

15, Yongyeon-ro, 179 beon-gil, Nam-gu, Ulsan, 680-150, Korea  
www.koreaptg.co.kr

## PTMEG-2000

### 1. General Information

**Formula:**  $\text{H}[\text{O}(\text{CH}_2)_4]_n\text{OH}$

**CAS No.:** 25190-06-1

**Synonyms:** Polytetramethylene ether glycol (PTMEG), Poly(oxytetramethylene) glycol, Polytetramethylene oxide (PTMO), Polybutylene glycol, Polytetrahydrofuran (PTHF)

**Applications and Uses:** PTMEG belongs to the class of polyether polyols which have excellent reactivity. It is used to make a high quality of polyurethane including spandex and copolyester-ether in such applications as:

- Polyurethane Fibers (Spandex)
- Polyurethane Elastomers
- Synthetic Leathers
- Paint, Coating Agent
- Adhesives, Sealants
- Polyester Elastomers
- Polyamide Elastomers

### 2. Specification

Item	Unit	Specification	Test Method
Appearance	-	Transparent liquid or white waxy solid at low temperature	Macrography
Molecular Weight	g/mol	2000±50	ASTM D4274
Hydroxyl No.	mgKOH/g	54.7~57.5	ASTM D4274
Acid No.	mgKOH/g	Max 0.05	DIN 53402
Water	wt ppm	Max 200	DIN 51777
Color	APHA	Max 40	ASTM D1209
BHT	wt ppm	220±50	by UV

### 3. Physical Properties

Item	Properties
Boiling Point	More than 250°C
Flash Point	More than 260°C
Melting Point	32°C
Specific Gravity (40/4°C)	0.974
Viscosity (40°C)	1225 cP

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#### 4. Storage and Handling

##### Precautions

Because PTMEG is hygroscopic and oxidized, it is very important to protect PTMEG against exposure to moisture and air.

All Korea PTG's PTMEG contain oxidation inhibitors to prevent peroxides. PTMEG is ignitable at high temperature. Water spray, alcohol resistant foam, dry chemical or CO<sub>2</sub> extinguishers may be used to fight fire. When water or foam is used, frothing may occur.

When PTMEG is impregnated into high-surface-area material such as fibrous insulation (e.g., glass fibre, rock wool), PTMEG can be decomposed rapidly, releasing very flammable tetrahydrofuran, gamma-butyrolactone, etc. and may ignite at temperatures as low as 100°C.

##### Steel Drum

Solidified PTMEG can be molten by being heated in melting room about 70°C for about 2~3 days. Temperatures above 90 °C are not recommended for prolonged storage.

Drums should be stored in dry places such as warehouse with roof and before use any water on top plate of drums should be removed to prevent moisture contamination. During opening of drums and use of PTMEG in drums, nitrogen should be serviced into drums to avoid the contact with moisture and air.

##### ISO Tank

Shipping temperature of ISO tank for PTMEG is about 60°C. ISO tank is insulated and provided with heating coils for reheating. If temperature is low and the product is solidified, enough reheating is required for melting and careful attention is required to avoid plugging of vent, nitrogen gas line and product line. Insure that ISO tank is adequately grounded before connecting and unloading.

##### Storage Tank

The storage tank must be provided with external or internal heating to maintain a temperature of about 50~60°C (Internal heating coil is recommended due to heating efficiency).

Because PTMEG is hygroscopic and oxidized, it is very important to protect PTMEG against exposure to moisture and air. Therefore, Korea PTG recommends that PTMEG should be stored in completely enclosed tanks or containers under a dry nitrogen blanket.

##### Stability

Shelf life of PTMEG is approximate 2 years, under condition that the product is stored in unopened, tightly sealed original container at no greater than 90°C and is not contacted with air under a dry nitrogen blanket.

Shelf life is only guidance and is not a guarantee because there are various possibilities in site of end users to affect the quality of PTMEG.