Material Safety Data Sheet

MARLEX® and MARFLEX™ POLYETHYLENES (All Grades Except CL, L, R and Masterbatch Series)

August 3, 2001

MSDS #: 240370
Revision: 2

COMPANY IDENTIFICATION
CHEVRON PHILLIPS CHEMICAL COMPANY LP
10001 Six Pines Drive
The Woodlands,Tx 77380

EMERGENCY TELEPHONE NUMBERS
Emergency: (800) 231-0623 or
(510) 231-0623 (International)
TRANSPORTATION (24 HR): CHEMTREC
(800)424-9300 OR (703)527-3887
Technical Services: (800) 852-5531
For Additional MSDSs: (800) 852-5530

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Synonyms:	Plastic
Chemical Name:	Ethene, Homopolymer; 1-Butene, Polymer with Ethene; 1-Hexene, Polymer with Ethene; Ethylene Polymers & Copolymers plus Additives
Chemical Family:	Olefin Polymers and Copolymers plus Additives
Chemical Formula:	Mixture
CAS Reg. No.:	Mixture-See Section B for ingredient CAS Reg. No.
Product No.:	Marlex BHN, BMN, DTR, DTR-F, EHM, HHM, HHN, HMN, HXM, HXB, B, C, D, H, J, K, PE, HiD, mPact, Vytek, Dynex, LX, ER, TD, and DS Series. As well as YYY and YYY-F (where Y is a number from 1 to 10) Series.

PRODUCT USE:
MEDICAL APPLICATION CAUTION: Do not use this Chevron Phillips Chemical material in medical applications involving permanent implantation in the human body or permanent contact with internal body fluids or tissues.

Do not use this Chevron Phillips Chemical material in medical applications involving brief or temporary implantation in the human body or contact with internal body fluids or tissues unless the material has been provided directly from Chevron Phillips Chemical under a contract which expressly acknowledges the contemplated use.

Chevron Phillips Chemical makes no representation, promise, express warranty or implied warranty concerning the suitability of this material

for use in implantation in the human body or in contact with internal body fluid or tissues.

Product and/or Components Entered on EPA's TSCA Inventory: Yes
This product is in U.S. commerce, and is listed in the Toxic Substances Control Act (TSCA) Inventory of Chemicals; hence, it may be subject to applicable TSCA provisions and restrictions.

Canadian Inventory Listing Status: DSL
All ingredients are listed in the Domestic Substances List (DSL). Impurities are exempt in accordance with Section 3 of the Canadian Environmental Protection Act (CEPA).

2. COMPOSITION/INFORMATION ON INGREDIENTS

This product, as shipped by Chevron Phillips Chemical Company LP, does not meet the definition of a hazardous material as given in 29 CFR Part 1910.1200 (OSHA). Information on this form is furnished as a customer service.

Ingredients	CAS Number	% By Wt.	OSHA PEL*	ACGIH TLV*
Polyethylene or	9002-88-4	99	NE	NE
Polyethylene-Butene Copolymer	25087-34-7	99	NE	NE
Ethylene-Hexene-1 Copolymer	25213-02-9	99	NE	NE
Additives	Various	<4	NE	NE

3. HAZARDS IDENTIFICATION

********** **EMERGENCY OVERVIEW** **********

Opaque, translucent, colorless pellets or fluff

- A HAZARD WARNING IS NOT REQUIRED FOR THIS PRODUCT UNDER OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

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Recommended Exposure Limits:

Control as Particulate Not Otherwise Classified (PNOC) or Regulated:

	OSHA PEL	ACGIH TLV*
Respirable Fraction	5 mg/m3	3 mg/m3
Total Dust	15 mg/m3	10 mg/m3

* The value is for inhalable (total) particulate matter containing no

asbestos and <1% crystalline silica.

_X_ Based on information presently available, this product does not meet any of the hazard definitions of 29 CFR Section 1910.1200.

Specify: No known applicable information for Canadian "Health Hazard Categories".

Other: Thermal decomposition products formed during thermal processing are expected to be irritating to the eyes.

Formaldehyde, A probable human carcinogen, may be formed at extrusion temperatures.

IMMEDIATE HEALTH EFFECTS

EYE:

Not expected to cause prolonged or significant eye irritation. Dust may cause mechanical irritation. If this material is heated, thermal burns may result from eye contact.

SKIN:

Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin. If this material is heated, thermal burns may result from skin contact.

INGESTION:

Not expected to be harmful if swallowed.

INHALATION:

Not expected to be harmful if inhaled. If this material is heated, fumes may be unpleasant and produce nausea and irritation of the upper respiratory tract. Inhalation: Dust may produce mechanical irritation to the mucous membranes of the nose, throat and upper respiratory tract.Long term exposure to high dust concentrations may cause non-debilitating lung changes.

SIGNS AND SYMPTOMS OF EXPOSURE:

Thermal burns to the eye: may include pain, tearing, reddening, swelling, and impaired vision. Thermal burns to the skin: may include pain or feeling of heat, discoloration, swelling, and blistering. Respiratory irritation: may include coughing and difficulty breathing.

At extrusion temperatures (>350F, >177C), polyethylenes can release vapors and gases which are irritating to the muccus membranes of the eyes, mouth, throat, and lungs. These substances may include acetaldehyde, acetone, acetic acid, formic acid, formaldehyde and acrolein. Generally these irritant effects are all transitory. However, prolonged exposure to irritating off gases can lead to pulmonary edema. Adequate ventilation should prevent sensory discomfort. Based on animal data and limited epidemiological evidence, NTP, IARC(2A), and OSHA have listed Formaldehyde as a probable human carcinogen.

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4. FIRST AID MEASURES

EYE:

If heated material should splash into eyes, flush eyes immediately with

fresh water for 15 minutes while holding the eyelids open. Remove contact lenses, if worn. Get immediate medical attention.

SKIN:

If the hot material gets on skin, quickly cool in water. See a doctor for extensive burns. Do not try to peel the solidified material from the skin or use solvents or thinners to dissolve it. The use of vegetable oil or mineral oil is recommended for removal of this material from the skin.

INGESTION:

No specific first aid measures are required because this material is not expected to be harmful if swallowed.

INHALATION:

Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.

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5. FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

Classification (29 CFR 1910.1200): Not flammable or combustible.

FLAMMABLE PROPERTIES:

FLASH POINT: 645F (340C) ASTM (D1929)
AUTOIGNITION: 716F (380C)
FLAMMABILITY LIMITS (% by volume in air): Lower: NA Upper: NA
EXTINGUISHING MEDIA:
C02, dry chemical, foam and water fog

NFPA RATINGS: Health 0; Flammability 1; Reactivity 0.

FIRE FIGHTING INSTRUCTIONS:

This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus (NIOSH SCBA).

If possible, water should be applied as a spray from a fogging nozzle since this is a surface burning material. The application of high velocity water will spread the burning surface layer.

COMBUSTION PRODUCTS:

Normal combustion forms carbon dioxide, water vapor and may produce carbon monoxide, original monomer, other hydrocarbons and hydrocarbon oxidation products, depending on temperature and air availability.

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6. ACCIDENTAL RELEASE MEASURES

CHEMTREC EMERGENCY NUMBER (24 hr): (800)424-9300 or (703)527-3887
International Collect Calls Accepted

ACCIDENTAL RELEASE MEASURES:

Sweep up material and place in a disposable container. If liquid material is spilled, allow it to cool and solidify before proceeding with disposal methods. Contain spill and control dusts. Keep out of water sources and sewers. Spilled pellets can create slipping hazard. Sweep or vacuum up spill and place in drums for recovery or disposal.

7. HANDLING AND STORAGE

Avoid contact of heated material with eyes, skin, and clothing. Avoid breathing vapor or fumes from heated material.

Bulk storage of polyethylene pellets may result in accumulation of ethylene gas with possible explosion potential. Keep concentrations of ethylene gas below the lower explosive limit (LEL) of 2.7%.

Airborne dust concentrations above 20 mg/l may create a dust explosion hazard. Avoid inhalation of product dust (fines). Avoid eye contact with product dust. Avoid inhalation of, and eye contact with, off gases which may be produced during thermal processing. Do not get molten material in eyes, on skin or on clothing. Process only with adequate ventilation. Wash thoroughly after handling. Launder exposed clothing before reuse.

Thermal decomposition processing off gas condensate may form on surrounding equipment. Impervious gloves and apron should be used when cleaning condensate from equipment.

Store away from heat or flames.

Molten polymer may cause severe thermal burns. The interior of molten masses may remain hot for some time because of low thermal conductivity of the polymer. Use care when disposing of or handling such masses.

Spilled pellets may create a slipping hazard.

Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Bond and ground all containers and equipment before transfer operations to prevent electrostatic accumulation hazard.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS
Use in a well-ventilated area. If heated material generates vapor, or fumes, use process enclosures, local exhaust ventilation, or other engineering controls to control exposure. Ventilation requirements must

be locally determined. If handling results in dust generation, special ventilation may be needed to ensure that dust exposure does not exceed the OSHA PEL for nuisance dust.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION:

Wear safety glasses with side shields when working with this material as a good safety practice. If this material is heated, wear chemical goggles or safety glasses and a face shield.

VENTILATION:

Use adequate ventilation to control below recommended exposure levels. Supplemental ventilation may be needed to control off gases which may be produced during thermal processing.

SKIN PROTECTION:

Wear protective clothing to minimize skin contact as a good industrial hygiene practice. Selection of protective clothing will depend on operations conducted. Use heat resistant gloves when handling hot material. Use impervious gloves and apron when cleaning thermal decomposition processing off gas condensate from equipment.Consider physical requirements and other substanceswhen selecting protective clothing.

RESPIRATORY PROTECTION:

No special respiratory protection is normally required. When cutting or abrading these materials use a respirator approved by IOSH for protection against dust, mists and fumes having an exposure limit measured as a time weighted average (TWA) of not less than 0.05 mg/m3.When vapors or fumes from the heated material are not adequately controlled, wear a NIOSH/MSHA approved respirator. Use the following elements for air-purifying respirators: Organic Vapor and Formaldehyde.

NOTE: Personal protection information is based upon general information as to normal uses and conditions. Where special orunusual uses or conditions exist, it is suggested that the expertassistance of an industrial hygienist or other qualified professional be sought.

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9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION:
Opaque, translucent, colorless pellets or fluff

pH:	NA
VAPOR PRESSURE:	NA
VAPOR DENSITY (AIR=1):	NA
BOILING POINT:	NA
MELTING POINT:	100 - 135C
SOLUBILITY:	Insoluble in water
SPECIFIC GRAVITY:	0.91 - 1.02
DENSITY:	0.910 - 0.970 g/cm3
EVAPORATION RATE:	NA
PERCENT VOLATILE (VOL):	0.01%

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10. STABILITY AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS:
Low molecular weight hydrocarbons, alcohols, aldehydes, acids, carbon oxides and ketones can be formed during thermal processing.
CHEMICAL STABILITY:
Stable.
CONDITIONS TO AVOID:
Avoid heating above the recommended processing temperature. Do not heat above the autoignition temperature. Do not heat without adequate ventilation.
INCOMPATIBILITY WITH OTHER MATERIALS:
May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc. May react with free halogens.
HAZARDOUS POLYMERIZATION:
Polymerization will not occur.

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11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:
The eye irritation hazard is based on data for a similar material.
SKIN EFFECTS:
The skin irritation hazard is based on data for a similar material. The acute dermal toxicity is based on data for a similar material.
ACUTE ORAL EFFECTS:
The acute oral toxicity is based on data for a similar material.
ACUTE INHALATION EFFECTS:
The acute respiratory toxicity is based on data for a similar material.
ADDITIONAL TOXICOLOGY INFORMATION:
A similar material did not cause skin sensitization in a patch test study with human subjects.

This product contains polymerized ethylene. During thermal processing, this polymer can degrade. The three variables which control its degradation are the temperature, the length of time at that temperature, and the amount of oxygen available. Depending on the local processing conditions, a variety of low molecular weight hydrocarbons, alcohols, aldehydes, acids, and ketones can be formed. These materials are respiratory irritants. Prolonged and repeated breathing of fume components has been shown to cause other adverse health effects. Exposure to processing emissions should be minimized by following all recommendations in this MSDS.

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12. ECOLOGICAL INFORMATION

ECOTOXICITY:
Fish or birds may eat pellets which may obstruct their digestive tracts.
ENVIRONMENTAL FATE:
This material is not expected to be readily biodegradable.

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13. DISPOSAL CONSIDERATIONS

Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. Contact local environmental or health authorities for approved disposal of this material. Recover for reuse, recycle, incinerate for energy or place in waste management facility. Prior to disposal, consult your environmental contact to determine if the TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

14. TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT SHIPPING NAME: NOT DESIGNATED AS A HAZARDOUS MATERIAL BY THE FEDERAL DOT
DOT HAZARD CLASS: NOT APPLICABLE
DOT IDENTIFICATION NUMBER: NOT APPLICABLE
DOT PACKING GROUP: NOT APPLICABLE

15. REGULATORY INFORMATION

SARA 311 CATEGORIES:

1. Immediate (Acute) Health Effects: NO
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: NO
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01=SARA 313	11=NJ RTK	22=TSCA Sect 5(a)(2)
02=MASS RTK	12=CERCLA 302.4	23=TSCA Sect 6
03=NTP Carcinogen	13=MN RTK	24=TSCA Sect 12(b)
04=CA Prop 65-Carcin	14=ACGIH TWA	25=TSCA Sect 8(a)
05=CA Prop 65-Repro Tox	15=ACGIH STEL	26=TSCA Sect 8(d)
06=IARC Group 1	16=ACGIH Calc TLV	27=TSCA Sect 4(a)
07=IARC Group 2A	17=OSHA PEL	28=Canadian WHMIS
08=IARC Group 2B	18=DOT Marine Pollutant	29=OSHA CEILING
09=SARA 302/304	19=Chevron TWA	30=Chevron STEL
10=PA RTK	20=EPA Carcinogen	

None of the listed components of this material are found on the regulatory lists indicated.

16. OTHER INFORMATION

NFPA RATINGS: Health 0; Flammability 1; Reactivity 0;
HMIS RATINGS: Health 0; Flammability 1; Reactivity 0;
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal

Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT:
This revision updates entire MSDS.

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	TPQ - Threshold Planning Quantity
RQ - Reportable Quantity	PEL - Permissible Exposure Limit
C - Ceiling Limit	CAS - Chemical Abstract Service Number
A1-5 - Appendix A Categories	() - Change Has Been Proposed
NDA - No Data Available	NA - Not Applicable

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the EHS Product Stewardship Group, Chevron Phillips Chemical Company LP, 1301 McKinney, Houston, TX 77010.
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