless |
| Density | 915 - 970 kg/m$^3$ (ISO 1872/1) |
| Melting point | 115ºC - 135ºC |
| Softening point | 100ºC - 128ºC |

| | | |
|---|---|---|
| 9 | PHYSICAL AND CHEMICAL PROPERTIES (Continued) | |
| | Flash point | > 340ºC (Estimated) |
| | Auto-ignition temperature | Not applicable |
| | Explosive limits (in air) | Not applicable |
| | Solubility in water | Insoluble |
| | Solubility in other solvent | Aromatics at elevated temperature |
| 10 | STABILITY AND REACTIVITY | |
| | Hazardous polymerisation | No |
| | Conditions to avoid polymerisation | Not applicable |
| | Stability | Stable |
| | Conditions to avoid instability | Temperature above 300ºC may cause resin degradation. |
| | Material and conditions to avoid (incompatibility) | Strong oxidizing agents |
| | Hazardous decomposition products | Carbon Dioxide ($CO_2$), Carbon Monoxide (CO), Flammable Hydrocarbons and Fumes. |
| 11 | TOXICOLOGICAL INFORMATION | |
| | Acute toxicity | No evidence of acute toxicity reported. |
| | Inhalation | Negligible hazard at ambient temperature (-18ºC to 38ºC). Vapours and/or aerosols which may be formed at elevated temperature may be irritating to eyes and respiratory tract. Dust may be irritating to eyes and respiratory tract. |
| | Eye contact | Particulate may scratch eye surface/cause mechanical irritation. Dust may cause transient irritation. |
| | Skin contact | Negligible hazard at ambient temperatures (-18ºC to 38ºC). Exposure to hot material may cause thermal burns. |
| | Ingestion | Minimal toxicity. |
| 12 | ECOLOGICAL INFORMATION | |
| | Mobility | Floats on water |
| | Persistence/degradability | The material is not biodegradable |
| | Bio-Accumulation | The material is not expected to bio-accumulate. |
| | Ecotoxicity | The material is not toxic. |
| 13 | DISPOSAL CONSIDERATIONS | |
| | Waste product disposal | Recover or recycle of possible. Otherwise incinerate in appropriate incineration with energy recovery or dispose in landfills in line with local regulations. |
| | Container disposal | Empty container should be recovered for reuse or recycling or disposed of by incineration or landfill in line with local regulation. |

| 14 | TRANSPORT INFORMATION | |
|---|---|---|
| | Road (ADR)/Rail (RID) | Not restricted for transport |
| | Marine (IMO - IMDG) | Not restricted for transport |
| | Airline (ICAO)/(IATA) | Not restricted for transport |

| 15 | REGULATORY INFORMATION | |
|---|---|---|
| | Labelling and EU classification | Not classified according to EEC Directives 67/548/EEC and 88/379/EEC. |
| | R Phases | Not applicable |
| | S Phases | Not applicable |
| | EINECS Number | Exempt for polymer |
| | EC annex 1 number | Not listed |
| | US TSCA listing | Yes (9002-88-4) |
| | Australian AICS/NICNAS listing | Yes (9002-88-4) |
| | Canadian DSL/NDSL listing | Yes (9002-88-4) |

16 OTHER INFORMATION

MSDS distribution: The information in this document should be made available to all who may handle ETILINAS GRADES.

**IMPORTANT NOTICE :**

Information contained in this document is accurate and reliable to the best of the knowledge and belief of POLYETHYLENE MALAYSIA SDN BHD (PEMSB). The suggestions and recommendations offered herein serve as a guide in the use of these materials, and cannot be guaranteed because the conditions of use are beyond PEMSB's control. PEMSB assumes no responsibility for the use of information supplied, the application, adaptation or processing of the products described herein and hereby disclaims all liability (except as otherwise provided by the law) in regard to such use.