

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.  
**Product Code:** 19889  
**Intended Use:** Coatings, Extrusion and moulding, Film blowing

#### COMPANY IDENTIFICATION

**Supplier:** CIOL - EXXONMOBIL CHEMICAL CANADA  
Division of Canada Imperial Oil Limited, an Affiliate of Exxon Mobil Corporation  
240 4TH AVENUE S.W.  
CALGARY, ALBERTA. T2P 3M9 Canada  
**24 Hour Health Emergency** 519-339-2145  
**Transportation Emergency Phone** 519-339-2145  
**Product Technical Information** 800-668-0177

### 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 antiblocking agents, antioxidants and stabilizers.

### SECTION 3

### HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

#### POTENTIAL PHYSICAL / CHEMICAL EFFECTS

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.

#### POTENTIAL HEALTH EFFECTS

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

<b>NFPA Hazard ID:</b>	Health: 1	Flammability: 1	Reactivity: 0
<b>HMIS Hazard ID:</b>	Health: 1	Flammability: 1	Reactivity: 0

### SECTION 4

### FIRST AID MEASURES

#### INHALATION

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In case of adverse exposure to vapors 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 (CO<sub>2</sub>) 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 runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters 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

#### 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. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

#### SPILL MANAGEMENT

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**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 it 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 minimize 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 palletized 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

The container choice, for example storage vessel, may effect static accumulation and dissipation. Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames, and 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; Octatainer; Silos

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

## SECTION 8

## EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure limits/standards for materials that can be formed when handling this product:** For dusty conditions,

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OSHA recommends for particulates not otherwise regulated an 8-hour TWA of 15 mg/m<sup>3</sup> (total dust), 5 mg/m<sup>3</sup> (respirable fraction); ACGIH recommends for insoluble and poorly soluble particles not otherwise specified an 8-hour TWA of 10 mg/m<sup>3</sup> (inhalable particles), 3 mg/m<sup>3</sup> (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 vapors/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/vapor 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 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:

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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

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  
**Color:** Clear to Opaque, White to Off-White  
**Odor:** None to Mild  
**Odor 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  
**Vapor Density (Air = 1):** N/A  
**Vapor 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

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

## SECTION 10 STABILITY AND REACTIVITY

**STABILITY:** Material is stable under normal conditions.

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

**MATERIALS TO AVOID:** Strong oxidizers

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**HAZARDOUS DECOMPOSITION PRODUCTS:** Material does not decompose at ambient temperatures.**HAZARDOUS POLYMERIZATION:** Will not occur.**SECTION 11 TOXICOLOGICAL INFORMATION****ACUTE TOXICITY**

<u>Route of Exposure</u>	<u>Conclusion / Remarks</u>
<b>Inhalation</b>	
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.
<b>Ingestion</b>	
Toxicity: Data available.	Minimally Toxic. Based on test data for structurally similar materials.
<b>Skin</b>	
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.
<b>Eye</b>	
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 vapors, 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.

**The following ingredients are cited on the lists below:** None.**--REGULATORY LISTS SEARCHED--**

1 = NTP CARC

3 = IARC 1

5 = IARC 2B

2 = NTP SUS

4 = IARC 2A

6 = OSHA CARC

**SECTION 12 ECOLOGICAL INFORMATION**

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

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## 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.

## REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

SECTION 14	TRANSPORT INFORMATION
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**LAND (DOT):** Not Regulated for Land Transport

**LAND (TDG):** Not Regulated for Land Transport

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

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**AIR (IATA):** Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
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**OSHA HAZARD COMMUNICATION STANDARD:** When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

**NATIONAL CHEMICAL INVENTORY LISTING:** EINECS, TSCA

**EPCRA:** This material contains no extremely hazardous substances.

**CWA / OPA:** Plastic pellets are defined by the US EPA under the Clean Water Act (40CFR122.26) as a "significant material" which requires any industrial plant that may expose pellets to storm water to secure a storm water permit. Violations of the rule carry the same penalties as other Clean Water Act violations. Pellets found in storm water runoff are subject to EPA regulations with the potential for substantial fines and penalties.

**SARA (311/312) REPORTABLE HAZARD CATEGORIES:** None.

**SARA (313) TOXIC RELEASE INVENTORY:** This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

**The following ingredients are cited on the lists below:\*** None.

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

\* EPA recently added new chemical substances to its TSCA Section 4 test rules. Please contact the supplier to confirm whether the ingredients in this product currently appear on a TSCA 4 or TSCA 12b list.

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:

Section 10 Stability and Reactivity - Header was modified.

Section 13: Disposal Recommendations - Note was modified.

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Section 08: Personal Protection was modified.  
Section 07: Handling and Storage - Storage Phrases was modified.  
Hazard Identification: Physical/Chemical Hazard was modified.  
Section 07: Loading/Unloading Temperature C(F) was modified.  
Section 07: Transport Temperature C(F) was modified.  
Section 07: Transport Pressure kPa was modified.  
Section 07: Storage Temperature C(F) was modified.  
Section 07: Storage Pressure kPa was modified.  
Section 07: Suitable Materials and Coatings - Header was modified.  
Section 11: Dermal Lethality Test Comment was modified.  
Section 05: Hazardous Combustion Products was modified.  
Section 06: Accidental Release - Spill Management - Water was modified.  
Section 09: Relative Density - Header was modified.  
Section 08: Hand Protection was modified.  
Section 14: Sea (IMDG) - Header was modified.  
Section 14: Air (IATA) - Header was modified.  
Section 14: LAND (TDG) - Header was modified.  
Section 14: LAND (DOT) - Header was modified.  
Section 15: List Citation Table - Header was modified.  
Section 14: LAND (DOT) - Default was modified.  
Section 14: LAND (TDG) Default was modified.  
Section 14: Sea (IMDG) - Default was modified.  
Section 14: Air (IATA) - Default was modified.  
Section 15: National Chemical Inventory Listing was modified.  
Section 08: Exposure limits/standards was modified.  
Section 15: OSHA Hazard Communication Standard was modified.  
Hazard Identification: OSHA - May be Hazardous Statement was modified.  
Section 06: Notification Procedures was modified.  
Composition: Footnotes was modified.  
Section 11: Chronic Tox - Product was modified.  
Section 09: Oxidizing Properties was modified.

**THIS MSDS 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 8470 | 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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