SAFETY DATA SHEET

Marlex® HHM 5502-01ST Polyethylene


SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product information
Product Name: Marlex® HHM 5502-01ST Polyethylene
Material: 1080884, 1079832, 1080882, 1080883, 1080881, 1080880,
1019366, 1019362, 1019363, 1019364, 1019365, 1019361,
1018801, 1018800, 1018082, 1018086, 1018799, 1018798,
1018797, 1018802

1.2 EC-No. Registration number

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Legal Entity Registration number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene</td>
<td>74-85-1</td>
<td>200-815-3 601-010-00-3</td>
<td>Chevron Phillips Chemical Company LP 01-2119462827-27-0004</td>
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<tr>
<td>1-Hexene</td>
<td>592-41-6</td>
<td>209-753-1</td>
<td>Chevron Phillips Chemical Company LP 01-2119475505-34-0005</td>
</tr>
</tbody>
</table>

1.3 Details of the supplier of the safety data sheet
Company: Chevron Phillips Chemical Company LP
10001 Six Pines Drive
The Woodlands, TX 77380

Local: Chevron Phillips Chemicals International N.V.
Airport Plaza (Stockholm Building)
Leonardo Da Vinciæaan 19
1831 Diegem
Belgium

SDS Requests: (800) 852-5530
Technical Information: (832) 813-4862
Responsible Party: Product Safety Group
Email:sds@cpchem.com

1.4
SDS Number: 1000000000722
MEDICAL APPLICATION CAUTION: Do not use this material in medical applications involving permanent implantation in the human body or permanent contact with internal body fluids or tissues.

Do not use this 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 Company LP or its legal affiliates under an agreement which expressly acknowledges the contemplated use.

Chevron Phillips Chemical Company LP and its legal affiliates 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 fluids or tissues.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
REGULATION (EC) No 1272/2008

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

2.2 Labeling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

SECTION 3: Composition/information on ingredients

3.1 - 3.2 Substance or Mixture

<table>
<thead>
<tr>
<th>Chemical ingredients</th>
<th>CAS-No.</th>
<th>Classification (REGULATION (EC) No 1272/2008)</th>
<th>Concentration [wt%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene Hexene Copolymer</td>
<td>25213-02-9</td>
<td></td>
<td>99 - 100</td>
</tr>
</tbody>
</table>

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Version 1.5

| Revision Date | 2019-10-16 |

Contains no hazardous ingredients according to GHS.

**SECTION 4: First aid measures**

<table>
<thead>
<tr>
<th>4.1 Description of first-aid measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>If inhaled</strong></td>
</tr>
<tr>
<td><strong>In case of skin contact</strong></td>
</tr>
<tr>
<td><strong>In case of eye contact</strong></td>
</tr>
<tr>
<td><strong>If swallowed</strong></td>
</tr>
</tbody>
</table>

**SECTION 5: Firefighting measures**

<table>
<thead>
<tr>
<th>5.1 Extinguishing media</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flash point</strong></td>
</tr>
<tr>
<td><strong>Autoignition temperature</strong></td>
</tr>
<tr>
<td><strong>Suitable extinguishing media</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5.2 Special hazards arising from the substance or mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specific hazards during firefighting</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5.3 Advice for firefighters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Special protective equipment for fire-fighters</strong></td>
</tr>
<tr>
<td><strong>Further information</strong></td>
</tr>
<tr>
<td><strong>Fire and explosion protection</strong></td>
</tr>
</tbody>
</table>

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Revision Date 2019-10-16

| Hazardous decomposition products | Normal combustion forms carbon dioxide, water vapor and may produce carbon monoxide, other hydrocarbons and hydrocarbon oxidation products (ketones, aldehydes, organic acids) depending on temperature and air availability. Incomplete combustion can also produce formaldehyde. |

**SECTION 6: Accidental release measures**

6.1 **Personal precautions, protective equipment and emergency procedures**

Personal precautions: Sweep up to prevent slipping hazard. Avoid breathing dust. Avoid dust formation.

6.2 **Environmental precautions**

Environmental precautions: Do not contaminate surface water. Prevent product from entering drains.

6.3 **Methods and materials for containment and cleaning up**

Methods for cleaning up: Clean up promptly by sweeping or vacuum.

Additional advice: Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

6.4 **Reference to other sections**

**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**

Handling

- Advice on safe handling: Use good housekeeping for safe handling of the product. Keep out of water sources and sewers. Spilled pellets and powders may create a slipping hazard.

Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary, but may not by themselves be sufficient. At elevated temperatures (>350°F, >177°C), polyethylene can release vapors and gases, which are irritating to the mucous membranes of the eyes, mouth, throat, and lungs. These substances may include acetaldehyde, acetone, acetic acid, formic acid, formaldehyde and acrolein. Based on animal data and limited epidemiological evidence, formaldehyde has been listed as a carcinogen. Following all recommendations within this SDS should minimize exposure to thermal processing emissions.

- Advice on protection against fire and explosion: Treat as a solid that can burn. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion.

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4/12
7.2 Conditions for safe storage, including any incompatibilities

Storage

Requirements for storage areas and containers: Keep in a dry place. Keep in a well-ventilated place.

Advice on common storage: Do not store together with oxidizing and self-igniting products.

SECTION 8: Exposure controls/personal protection

8.2 Exposure controls

Engineering measures

Consider the potential hazards of this material (see Section 2), 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.

Personal protective equipment

Respiratory protection: No respiratory protection is normally required. If heated material generates vapor or fumes that are not adequately controlled by ventilation, wear an appropriate respirator. Use the following elements for air-purifying respirators: Organic Vapor and Formaldehyde. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection. Dust safety masks are recommended when the dust concentration is excessive.

Eye protection: Use of safety glasses with side shields for solid handling is good industrial practice. If this material is heated, wear chemical goggles or safety glasses with side shields or a face shield. If there is potential for dust, use chemical goggles.

Skin and body protection: At ambient temperatures use of clean and protective clothing is good industrial practice. If the material is heated or molten, wear thermally insulated, heat-resistant gloves that are able to withstand the temperature of the molten product. If this material is heated, wear insulated clothing to prevent skin contact if engineering controls or work practices are not adequate.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
Marlex® HHM 5502-01ST Polyethylene

Appearance
Form : Pellets
Physical state : Solid
Color : Opaque
Odor : Mild to no odor
Odor Threshold : No data available

Safety data
Flash point : No data available
Lower explosion limit : Not applicable
Upper explosion limit : Not applicable
Autoignition temperature : No data available
Thermal decomposition : Low molecular weight hydrocarbons, alcohols, aldehydes, acids and ketones can be formed during thermal processing.

pH : Not applicable
Melting point/range : 90 - 140 °C (194 - 284 °F)
Melting point/freezing point : Not applicable
Initial boiling point and boiling range : Not applicable
Vapor pressure : Not applicable
Relative density : Not applicable
Density : 0.91 - 0.97 g/cm³

Water solubility : Negligible
Partition coefficient: n-octanol/water : No data available
Solubility in other solvents : No data available
Viscosity, dynamic : Not applicable
Viscosity, kinematic : Not applicable
Relative vapor density : Not applicable
Evaporation rate : Not applicable

Please refer to the Technical Data Sheet (TDS) for more detailed information relating to the nominal physical properties, including density, of this polyethylene resin grade.
SECTION 10: Stability and reactivity

10.1 Reactivity

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

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

10.4 Conditions to avoid

Avoid prolonged storage at elevated temperature.

10.5 Materials to avoid

Avoid contact with strong oxidizing agents.

Thermal decomposition

Low molecular weight hydrocarbons, alcohols, aldehydes, acids and ketones can be formed during thermal processing.

10.6 Hazardous decomposition products

Normal combustion forms carbon dioxide, water vapor and may produce carbon monoxide, other hydrocarbons and hydrocarbon oxidation products (ketones, aldehydes, organic acids) depending on temperature and air availability. Incomplete combustion can also produce formaldehyde.

Other data

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Marlex® HHM 5502-01ST Polyethylene

Acute oral toxicity : Presumed Not Toxic

Marlex® HHM 5502-01ST Polyethylene

Acute inhalation toxicity : Presumed Not Toxic

Marlex® HHM 5502-01ST Polyethylene

Acute dermal toxicity : Presumed Not Toxic

Marlex® HHM 5502-01ST Polyethylene

Skin irritation : No skin irritation
Marlex® HHM 5502-01ST Polyethylene

Eye irritation: No eye irritation

Sensitization: Did not cause sensitization on laboratory animals.

Further information: This product contains POLYMERIZED OLEFINS. During thermal processing (>350°F, >177°C) polyolefins can release vapors and gases (aldehydes, ketones and organic acids) which are irritating to the mucous membranes of the eyes, mouth, throat, and lungs. Generally these irritant effects are all transitory. However, prolonged exposure to irritating off-gases can lead to pulmonary edema. Formaldehyde (an aldehyde) has been classified as a carcinogen based on animal data and limited epidemiological evidence.

SECTION 12: Ecological information

12.1 Toxicity
Ecotoxicity effects

12.2 Persistence and degradability
Biodegradability: This material is not expected to be readily biodegradable.

12.3 Bioaccumulative potential
Elimination information (persistence and degradability)
Bioaccumulation: Does not bioaccumulate.

12.4 Mobility in soil
Mobility: The product is insoluble and floats on water.

12.5 Results of PBT and vPvB assessment

12.6 Other adverse effects
Additional ecological information: This material is not expected to be harmful to aquatic organisms. Fish or birds may eat pellets which may obstruct their digestive tracts.

Ecotoxicology Assessment
Short-term (acute) aquatic hazard: This product has no known ecotoxicological effects.
Long-term (chronic) aquatic hazard: This product has no known ecotoxicological effects.
SECTION 13: Disposal considerations

13.1 Waste treatment methods
The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14: Transport information

14.1 - 14.7 Transport information
The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

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

Water contaminating class : nwg  not water endangering
(Germany)

15.2

Major Accident Hazard Legislation
: 96/82/EC  Update: 2003
Directive 96/82/EC does not apply

: ZEU_SEVES3  Update:
Not applicable

Notification status
Europe  REACH : On the inventory, or in compliance with the inventory
Switzerland  CH INV : On the inventory, or in compliance with the inventory
United States of America (USA) : On or in compliance with the active portion of the TSCA inventory
Canada  DSL : All components of this product are on the Canadian DSL
Australia  AICS : On the inventory, or in compliance with the inventory
New Zealand  NZIoC : On the inventory, or in compliance with the inventory
Japan  ENCS : On the inventory, or in compliance with the inventory
Korea  KECI : A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance.

Philippines  PICCS : On the inventory, or in compliance with the inventory
China  IECSC : On the inventory, or in compliance with the inventory
Taiwan  TCSI : On the inventory, or in compliance with the inventory
NFPA Classification : Health Hazard: 0  
Fire Hazard: 1  
Reactivity Hazard: 0

Further information
Legacy SDS Number : 240370

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

<table>
<thead>
<tr>
<th>Key or legend to abbreviations and acronyms used in the safety data sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
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<td>CNS</td>
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<td>IECSC</td>
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<tr>
<td>ENCS</td>
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## New Chemical Substances

<table>
<thead>
<tr>
<th>KECI</th>
<th>Korea, Existing Chemical Inventory</th>
<th>UVCB</th>
<th>Unknown or Variable Composition, Complex Reaction Products, and Biological Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=</td>
<td>Less Than or Equal To</td>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration 50%</td>
<td></td>
<td></td>
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</table>