SAFETY DATA SHEET

Liquid HE® 150 Polymer XPT

Version 1.8


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

1.1 Product information

Product Name : Liquid HE® 150 Polymer XPT

EC-No. Registration number

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No. EC-No. Index No.</th>
<th>Legal Entity Registration number</th>
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<tr>
<td>Acrylamide</td>
<td>79-06-1 201-173-7 616-003-00-0</td>
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<td>Isoprene</td>
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<td>Styrene</td>
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<td>Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclic, &lt;2% aromatics</td>
<td></td>
<td>Chevron Phillips Chemicals International NV 01-2119456620-43-0010</td>
</tr>
</tbody>
</table>

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant Identified Uses Supported : Use in Oil and Gas field drilling and production operations - Industrial

1.3 Details of the supplier of the safety data sheet

Company : Chevron Phillips Chemical Company LP
Drilling Specialties Company LLC
10001 Six Pines Drive
The Woodlands, TX 77380

Local : Chevron Phillips Chemicals International N.V.
SECTION 2: Hazards identification

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

Not a hazardous substance or mixture.

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

Not a hazardous substance or mixture.

Additional Labeling:
EUH210 Safety data sheet available on request.

SECTION 3: Composition/information on ingredients

3.1 - 3.2 Substance or Mixture

Synonyms: HE® 150 Liquid
Liquid Acid Gelling Agent

Molecular formula: Mixture

Hazardous ingredients

SDS Number:100000014523
**Liquid HE® 150 Polymer XPT**

**SECTION 4: First aid measures**

**4.1 Description of first-aid measures**

**General advice**: No hazards which require special first aid measures.

**If inhaled**: If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

**In case of skin contact**: If on skin, rinse well with water. If on clothes, remove clothes.

**In case of eye contact**: Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

**If swallowed**: Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

**SECTION 5: Firefighting measures**

**Flash point**: >77°C (>171°F)

**Method**: ASTM D 93

**Autoignition temperature**: 225°C (437°F)

**5.1 Extinguishing media**

**Suitable extinguishing media**: Carbon dioxide (CO2).

**Unsuitable extinguishing media**: High volume water jet.

**5.2 Special hazards arising from the substance or mixture**

**Specific hazards during firefighting**: Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**5.3 Advice for firefighters**

**Special protective equipment for fire-fighters**: Wear self-contained breathing apparatus for firefighting if necessary.

**Further information**: For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool
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fully closed containers.

Fire and explosion protection: Do not spray on an open flame or any other incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Use personal protective equipment. Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions: Prevent further leakage or spillage if safe to do so.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

Reference to other sections: For personal protection see section 8. For disposal considerations see section 13.

A quantitative risk assessment is not required for the environment.

A quantitative risk assessment is not required for human health.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling

Advice on safe handling: Avoid formation of aerosol. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion: Do not spray on an open flame or any other incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Requirements for storage areas and containers: No smoking. Keep in a well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
SECTION 8: Exposure controls/personal protection

8.2 Exposure controls

Engineering measures

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the workplace 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: Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Organic Vapors, Dusts and Mists. 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. HEPA Filtered Respirators.

Hand protection: The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection: Eye wash bottle with pure water. Tightly fitting safety goggles.

Skin and body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate: Flame retardant protective clothing. Footwear protecting against chemicals.

Hygiene measures: Wash hands before breaks and at the end of workday.

A quantitative risk assessment is not required for the environment.
A quantitative risk assessment is not required for human health.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance
**Physical state** : Liquid  
**Color** : Opaque  
**Odor** : Slight hydrocarbon  

**Safety data**  
**Flash point** : >77°C (>171°F)  
Method: ASTM D 93  
**Lower explosion limit** : 0.6 %(V)  
**Upper explosion limit** : 5.1 %(V)  
**Oxidizing properties** : No  
**Autoignition temperature** : 225°C (437°F)  
**Molecular formula** : Mixture  
**Molecular weight** : Not applicable  
**pH** : 7  
**Boiling point/boiling range** : 208°C (406°F)  
**Vapor pressure** : < 1.00 MMHG  
at 20°C (68°F)  
**Relative density** : 0.96  

**Density** : 958.6 g/l  
**Water solubility** : dispersible  
**Partition coefficient: n-octanol/water** : No data available  
**Viscosity, dynamic** : 20,000 cP  
**Viscosity, kinematic** : 71,821 mm²/s  
at 40°C (104°F)  
**Relative vapor density** : 6.2  
(Air = 1.0)  
**Evaporation rate** : 0.1  

**SECTION 10: Stability and reactivity**  

10.1  
**Reactivity** : Stable at normal ambient temperature and pressure.
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

Hazardous reactions: Further information: No decomposition if stored and applied as directed.

Hazardous reactions: Vapors may form explosive mixture with air.

10.4 Conditions to avoid: Heat, flames and sparks.

10.5 Materials to avoid: No data available.

10.6 Other data: No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclic, <2% aromatics: LD50: > 5.000 mg/kg Species: Rat

Acute inhalation toxicity
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclic, <2% aromatics: LC50: > 5 mg/l Exposure time: 8 h Species: Rat Test atmosphere: vapor Method: OECD Test Guideline 403

Acute dermal toxicity
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclic, <2% aromatics: LD50: > 5.000 mg/kg Species: Rabbit

Liquid HE® 150 Polymer XPT Aspiration toxicity: No aspiration toxicity classification.

Liquid HE® 150 Polymer XPT Further information: No data available.

SECTION 12: Ecological information

12.1 Toxicity

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Toxicity to fish
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclic, <2% aromatics: LL0: 1.000 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclic, <2% aromatics: EL0: 1.000 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)

Toxicity to algae
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclic, <2% aromatics: EL50: 1.000 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)

12.2 Persistence and degradability
Biodegradability: Taking into consideration the properties of several ingredients, the product is estimated not to be readily biodegradable according to OECD classification.

12.3 Bioaccumulative potential
Elimination information (persistence and degradability)
Bioaccumulation
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclic, <2% aromatics: This material is not expected to bioaccumulate.

12.4 Mobility in soil
Mobility
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclic, <2% aromatics: After release, disperses into the air.

12.5 Results of PBT and vPvB assessment
Results of PBT assessment: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
Additional ecological information: This material is not expected to be harmful to aquatic organisms.

Ecotoxicology Assessment
Liquid HE® 150 Polymer XPT

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.

Product: Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

A quantitative risk assessment is not required for the environment.
A quantitative risk assessment is not required for human health.

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.

Testing (ASTM D4206) has shown product does not sustain combustion.

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

15.2 Chemical Safety Assessment
Components: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclic, <2% aromatics

Major Accident Hazard Legislation: ZEU_SEVES3 Update: Not applicable

Notification status
Europe REACH: This mixture contains only ingredients which have been registered according to Regulation (EU) No. 1907/2006 (REACH).
Switzerland CH INV: Not in compliance with the inventory
United States of America (USA) TSCA: Substance(s) not listed on TSCA inventory
Canada DSL: This product contains one or several components that are not on the Canadian DSL nor NDSL.
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Australia AICS : Not in compliance with the inventory
New Zealand NZIoC : Not in compliance with the inventory
Japan ENCS : Not in compliance with the inventory
Korea KECI : Not in compliance with the inventory
Philippines PICCS : Not in compliance with the inventory
China IECSC : Not in compliance with the inventory
Taiwan TCSI : Not in compliance with the inventory

SECTION 16: Other information

NFPA Classification
Health Hazard: 1
Fire Hazard: 2
Reactivity Hazard: 0

Further information
Legacy SDS Number : CPC00467

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.

Key or legend to abbreviations and acronyms used in the safety data sheet

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Government Industrial Hygienists</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose 50%</td>
</tr>
<tr>
<td>AICS</td>
<td>Australia, Inventory of Chemical Substances</td>
</tr>
<tr>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
</tr>
<tr>
<td>DSL</td>
<td>Canada, Domestic Substances List</td>
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<td>NFPA</td>
<td>National Fire Protection Agency</td>
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<td>NDSL</td>
<td>Canada, Non-Domestic Substances List</td>
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<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety &amp; Health</td>
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<tr>
<td>CNS</td>
<td>Central Nervous System</td>
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<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
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<td>CAS</td>
<td>Chemical Abstract Service</td>
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<td>New Zealand Inventory of Chemicals</td>
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<td>NOAEL</td>
<td>No Observable Adverse Effect Level</td>
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<td>EC50</td>
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<td>EGEST</td>
<td>EOSCA Generic Exposure Scenario Tool</td>
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<td>EOSCA</td>
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<td>PEL</td>
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<td>PICCS</td>
<td>Philippines Inventory of Commercial Chemical Substances</td>
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<td>MAK</td>
<td>Germany Maximum Concentration Values</td>
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<tr>
<td>PRNT</td>
<td>Presumed Not Toxic</td>
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<tr>
<td>GHS</td>
<td>Globally Harmonized System</td>
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<tr>
<td>RCRA</td>
<td>Resource Conservation Recovery</td>
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SDS Number: 100000014523

11/12
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<th>Symbol</th>
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<tr>
<td>IC50</td>
<td>Inhibition Concentration 50%</td>
<td>SARA</td>
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<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
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<td>Inventory of Existing Chemical Substances in China</td>
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Full text of H-Statements referred to under sections 2 and 3.