

Product Name: LINEAR LOW DENSITY POLYETHYLENE - Grades designated by LL or LLP prefix
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MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: LINEAR LOW DENSITY POLYETHYLENE - Grades designated by LL or LLP prefix
Product Description: LLDPE without polymer processing aid, see Section 16 for applicable grades.

Intended Use: Coatings, Extrusion and moulding, Film blowing

COMPANY IDENTIFICATION

Supplier: ExxonMobil Chemical Asia Pacific (Regn. No. 52893724C)
(A Division Of ExxonMobil Asia Pacific Pte Ltd - Regn. No. 196800312N)
POLYOLEFINS
1 Harbour Front Place
#06-00 Harbour Front Tower One
Singapore 098633 Singapore

24 Hour Environmental / Health Emergency Telephone **Day Emergency:** +65 6885 8339 / **Night Emergency:** +65 9862 0661
Supplier General Contact +65 6885 8339

Local Contact:

Country	Company Name	Emergency Telephone Number
Australia	ExxonMobil Chemical Australia Pty. Ltd.	+1800 023 005 (24 HOURS)
China	EXXONMOBIL CHEMICAL SERVICES (SHANGHAI) CO., LTD.	+86 21 38966500 / +86 13816136441
Hong Kong	EXXONMOBIL CHEMICAL INTERNATIONAL SERVICES LTD	+86 21 38966500 / +86 13816136441
India	ExxonMobil Company India Pte. Ltd.	+91 9820806508/ +91 9820224112/ +91 9833376110 (24 HOURS)
Japan	EXXONMOBIL YUGEN KAISHA (CHEMICAL DIVISION)	+81 9049109123 (24 HOURS)
Malaysia	ExxonMobil Chemical Malaysia Sdn. Bhd.	+60 3 2053 3555 (24 HOURS)
New Zealand	ExxonMobil Chemical New Zealand Ltd.	+0800 764 766 / 808 444 (24 HOURS)
Republic of Korea	ExxonMobil Chemical Korea	+82 16 394 0936
Taiwan	EXXONMOBIL CHEMICAL TAIWAN	+0800818180 (TOLL FREE)
Thailand	ESSO (THAILAND) PUBLIC COMPANY LIMITED	+662 262 4470 / +66 84 875 9639
Vietnam	ExxonMobil Unique (Vietnam) Co., Ltd.	+84 90 3423143

This (M)SDS is a generic document with no country specific information included.

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

NOTE: The product may contain varying levels of additives such as slip and anti-blocking agents, antioxidants and stabilisers.

SECTION 3 HAZARDS IDENTIFICATION

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This material is not considered to be hazardous according to regulatory guidelines see Section 15.

PHYSICAL / CHEMICAL HAZARDS

High dust levels may create potential for explosion. Spilled pellets present a slipping hazard on hard surfaces. Contact with hot material can cause thermal burns which may result in permanent damage. Material can accumulate static charges which may cause an ignition.

HEALTH HAZARDS

Material is essentially non-toxic. However, if dust is generated, it may scratch the eyes and cause minor irritation to the respiratory tract. When heated, the vapour/fumes given off may cause respiratory tract irritation.

SECTION 4 FIRST AID MEASURES

INHALATION

In case of adverse exposure to vapours and / or aerosols formed at elevated temperatures, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest.

SKIN CONTACT

For hot product: Immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

No adverse effects due to ingestion are expected.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Assure an extended cooling down period to prevent re-ignition. Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply.

Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: High dust levels may create potential for explosion.

Hazardous Combustion Products: Smoke, Fume, Incomplete combustion products, Oxides of carbon, Flammable hydrocarbons

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FLAMMABILITY PROPERTIES

Flash Point [Method]: N/A

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D

Autoignition Temperature: N/A

SECTION 6

ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

SPILL MANAGEMENT

Land Spill: Spilled pellets present a slipping hazard on hard surfaces. **Small Dry Spills:** With clean shovel, place material into clean, dry container and cover loosely; move containers from spill area.

Water Spill: Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewers, basements or confined areas. For Large Spills: Cover spill with plastic sheet or tarpaulin to minimise spreading.

SECTION 7

HANDLING AND STORAGE

HANDLING

Avoid elevated temperatures for prolonged periods of time. Prevent small spills and leakage to avoid slip hazard. Avoid conditions which create dust. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Material can accumulate static charges which may cause an electrical spark (ignition source). Care should be taken when storing and handling this product. Apart from the specific nature of the polymer product, conditions such as humidity, sunlight and temperature have an influence on the way the product behaves during storage and handling. Special attention should be paid to avoid inappropriate stacking of palletised bags or other package units. Indeed, polymer products may be dimensionally unstable under certain conditions. Avoid conditions generating heat during transfer operations.

Loading/Unloading Temperature: [Ambient]

Transport Temperature: [Ambient]

Transport Pressure: [Ambient]

Static Accumulator: This material is a static accumulator.

STORAGE

Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames and

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high temperatures. Do not store in open or unlabelled containers.

Storage Temperature: [Ambient]

Storage Pressure: [Ambient]

Suitable Containers/Packing: Bulk Containers; Hopper Cars; Bags; Boxes; Drums; Octatiner; Silos

Suitable Materials and Coatings (Chemical Compatibility): Aluminium; Polyethylene Bags

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: For dusty conditions, ACGIH recommends for insoluble and poorly soluble particles not otherwise specified an 8-hour TWA of 10 mg/m³ (inhalable particles), 3 mg/m³ (respirable particles). Product may also contain varying levels of additives, such as slip and antiblocking agents (talc or silica), antioxidants, stabilizers, and corrosion inhibitors. Certain grades may contain cristobalite, a form of crystalline silica, as an additive that is encapsulated in the polymer. Inhaled crystalline silica in an occupational environment is recognized as a known human carcinogen. However, the potential for release of silica to the air when this polymer is handled has been assessed and the encapsulated silica within the polymer is not expected to pose a health hazard when processed under normal conditions of use.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Adequate ventilation should be provided so that exposure limits are not exceeded. **SPECIAL PRECAUTIONS:** Should significant vapours/fumes be generated during thermal processing of this product, it is recommended that work stations be monitored for the presence of thermal degradation by-products which may evolve at elevated temperatures (for example, oxygenated components). Processors of this product should assure that adequate ventilation or other controls are used to control exposure. It is recommended that the current ACGIH-TLVs for thermal degradation by-products be observed. Contact your local sales representative for further information.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Half-face filter respirator

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove



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manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If product is hot, thermally protective, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

If product is hot, thermally protective, chemical resistant apron and long sleeves are recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9	PHYSICAL AND CHEMICAL PROPERTIES
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Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Solid
Form: Pellet, Granule, Powder
Colour: Clear to Opaque, White to Off-White
Odour: None to Mild
Odour Threshold: N/A

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 0.9 - 0.95
Bulk Density: 0.4 g/cc at 20 °C - 1 g/cc at 20 °C
Flash Point [Method]: N/A
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/A
Boiling Point / Range: N/A
Vapour Density (Air = 1): N/A
Vapour Pressure: N/A
Evaporation Rate (n-butyl acetate = 1): N/A
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/A
Solubility in Water: Negligible
Viscosity: N/A
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

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Freezing Point: N/D
Melting Point: 115°C (239°F) - 130°C (266°F)
Molecular Weight: > 25000
Hygroscopic: No

SECTION 10	STABILITY AND REACTIVITY
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STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid elevated temperatures for prolonged periods of time.

MATERIALS TO AVOID: Strong oxidisers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11	TOXICOLOGICAL INFORMATION
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ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity: Data available.	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: Data available.	Negligible hazard at ambient/normal handling temperatures. Based on test data for structurally similar materials.
Ingestion	
Toxicity: Data available.	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity: Data available.	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS

For the product itself:

Dust may be irritating to the eyes and respiratory tract.
 Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes and respiratory tract.
 Contains additives that are encapsulated in the polymer. Under normal conditions of processing and use the encapsulated additives are not expected to pose a health hazard, however, grinding of the polymer is not recommended.

Additional information is available by request.

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IARC Classification:

The following ingredients are cited on the lists below: None

1 = IARC 1

–REGULATORY LISTS SEARCHED–

2 = IARC 2A

3 = IARC 2B

SECTION 12	ECOLOGICAL INFORMATION
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The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

Material -- Not expected to be harmful to terrestrial organisms.

MOBILITY

Material -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be persistent.

Hydrolysis:

Material -- Transformation due to hydrolysis not expected to be significant.

Photolysis:

Material -- Transformation due to photolysis not expected to be significant.

Atmospheric Oxidation:

Material -- Transformation due to atmospheric oxidation not expected to be significant.

BIOACCUMULATION POTENTIAL

Material -- Potential to bioaccumulate is low.

SECTION 13	DISPOSAL CONSIDERATIONS
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Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

SECTION 14	TRANSPORT INFORMATION
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LAND: Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA): Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
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Material is not hazardous as defined by the EU Dangerous Substances/Preparations Directives.

EU LABELING: Not regulated according to EC Directives

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Complies with the following national/regional chemical inventory requirements: EINECS, TSCA

Contact Sales / Marketing group for complete chemical inventory listing applicable to product.

SECTION 16	OTHER INFORMATION
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N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:

- Hazard Identification: Health Hazards - Header was modified.
- Section 01: Company Mailing Address was modified.
- Section 11: Acute Toxicity Table Header was modified.
- Section 09: Physical State was modified.
- Section 11: Inhalation - Header was modified.
- Section 09: Evaporation Rate - Header was modified.
- Section 09: Vapour Pressure - Header was modified.
- Section 07: Handling and Storage - Storage Phrases was modified.
- Section 01: Company Mailing Address was modified.
- Hazard Identification: Physical/Chemical Hazard was modified.
- Section 07: Suitable Materials and Coatings - Header was modified.
- Section 11: Dermal Lethality Test Comment was modified.
- Section 06: Accidental Release - Spill Management - Water was modified.
- Section 14: Sea (IMDG) - Header was modified.
- Section 14: Air (IATA) - Header was modified.
- Section 14: Sea (IMDG) - Default was modified.
- Section 14: Air (IATA) - Default was modified.

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Composition: Footnotes was modified.
Section 11: Chronic Tox - Product was modified.
Section 09: Oxidizing Properties was modified.
Section 01: Company Mailing Address - Former Name was modified.
Section 11: Tox Table - Header was modified.
Section 01: Secondary Companies was modified.
Section 01: Indent Secondary Companies Table was modified.
Section 01: Product Code - Header was deleted.

THIS SDS COVERS THE FOLLOWING MATERIALS: Linear Low Density PE grades for which the grade name consists of a base polymer designated by a LL or LLP prefix followed by a suffix referring to an additive package. Applicable designations follow. | Base polymers : | LL 1000S | LL 1001 | LL 1002 | LL 1004 | LL 1015 | LL 1030 | LL 1201 | LL 1433 | LL 3000S | LL 3001 | LL 3002 | LL 3003 | LL 3113 | LL 3201 | LL 3402 | LL 3403 | LL 3404 | LL 3405 | LL 4004 | LL 5002 | LL 5100 | LL 5202 | LL 5252 | LL 60 | LL 6021 | LL 6100 | LL 6101 | LL 6201 | LL 6202 | LL 6235 | LL 6301 | LL 6407 | LL 8360 | LL 8446 | LL 8450 | LL 8455 | LL 8460 | LL 3201 | LL 8501 | LL 8555 | LLP 8360 | LLP 8450 | LLP 8455 | LLP 8460 | LLP 8470 | LLP 8555 | Possible additive packages : | 09 | 17 | 17BG | 19 | 19BG | 21 | 22 | 24 | 25 | 28 | 29 | 31 | 32 | 38 | 39 | 42 | 43 | 45 | 46 | 47 | 48 | 55 | 67 | 74 | 77 | 79 | 80 | 82 | BG | EL | KI | KW | RQ | X29 | X59 | X72 | X74 | X75 | X76 | XR | XV | XW1 | XW2 | XZ1 | XZ2 | YB | YM | YMEX | ZA | ZB | ZZ

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