1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

<table>
<thead>
<tr>
<th>Trade name</th>
<th>PETOL PP 451</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical name</td>
<td>Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol grafted with styrene, acrylonitrile; Glycerin, propylene oxide, ethylene oxide, acrylonitrile, styrene polymer</td>
</tr>
<tr>
<td>Chemical characterization</td>
<td>Polymer</td>
</tr>
<tr>
<td>REACH Registration number</td>
<td>Exempted from registration according to the provision of Article 2(9) of REACH.</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>3500</td>
</tr>
</tbody>
</table>

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

**Petol PP 451** is a non-reactive polymer polyol with about 45% solid content (styrene-acrylonitrile polymer particle) and 3500 average molecular weight of standard polyol, designed for the production of high load bearing flexible polyurethane slabstock foams. It is a BHT-free product and can be used both with and without auxiliary blowing agent to produce a wide range of foam grades, from low to high density.

Uses advise against: There are no uses advised against.

1.3. Details of the supplier of the safety data sheet

<table>
<thead>
<tr>
<th>Name</th>
<th>S.C. OLTCHIM S.A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>1 Uzinei Street, 240050 Ramnicu Valcea, Romania</td>
</tr>
<tr>
<td>Phone N°</td>
<td>+40 250 701 785</td>
</tr>
<tr>
<td></td>
<td>+40 250 701 200 ext.2785, 3001, 3115</td>
</tr>
<tr>
<td>FAX N°</td>
<td>+40 250 739 760; +40 250 735 030</td>
</tr>
<tr>
<td>E-mail of competent person responsible for SDS in the MS or in the EU:</td>
<td><a href="mailto:tehnic@oltchim.com">tehnic@oltchim.com</a></td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
Prepared in accordance with with Commission regulation (EU) 830/2015
Amending Regulation (EC) 1907/2006
PETOL PP 451

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1.4. Emergency telephone number

<table>
<thead>
<tr>
<th>European Emergency N°:</th>
<th>112</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency telephone at the company:</td>
<td>+40/250/738141-available 24h/day/365days</td>
</tr>
<tr>
<td>For Romania- The institution responsible with providing information in case of a health emergency is The National Institute for Public Health, Department for the International Sanitary Regulation and Toxicological Information.</td>
<td>Telephone: 021.318.36.06, Opening hours: Monday - Friday from 8 a.m. to 3 p.m.</td>
</tr>
</tbody>
</table>

2. HAZARDS IDENTIFICATION

2.1. Classification of the substances or the mixture
2.1.1. Classification according to Regulation (EC) 1272/2008 (CLP)
Petol PP 451 is not classified according to Regulation (EC) 1272/2008

2.2. Labeling according to Regulation (EC) 1272/2008
Signal word: No signal word
No label according to Regulation (EC) 1272/2008.

2.3 Other hazard: The substance does not meet the criteria for PBT or vPvB substance according to Regulation (EC) 1907/2006, Annex XIII. No other hazard.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS no</th>
<th>Classification according to Reg (EC) No.1272/2008</th>
<th>Concentration, % (w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol propoxylated-co-ethoxylated</td>
<td>009082-00-2</td>
<td>no</td>
<td>56-53</td>
</tr>
<tr>
<td>Propoxylated, ethoxylated glycerol, styrene, acrylonitrile polymer</td>
<td>57913-80-1</td>
<td>no</td>
<td>44-47</td>
</tr>
</tbody>
</table>

Impurities: No impurities relevant for classification and labeling.

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Code: FDS 011
4. FIRST-AID MEASURES

4.1 Description of first aid measures

**General Advice:** If exposed or if you feel unwell: Call a Poison Center or doctor/physician. Show this safety data sheet to the doctor in attendance.

**Following inhalation:** Due to low vapor pressure, this product is not likely to be inhaled when handled at room temperature. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Following skin contact:** Remove contaminated clothing and wash before reuse. Wash skin with soap and plenty of water immediately at least 15-20 minutes, until no evidence of chemical remains.

**Following eye contact:** Wash eyes immediately with large amounts of lukewarm water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains at least 15-20 minutes. Get medical attention immediately if pain, blinking, tears or redness develops.

**Following Ingestion:** Polyether polyol have low to very low oral toxicity. Swallowing small amount of this product is not likely to cause injury. If ingested, do not induce vomiting unless directed to do by medical personnel. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

**By skin contact:** Skin contact with the product is not like to result in a significant irritation.

**By eye contact:** Contact with eyes cause slight temporary irritation.

**By inhalation:** Due to low vapor pressure at room temperature, Petol polyols alone are not likely to be inhaled. In this case symptoms may include cough and sometimes slight dizziness. The product is not sensitising.

4.3. Indication of immediate medical attention and special treatment needed

No specific antidote. Treat symptomatically and supportively.

5. FIRE - FIGHTING MEASURES

5.1 Extinguishing media

**Suitable extinguishing media:** Dry chemical, carbon dioxide, dry chemical, foam and water spray.

**Unsuitable extinguishing media:** Do not use direct water stream as it may spread the fire.
5.2 Special hazards arising from the substance or mixture

**Exposure hazards:** Polyether polyols are low in volatility and are not considered serious fire hazard. However, in the presence of an existing fire, or under the proper conditions of heat and oxygen, PETOL polyols will burn. Heat or fire may produce decomposition products, which may be hazardous.

5.3 Advice for firefighters

**Protection of the fire-fighters:** Firefighters should be equipped with protective equipment and self-contained breathing apparatus to protect against potentially toxic and irritating fumes.

**Other information:** Use cold water spray to cool fire-exposed containers to minimize the risk of rupture.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

**Personal precautions:** No special protection. Ventilate area of leak or spill. Wear appropriate personal protective equipment. Spills may cause very slippery surfaces. Spread granular cover.

6.2 Environmental precautions

**Environmental precautions:** Prevent contamination of ground and surface water by isolating the hazard area. Contain and recover liquid when possible. Keep closed containers and dispose according to all applicable federal, state or local environment regulations.

6.3 Methods and materials for containment and cleaning up

**Methods of cleaning up:** Remove all ignition sources. Notify fire and environmental authorities. Absorb spills with dry sand, earth or similar non-combustible absorbent material then collect into drums for later disposal. Incinerate or bury in a licensed facility if permitted. For large, dike and pump into suitable containers for disposal. Flush area with plenty of water. Waste water will be sent to the WWTP.

**Special precautions:** Do not use combustible materials, such as saw dust. Do not flush to sewer! Slippery walking! Spread granular cover!
6.4 Reference to other sections

Additional advice: Refer to sections 8, 13.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling: No special measures required. It is not considered a hazardous material in most industrial operations. Sources of ignition such as smoking and open flames are prohibited where this compound is handled. Petol PP 451 is a hygroscopic product, thus handling should be realized in closed systems, under nitrogen blanked or using other appropriate systems in order to prevent any moisture contact.

Advice on general occupational hygiene: Avoid inhalation or ingestion and contact with skin and eyes. General occupational hygiene measures are required to ensure safe handling of the substance. These measures involve good personal and housekeeping practices (i.e. regular cleaning with suitable cleaning devices), no drinking, eating and smoking at the workplace. Shower and change clothes at end of work shift. Do not wear contaminated clothing at home.

7.2. Conditions for safe storage, including any incompatibilities

Storage: Store in tightly closed containers, in dry and well ventilated areas, between 20-30°C. Prevent any moisture contamination as product is hygroscopic. This may affect reactivity, appearance and performance. Therefore, keep drums tightly closed to prevent contamination. Use dry nitrogen or low dew point air for tank padding.

Incompatible materials: Avoid contact with strong acids, alkalis and oxidizers, water. Avoid unintended contact with isocyanates.

Incompatible materials: Avoid contact with copper, copper alloys and zinc.

Recommended storage & transport material: Glycerol propoxylated can be shipped and stored in stainless steel tanks, steel drums lined inside, IBC Polyethylene (HDPE) tanks. Mild steel free of mild-scale or rust and maintained in a rust-free condition can also use. Hoses should be of polypropylene, stainless steel or wire bound canvas.

Precautions to be taken in handling and storing:
- Keep well ventilated the areas where the polyether ployol is stored and handled.
- When working with other polyether or other materials such as isocyanates in combination with Petol polyether polyols, please request and reference recommendations for safe handling from all suppliers.
7.3 Specific end use(s)
Please check Section 1.2.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limit (OEL), 8 h TWA : Not established
Short-term exposure limit (STEL), 15 min : Not established

8.2. Exposure control
8.2.1. Engineering controls : No special ventilation is recommended under anticipated conditions of normal use beyond that needed for normal comfort control. Good general ventilation should be sufficient for most conditions.

8.2.2. Personal protective equipment
Eye/Face protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Equipment for eye protection should be tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Maintain eye wash fountain and quick-drench facilities in work area.
Skin protection: Not normally considered a skin hazard. Wear impervious protective clothing including boots, apron, if needed. Wash hands and other exposed area with soap and water before eating, drinking, smoking and when leaving work.
Hand protection: Handle with gloves which were inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. The selected protective gloves have to satisfy the specifications of the standard EN 374 derived from it. Examples of preferred glove barrier materials:
- Butyl rubber
- Nitrile/butadiene rubber
- Polyvinyl alcohol ("PVA")
- Neoprene:
- Polyvinyl chloride (PVC or "vinil")
- Natural rubber ("latex")
For prolonged or frequently repeated contact a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended.

**NOTICE:** The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Respiratory protection:** No special respirator protection is recommended under anticipated conditions of normal use with adequate ventilation. Where excessive vapor or mist may result from use, use respiratory protection equipment recommended or approved by appropriate local, state or international agency.

**Other precautions:** Maintain shower, eye wash fountain and quick-drench facilities in work area.

### 8.2.3. Environmental exposure control
The product does not pose any risk to the environment. Avoid uncontrolled release of the product in environment.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**General information**
- **Appearance**: white, viscous liquid
- **Odor**: Odourless

**Important health, safety and environmental information**
- **pH**: N/A
- **Boiling point**: Decomposes.
- **Flash point, min**: N/A
- **Flammability**: Not flammable
- **Explosive properties**: Non explosive

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxidizing properties</td>
<td>No oxidizing properties</td>
</tr>
<tr>
<td>Vapor pressure, Pa at 25°C</td>
<td>N/A</td>
</tr>
<tr>
<td>Specific gravity, at 25°C</td>
<td>1.033, g/cm³</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Partially soluble</td>
</tr>
<tr>
<td>Partition coefficient (log K_{ow})</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor relative density (air=1)</td>
<td>N/A</td>
</tr>
<tr>
<td>Dynamic viscosity, at 25°C</td>
<td>4000-4800 cP</td>
</tr>
</tbody>
</table>

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Code: FDS 011
10. STABILITY AND REACTIVITY


10.2. Chemical stability: Stable under normal recommended storage conditions, but hygroscopic (attract water from atmosphere and environment).

10.3. Conditions to avoid: Moisture, ignition sources and incompatibles.

10.4. Incompatible materials: Avoid unintended contact with isocyanates and strong acids, alkalis and oxidizers.

10.5. Hazardous decomposition products: Carbon monoxide, carbon dioxide and aliphatic fragments.

11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
</tr>
<tr>
<td>The product presents a low to very low in acute oral toxicity. In conformity with literature data the most LD50 values range from 2 grams to greater than 10 grams per kilogram of weight for laboratory animals.</td>
</tr>
<tr>
<td>Irritation/Corrosion</td>
</tr>
<tr>
<td>Eye: May cause slight irritation, but not corneal damage. Skin: Contact with the product is not like to result in a significant irritation. Inhalation: At room temperature, exposure to vapors is minimal due to low volatility. May cause slight respiratory irritation.</td>
</tr>
<tr>
<td>Sensitisation</td>
</tr>
<tr>
<td>This product is not a sensitizer.</td>
</tr>
<tr>
<td>Repeated dose toxicity</td>
</tr>
<tr>
<td>Not available data. Repeated or prolonged is not known to aggravate medical condition.</td>
</tr>
<tr>
<td>Mutagenity</td>
</tr>
<tr>
<td>Genetic toxicity: negative</td>
</tr>
<tr>
<td>Carcinogenicity</td>
</tr>
<tr>
<td>Product is of no concern with regard to carcinogenicity.</td>
</tr>
</tbody>
</table>

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Code: FDS 011
12. ECOLOGICAL INFORMATION

12.1. Ecological Information

Ecotoxicity
This product is not expected to present a hazard to aquatic and terrestrial flora and fauna.

Mobility: The product may enter the environment from industrial waste treatment plant discharges or spills. Low mobility in the environment due to its slight water solubility. No appreciable volatilization from water to air is expected.

Persistence and degradability: Material is expected to degrade only slowly in the environment. Despite the very slow biodegradability rate the product should not present an environmental hazard in surface water / soil.

Bioaccumulative potential: It is not expected to have a bioaccumulative potential.

Other adverse effects: This material is expected to be non-hazardous to aquatic species.

13. DISPOSAL CONSIDERATIONS

This section contains generic advice and guidance.

13.1 Waste treatment methods

13.1.1 Product
Methods of disposal: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

13.1.2. Packaging
Methods of disposal: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must
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Prepared in accordance with Commission regulation (EU) 830/2015
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be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

Waste Code: No waste key number as per the European Waste Types List can be assigned to this product, since such classification is based on the (as yet undetermined) use to which the product is put by the consumer.

Relevant European legislation regarding waste:

14. TRANSPORT INFORMATION
ADR: Petol PP 451 is not classified under ADR regulations.
RID: Petol PP 451 is not classified under RID regulations.
Maritime transport IMDG: Petol PP 451 is not classified under IMDG regulations.
Air transport ICAO/IATA: Petol PP 451 is not classified under IATA regulations.

15. REGULATORY INFORMATION

Relevant information regarding the European legislation
European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)
Regulation referring to the International Carriage of Dangerous Goods by Rail (RID

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International Maritime Dangerous Goods (IMDG)
EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization
Substances of very high concern (CMR): Petol PP 451 is not subject to authorization procedure.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain
dangerous substances, mixtures and articles
Petol PP 451 is not listed on the annex.-no restriction

Other EU regulations: Petol PP 451- is not subject to:
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer
Regulation (EC) No 850/2004 on persistent organic pollutants
Regulation (EC) No 649/2012 concerning the export and import of dangerous chemicals

15.2 Chemical safety Assessment
An exposure assessment is not required as Petol PP 451 is a polymer and is not classified and labeled as hazardous material according to Regulation (EC) No. 1272/2008.

16. OTHER INFORMATION
Data are based on our latest knowledge but do not constitute a guarantee for any specific product features and do not establish a legally valid contractual relationship.

16.1. Explanations for possible abbreviations mentioned in above section
PBT: Persistent, bioaccumulative and toxic.
vPvB: Very persistent and very bioaccumulative.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
RID: International Carriage of Dangerous Goods by Road
IMDG: International Maritime Dangerous Goods Code
ICAO/IATA: International Civil Aviation Organization/ International Air Transport Association

16.2. Key literature references
The information provided in this SDS is consistent with the information provided in the literature data. See also:

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Disclaimer:

Oltchim provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Furthermore, this safety data sheet is made up based on the legal requirements as set by EC 1907/2006 (REACH) and EC Regulation 830/2015.