1. Identification of the substance/mixture and of the company:

1.1 Substance Name
Polytetramethylene Ether Glycol (PTMEG)

1.2 Intended Use and Use Limitations

Recommended Use
Raw Material for: spandex, elastomers, synthetic leathers, paints and coating materials.

Use Limitations
No Data Available

1.3 Company identification

Company: Korea PTG Co., Ltd.
Address: 15, Yongyeon-ro 179beon-gil, Nam-gu, Ulsan Korea
Tel, Number: Tel 82-52-257-5240, Fax 82-52-257-5246
Emergency number: 82-52-257-5240
Team: Safety & Environment Team

2. Hazard Identification:

2.1 Hazard-Risk
Not classified. However may be a slight irritation to the skin or eye depending on the experience of the person in manufacturing.

2.2 Label element, including and precautionary statements

Hazard symbol
The product does not require a hazard warning label in accordance with GHS criteria.

Signal word
None

Hazard statement
Not assigned

Precautionary statement
Not assigned

2.3 Other hazard-Risk which are not included in the classification (NFPA)

- Health: 0
- Fire: 1
- Reactivity: 0

3. Composition/Information on Ingredients:

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>Trivial name</th>
<th>CAS No.</th>
<th>Content(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polytetramethylene Ether</td>
<td>Poly(oxytetramethylene) Glycol</td>
<td>25190-06-1</td>
<td>&gt; 99.5</td>
</tr>
</tbody>
</table>

4. First aid measures:

4.1 In case of intrusion into eye
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

4.2 In case of skin contamination
Wash off with soap and plenty of water. Consult a physician.
Launder contaminated clothing and shoes, before reuse.
4.3 In case of respiratory
Remove victim to fresh area immediately.
Give artificial respiration as needed.
Consult with a doctor immediately.

4.4 In case of ingestion
Never give anything by mouth to an unconscious person.
Rinse mouth with water. Consult a physician.

4.5 Other notice of doctor
Follow your doctor to show safety health data.

5. Explosion, fire measures:
5.1 Suitable extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or
carbon dioxide.
Inappropriate extinguishing media
- General fire extinguishing agent and use mist sprinkler
Major fire:
Carbon oxides
There is a slight risk of fire. Dust/Air mixtures can ignite or explode.

5.3 Protective equipment and precaution
for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.
If safe to do so, remove containers from area of fire.
Prevent shatter using high-pressure water spray.
Dike for later disposal.
Avoid inhalation of Substance or combustion products.
Stay up wind and keep out of low areas.

6. Accidental release measures:
6.1 Personal precautions, protective equipment
Avoid inhalation of Substance or combustion products.
Wear personal protective equipment.
Do not touch the chemicals. Do not go across the chemicals.
Stop leak if possible without personal risk.
Do not contact/touch the Leakage Substance.
Do not pour water inside containers.
By spraying with water, reduce vapors

6.2 Environmental precautions
Absorb with sand or other non-combustible materials.
Do not let product enter drains.

6.3 Methods and materials for containment
Minor spills
Absorb it using nonflammable materials
(ex. dry sand or dirt)
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Dike for later disposal. Remove the source of ignition. Keep in suitable, closed containers for disposal.

7. Handling and storage:
   7.1 Precautions for safe handling
   Avoid contact with skin and eyes. Provide appropriate exhaust ventilation at places where dust is formed. Clean the clothes after using chemical material.

   7.2 Conditions for safe storage
   Keep separated from with incompatible materials. Store in an airtight container. Keep container tightly closed in a dry and well-ventilated place. Comply with local regulations for storage.

8 Exposure controls/personal protection:
   8.1 Exposure limits of chemical substance,
   Domestic regulation
   No Exposure Limits
   ACGIH regulation
   No Exposure Limits
   Biological exposure limits
   No Exposure Limits
   8.2 Appropriate engineering controls
   Provide local exhaust ventilation to control vapours/mists.
   8.3 Individual protective equipment
   Respiratory Protection
   Not normally needed. Use adequate certified respirator if there is any potential for an uncontrolled release.

   Eye protection
   Wear safety glasses to avoid contact with eyes.

   Hands protection
   Wear appropriate protective gloves to avoid contact with skin.

   Body protection:
   Wear suitable protective clothing.

9. Physical and chemical properties:
   9.1 Appearance (physical state, colour etc.)
   Liquid to waxy, Colourless
   9.2 Odour
   Negligible
   9.3 Odour threshold
   No Data Available
   9.4 pH
   No Data Available
   9.5 Melting point/freezing point
   25 ℃ ~ 32 ℃
   9.6 Initial boiling point and boiling range
   > 204 ℃ (> 398 ℉)
   9.7 Flash point
   259 ℃
9.8 Evaporation rate: No Data Available
9.9 Flammability (solid, gas): No Data Available
9.10 Upper/lower explosive limits: No Data Available
9.11 Vapour pressure: No Data Available
9.12 Solubility: Slightly soluble
9.13 Vapour density: No Data Available
9.14 Specific gravity: 0.979 (at 25 °C)
9.15 N-octanol/water partition coefficient: No Data Available
9.16 Auto-ignition temperature: No Data Available
9.17 Decomposition temperature: No Data Available
9.18 Viscosity: No Data Available
9.19 Molecular weight: 250, 650, 1000, 1400, 1800, 2000, 3000
9.20 Solvent soluble: Aromatic and chlorinated solvents

10. Stability and reactivity:
10.1 Chemical stability and Possibility of hazardous reactions: Stable under recommended storage conditions. But there is a risk of self-ignition at high temperature.
10.2 Conditions to avoid: Avoid heat, flame, spark and ignition source. (Electrostatic discharge, Shock, vibration, etc.) Avoid contact with incompatible materials.
10.3 Substance to avoid: Acid, Oxidant
10.4 Hazardous decomposition products: Carbon oxides

11. Toxicological information:
11.1 Information on the likely route of exposure
   Inhalation: Possible
   Oral: Possible
   Skin Contact: Possible
   Eye contact: Possible
11.2 Health Hazard Information
   Acute oral toxicity: LD50 11,340 mg/kg rat(650 mw, Quaker Oats)
   Acute dermal toxicity: LD50 8,370 mg/kg rabbit(650 mw, Quaker Oats)
   Acute inhalation toxicity: No Data Available
   Skin corrosion or irritation: May cause slight skin irritation.
   Serious eyes damages or irritation: May cause slight eye irritation.
   Respiratory sensitization: No Data Available
   Skin sensitization: No Data Available
   Specific target organ toxicity substance: No Data Available

   (single exposure)
   Specific target organ toxicity substance: No Data Available
   Germ cell mutagenicity: No Data Available
   Reproductive toxicity: No Data Available
Carcinogenicity
- IARC: No Data Available
- ACGIH: No Data Available
- NTP: No Data Available
- OSHA: No Data Available
- Aspiration hazard: No Data Available

11.3 Numerical Scale of toxicity (Acute toxicity Estimates): No Data Available

12. Ecological information:
12.1 Ecotoxicity
- Fish: No Data Available
- Crustacean: No Data Available
- Bird: No Data Available

12.2 Persistence and degradability
- Persistence: No Data Available
- Degradability: No Data Available

12.3 Bioaccumulative potential
- Accumulative: No Data Available
- Biodegradation: No Data Available

12.4 Mobility in soil: No Data Available

12.5 Other hazardous effects: No Data Available

13. Disposal considerations:
13.1 Disposal methods: No Data Available
13.2 Disposal attention: Consider notices of regulations in case that it is indicated in waste disposal regulation.

14. Transport information:
14.1 U.S. Department of Transportation (DOT): Not regulated as dangerous good
14.2 International Maritime Organization (IMDG): Not regulated as dangerous good
14.3 International Air Transport Association (IATA): Not regulated as dangerous good

/ International Civil Aviation Organization (ICAO)

15. Regulatory information:
15.1 Korean Industrial Safety and Health Act: Not Applicable
15.2 Korea Toxic Chemicals Control Act (KCCA): Not Applicable
15.3 Safety Control of Dangerous Substances Act in Korea: Not Applicable
16. Other information:

16.1 Reference:
- Croner’s: Emergency Spillage Guide.
- Croner’s: Emergency First Aid Guide. Croner’s: Substances Hazardous to Health
- ERG 2004, , RSAP, US DOT
- National Institute of Technology and Evaluation, Japan
- UN Recommendations on the Transport of Dangerous Goods Model Regulations, 14th Edition
- The Chemical Database, The Department of Chemistry at the University of Akron http://ull.chemistry.uakron.edu/erd
- International Chemical Safety Cards (ICSC) http://www.nihs.go.jp/ICSC
- ECB-ESIS (European chemical Substances Information System) http://ecb.jrc.it/esis
- ECOTOX Database, EPA http://cfpub.epa.gov/ecotox
- IUCLID Chemical Data Sheet, EC-ECB
- Initial Assessment Report for SIAM 19, Synthetic Amorphous Silica, July 2004, UNEP, OECD.
- IMDG Code 2006 edition (Amendment 33-06), IMO

16.2 Initial Issue Date

16.3 Revision Number and Date
- Revision Number 5
- Revision Date Jul. 2019

16.4 Others
No Data Available