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

1.1. Product identifier

<table>
<thead>
<tr>
<th>Trade name</th>
<th>PETOL PA 450-3T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical name</td>
<td>2, 2', 2''-Nitriloethanol, propoxylated (&gt;1, &lt; 6.5 mol PO) (ISOPA NLP #15) Triethanolamine, propoxylated (&gt;1, &lt; 6.5 mol PO)</td>
</tr>
<tr>
<td>CAS no.</td>
<td>37208-53-0</td>
</tr>
<tr>
<td>EINECS EU (EC no.)</td>
<td>500-094-8</td>
</tr>
<tr>
<td>REACH Registration number</td>
<td>01-2119463472-39-0002</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C6H15O3N(C3H6O)n ; n &gt;1 and n&lt; 6.5</td>
</tr>
<tr>
<td>Molecular weight range</td>
<td>&gt; 207.0 — &lt; 526.0</td>
</tr>
</tbody>
</table>

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

Petol PA 450-3T is a triethanol amine propoxylated designed for blending with other polyols for the production of rigid polyurethane foams.

**Relevant identified uses**
- Industrial use [SU8, SU9] Manufacturing of other substances [PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15]
- Industrial use [SU 10] Formulation, Repacking and Distribution (PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC 9, PROC15)
- Industrial use [SU3]; Flexible Foam Industrial Use [PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC14, PROC15, PROC21]
- Industrial use [SU3]-Rigid foam [PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 15, PROC 21]
- Industrial use [SU3] Use in Coatings [PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC15]
- Industrial use [SU3]; Adhesives & Sealants [PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15]
- Industrial use [SU3]; Elastomers, TPU, Polyamide, Polyimide & Synthetic Fibres [PROC1, PROC2, PROC3, PROC4, PROC5, PROC7 PROC8a, PROC8b, PROC9, PROC14, PROC15]
Industrial use [SU3]; Composite Material Based on Wood/Mineral/Natural Fibres [PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC14, PROC15, PROC21]
Industrial use [SU3]; Foundry [PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC15]
Industrial use [SU3]; Other Composite Material [ PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC13, PROC14, PROC15]
Professional use [SU22]; Rigid foam [PROC3, PROC4, PROC5, PROC8a, PROC10, PROC11]
Professional use [SU22]; Coatings [PROC5, PROC8a, PROC10, PROC11, PROC13]
Professional use [SU22]; Adhesives & Sealants [PROC4, PROC5, PROC8a, PROC10, PROC11, PROC13]
Professional use [SU22]; Other Composite Material [PROC2, PROC3, PROC5, PROC8a, PROC14]
Consumer Use [21]; Coatings [PC9a]
Consumer Use [21]; Adhesives & Sealants [PC1]

**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>

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>
</tbody>
</table>

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.

2. HAZARDS IDENTIFICATION

2.1. Classification of the substances or the mixture

2.1.1. Classification according to Regulation (EC) 1272/2008 (CLP)
Petol PA 450-3T is not classified as dangerous according to Regulation (EC) 1272/2008

2.2. Label elements
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 another hazard.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Identification name</th>
<th>CAS no</th>
<th>EC No</th>
<th>Weight % content</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2',2''-Nitrilotriethanol, propoxylated (Petol PA 450-3T)</td>
<td>37208-53-0</td>
<td>500-094-8</td>
<td>100</td>
</tr>
</tbody>
</table>

Impurities
No relevant impurities for classification and labeling.

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: Move person 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 minutes, until no evidence of chemical remains.

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

Following ingestion: Not expected to be an important route of entry into the body. The product has low to very low oral toxicity. If accidentally ingested, seek medical attention.

This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process. The information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.
Code: FDS 011
4.2. Most important symptoms and effects, both acute and delayed

By inhalation: 2,2',2''-Nitrilotriethanol, propoxylated is an essentially non-volatile liquid (vapour pressure 0.00008 hPa at 20ºC), at room temperature so, no respiratory effects appear.

By eye contact: Contact with eyes cause no irritation.

By skin contact: Skin contact with the product is not like to cause an irritation.

Chronic effects: No chronic hazard.

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, chemical foam, alcohol resistant foam and water spray or fog.

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: In a fire or of heated, a pressure increase will occur and the container may burst. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous combustion products: Combustion products may include and are not limited to: nitrogen oxides, carbon monoxide, carbon dioxide.

5.3 Advice for firefighters

Protection of the fire-fighters: No special protection required. It is recommended full protective equipment (includes fire fighting helmet, coat, trousers, boots, and gloves) and self-contained breathing apparatus.

Fire Fighting Procedures: Keep unnecessary and unprotected personnel away from entering. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.
6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Keep unnecessary and unprotected personnel away from entering. Avoid contact with skin, eyes, and clothing – wear suitable protective equipment (see section 8). Do not touch or walk through spill material. Shut off all ignition sources.

For emergency responders: Ventilate area of leak or spill. Wear adequate personal protective equipment. Wear appropriate personal protective equipment. Spills may cause very slippery walking. 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: Stop leak without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wish spillages into an effluent treatment plant of proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via licensed waste dispose contractor.

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

Protective measures: 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. Since alkoxylated amines are handled together with diisocyanates,
SAFETY DATA SHEET
PETOL PA 450-3T

Revision: 3  Last up date: September 15, 2016  Issued date: April 2011  page 6/16

proper distinction between these two kinds of products is essential in order to avoid undesired mixing resulting in uncontrolled polymerization.

Advice on general occupational hygiene:

- Protective gloves should be worn when handling freshly made polyurethane products to avoid skin contact. Skin contact with fresh polyurethane foams provides a potential hazard from residual heat and trace raw materials.
- Emergency eye wash fountains and safety showers should be available in the immediate vicinity of working area.
- Do not wear contaminated clothing at home.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers, in dry and well ventilated areas, between 15-35°C, away from UV light. Protect from freezing. Prevent any moisture contamination as product is hygroscopic. Use dry nitrogen or low dew point air for tank padding. Keep drums tightly closed to prevent contamination. Keep away from incompatible substances. Drums should be stacked to a maximum of 3 high.

Incompatible substance: Avoid contact with, strong acids, alkalis and oxidizers (such as peroxides and hypochlorite salts). Avoid unintended contact with isocyanates. The reaction of polyols and isocyanates generates heat.

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

Recommended storage & transport material: Stainless steel, mild steel free of mild-scale or rust and maintained in a rust-free condition, mild steel lined inside, polypropylene, Teflon, IBC Polyethylene (HDPE) tanks.

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 polyol is stored and handled.
- Handle freshly polymerized parts with care. Be aware of potential hazards of toxic vapors and of heat cure.
- Do not stack fresh polyurethane buns. Stacking can cause create insulation of heat in the buns and can result in spontaneous combustion.
- Never expose polyurethane foam to an open flame or other high heat source.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

8.1.1. Occupational Exposure limit values

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

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Code: FDS 011
8.1.2. Information on monitoring procedures

Substance name: 2, 2’, 2’’-Nitrilotriethanol, propoxylated (Petol PA 450-3T):- EC no: 500-094-8
CAS no.: 37208-53-0

<table>
<thead>
<tr>
<th>Environmental protection target</th>
<th>PNEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshwater (mg/l)</td>
<td>0.2</td>
</tr>
<tr>
<td>Freshwater sediments (mg/kg ww)</td>
<td>0.52</td>
</tr>
<tr>
<td>Marine water (mg/l)</td>
<td>0.02</td>
</tr>
<tr>
<td>Marine sediments (mg/kg ww)</td>
<td>0.052</td>
</tr>
</tbody>
</table>

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 “vynil”)
- 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...
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Code: FDS 011
10. STABILITY AND REACTIVITY

10.1. Reactivity: See point 10.5.

10.2. Chemical stability: Stable under normal temperature and pressure, but hygroscopic.

10.3. Possibility of hazardous reactions: Contact with diisocyanates could rinse in an uncontrolled polymerization.

10.4 Conditions to avoid: heat, flame, source of ignition and incompatibles.

10.5 Incompatible materials: Isocyanates, strong acids, alkalis and oxidizers.

10.6. Hazardous decomposition products: None.

11.  TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral route:</td>
<td>Rat: LD50 &gt; 2500 mg/kg bw (2000 mg/kg tested, no effects observed).</td>
</tr>
<tr>
<td></td>
<td>according to OECD guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)</td>
</tr>
<tr>
<td>Dermal route:</td>
<td>Rat, LD50: &gt; 2000 mg/kg bw (male/female), according to OECD Guideline 402</td>
</tr>
<tr>
<td>Inhalation route:</td>
<td>waived</td>
</tr>
</tbody>
</table>

| Irritation/Corrosion           | Skin irritation: Not irritating. (according to OECD guideline 404)           |
|                                | Eye irritation: Not irritating (according to OECD guideline 405).             |

| Sensitisation                  | 2, 2', 2'' - Nitriloethanol, propoxylated, propoxylated (ISOPA NLP#15)       |
|                                | does not posses a skin, dermal or respiratory sensitising potential.         |

| Repeated dose toxicity         | Oral route                                                                   |
|                                | NOAEL (28-days oral gavage) rat, both sexes >= 1000 mg/kg bw /day (according to OECD guideline 407). |
|                                | NOEL (28-days oral gavage) both sexes = 300 mg/kg b.w. /day (based on nominal). |
### 12. ECOLOGICAL INFORMATION

#### 12.1. Toxicity

**Acute (short-term) toxicity**

**Fish:** *Danio rerio/freshwater/static*  
LC0 (96h) = >= 100 mg/L test mat. (nominal)

**Aquatic invertebrates:** *Daphnia magna/freshwater/static*  
EC50 > 100 mg/L test mat. (nominal)  
Based on: mobility

**Algae/aquatic plants:** *Desmodesmus subspicatus* (algae)  
EC50(72h) > 100 mg/L test mat. (nominal)  
Based on: growth rate  
No toxic effects were observed.

**Chronic (long-term) toxicity**

**Fish:** In accordance with column 2 of REACH Annex IX, long-term toxicity studies with fish do not need to be conducted as from the chemical safety assessment it can be concluded that there is no risk for aquatic organisms based on short-term toxicity data.

**Aquatic invertebrates:** *Daphnia magna/fresh water/semi-static*
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Code: FDS 011
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Code: FDS 011
Relevant European legislation regarding waste:

14. TRANSPORT INFORMATION

ADR: Petol PA 450-3T is not classified under ADR regulations.

RID: Petol PA 450-3T is not classified under RID regulations.

Maritime transport IMDG: Petol PA 450-3T is not classified under IMDG regulations.

Air transport ICAO/IATA: Petol PA 450-3T is not classified under IATA regulations.

15. REGULATORY INFORMATION

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

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 International Maritime Dangerous Goods (IMDG))

Authorization: Petol PA 450-3T is not subject for authorization
Restrictions on use: no restriction

Other EU regulations: Petol PA 450-3T 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
- Directive 2012/18/EU - SEVESO III Directive

15.2 Chemical safety Assessment
A chemical safety assessment has been carried out for this substance. Relevant chapters of the resulting Chemical Safety Report (CSR) – exposure scenarios and risk management measures – are listed in the annex to this safety data sheet.

16. OTHER INFORMATION

16.1. Abbreviation and acronyms (NOT ALL ARE USED IN THIS SDS)
- AC Article category
- ADR European agreement concerning the international carriage of dangerous goods by road
- BSAF Bio soil accumulation factor
- BCF Bio concentration factor
- CAS Chemical Abstracts Service
- CLP Classification, labelling and packaging
- CMR Carcinogenic, mutagenic or toxic for reproduction
- CSA/CSR Chemical safety assessment / Chemical safety report
- DNEL Derived no effect level
- EC10 Concentration of a substance where 10% of the population is affected
- EC50 Concentration of a substance where 50% of the population is affected
- ECHA European chemicals agency
- EINECS EU list of existing chemical substances
- EmS Emergency schedule
- ERC Environmental release category
- ES Exposure scenario
- eSDS Extended safety data sheet
- GHS Globally harmonised system
- IATA-DGR International air transport association - dangerous goods regulations
- ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air
- IU Identified use
- IUPAC International Union of Pure and Applied Chemistry
- IBC code International code for the construction and equipment of ships carrying dangerous chemicals in bulk
- IMDG International maritime dangerous goods
This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process. The information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.

Code: FDS 011
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.