

## POLYETHYLENE GLYCOL 400

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 1.1. Identification

Substance name : Polyethylene glycol 400  
CAS # : 25322-68-3  
Synonyms : PEG-8, PEG-400, Polyglycol, Polyethylene oxide, Polyoxy ethylene Poly(oxy-1,2-ethanediyl)

#### 1.2. Recommended use and restrictions on use

Applications of the substance/mixture

- Process textiles
- Paints and inks
- Plastic and rubber mold-release agent
- Production of other chemicals

#### 1.3. Supplier

Address : Novichem Co.  
30 Magnolia Str, Qaem Maqam Farahani Ave.  
Tehran 15886-13941 IRAN

#### 1.4. Emergency telephone number

Emergency number : +98-21-88329799 (Product information)

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

According to UN GHS criteria

No need for classification according to GHS criteria for this product.

#### Label elements

Globally Harmonized System (GHS)

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

#### Other hazards

According to UN GHS criteria

No specific dangers known, if the regulations/notes for storage and handling are considered.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substances

Component	Product identifier	%
Polyethylene glycol	CAS-No. 25322-68-3	> 99,0

## 4. FIRSTAID MEASURES

### Description of first aid measures

**General advice:** If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air; if effects occur, consult a physician.

**Skin contact:** Wash off with plenty of water.

**Eye contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**Ingestion:** No emergency medical treatment necessary.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

### Indication of any immediate medical attention and special treatment needed

**Notes to physician:** Absorption may be promoted by damaged skin. J Pharm Sci. 1985 Oct;74(10):1062-6; Burns Incl Therm Inj 1982 Sep;9(1):49-52. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

## 5. FIREFIGHTING MEASURES

**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Unsuitable extinguishing media:** Do not use direct water stream. May spread fire.

### Special hazards arising from the substance or mixture

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

### Advice for firefighters

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. 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.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

<b>Advice on safe handling</b>	Wear personal protective equipment. Avoid contact with skin and eyes.
<b>Advice on protection against fire and explosion</b>	Normal measures for preventive fire protection. Do not spray on a naked flame or any incandescent material.
<b>Fire-fighting class</b>	B: Fires involving liquids or liquid containing substances. Also includes substances which become liquid at elevated temperatures.

### 7.2 Conditions for safe storage, including any incompatibilities

<b>Requirements for storage areas and containers</b>	Keep tightly closed in a dry and cool place.
<b>Storage class (TRGS 510)</b>	10: Combustible liquids not in Storage Class 3
<b>Other data</b>	Stable at normal ambient temperature and pressure.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Components with occupational exposure limits

25322-68-3: (POLYMER) Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-

### Exposure controls

#### Personal protective equipment

##### Respiratory protection:

Respiratory protection in case of vapour/aerosol release. Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2)

##### Hand protection:

Chemical resistant protective gloves (EN ISO 374-1)

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):

nitrile rubber (NBR) - 0.4 mm coating thickness

Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Manufacturer's directions for use should be observed because of great diversity of types.

##### Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

##### Body protection:

Body protection must be chosen based on level of activity and exposure.

#### General safety and hygiene measures

Wearing of closed work clothing is recommended.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Form:	liquid	
Colour:	clear	
Odour:	mild, almost odourless	
Odour threshold:		
	not determined	
pH value:	6 <	
Freezing point:	approx. 5 °C (1.013 hPa)	
Boiling point:	> 148 °C	
Flash point: Evaporation rate:	238 °C	
Flammability:	not determined	determined
Lower explosion limit:		
	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:		
	For liquids not relevant for classification and labelling.	
Ignition temperature:	not determined	
Vapour pressure:	< 0,35 mmHg (20 °C)	
Density:	1,1227 g/cm <sup>3</sup> (20 °C)	
	Relative density: No data available.	
	Relative vapour density (air): not determined	
Solubility in water:	fully soluble	
Partitioning coefficient n-octanol/water (log Kow):	-2,3	(calculated) Thermal
decomposition:	not determined	
Viscosity, dynamic:	6,8 - 8 mPa.s (99 °C)	(internal method)
Explosion hazard:	not explosive	
Fire promoting properties:	not fire-propagating	

### Other information

Self heating ability:	It is not a substance capable of spontaneous heating according to UN transport regulations class 4.2.
Surface tension:	No data available.
Grain size distribution:	The substance / product is marketed or used in a non solid or granular form.
Other Information:	
	If necessary, information on other physical and chemical parameters is indicated in this section.

## 10. STABILITY AND REACTIVITY

**Reactivity:** No data available

**Chemical stability:** Thermally stable at typical use temperatures.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

**Incompatible materials:** Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Ethers. Carbon dioxide. Carboxylic acids. Polymer fragments.

## 11. TOXICOLOGICAL INFORMATION

*Toxicological information appears in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

LD50, Rat, > 10,000 mg/kg

### Skin corrosion/irritation

Prolonged contact is essentially nonirritating to skin.

### Serious eye damage/eye irritation

May cause slight temporary eye irritation.

Corneal injury is unlikely.

### Sensitization

Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:

No relevant data found.

### Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

### Specific Target Organ Systemic Toxicity (Repeated Exposure)

Recent findings of kidney failure and death in burn patients, as well as some studies using animal burn models, suggest that polyethylene glycol may have been a factor.

The use of topical applications containing this material may not be appropriate in severely burned patients or individuals with impaired renal function.

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

### Carcinogenicity

Did not cause cancer in laboratory animals.

### Teratogenicity

For similar material(s): Did not cause birth defects in laboratory animals.

### Reproductive toxicity

For similar material(s): In animal studies, did not interfere with reproduction.

### Mutagenicity

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

### Aspiration Hazard

**Acute dermal toxicity**

Prolonged skin contact is unlikely to result in absorption of harmful amounts.  
Prolonged/repeated exposure to damaged skin (as in burn patients) may result in absorption of toxic amounts.

LD50, Rabbit, > 20,000 mg/kg

**Acute inhalation toxicity**

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous.  
For respiratory irritation and narcotic effects: No relevant data found.

Typical for this family of materials.

LC50, Rat, 6 Hour, dust/mist, > 2.5 mg/l No deaths occurred following exposure to a saturated atmosphere.

## 12. ECOLOGICAL INFORMATION

**Toxicity**

Toxicity to fish:

LC50 > 500 mg/l, *Leuciscus idus*

Microorganisms/Effect on activated sludge:

> 5.000 mg/l (DEV-L2)

**Persistence and degradability**

Elimination information:

> 70 % DOC reduction (13 d) (OECD 301 A (new version)) Readily biodegradable.

Analogous: Assessment derived from products with similar chemical character.

**Bioaccumulative potential**

Assessment bioaccumulation potential:

Accumulation in organisms is not to be expected.

**Mobility in soil**

Assessment transport between environmental compartments:

Volatility: The substance will not evaporate into the atmosphere from the water surface. Adsorption in soil: Adsorption to solid soil phase is not expected.

**Results of PBT and vPvB assessment**

According to Annex XIV of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria. Self classification

**Other adverse effects**

The product does not contain substances that are listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

**Additional information**

Sum parameter

Chemical oxygen demand (COD): 1.660 mg/g

Biochemical oxygen demand (BOD) Incubation period 5 d: < 10 mg/g

Biochemical oxygen demand (BOD) Incubation period 30 d: 1.120 mg/g

Add. remarks environm. fate & pathway:

Treatment in biological waste water treatment plants has to be performed according to local and administrative regulations.

Other ecotoxicological advice:

The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:

Uncontaminated packaging can be re-used.

Packs that cannot be cleaned should be disposed of in the same manner as the contents.

## 14. TRANSPORT INFORMATION

### Land transport

ADR

Not classified as a dangerous good under transport regulations

UN number or ID number: Not applicable

UN proper shipping name: Not applicable

Transport hazard class(es): Not applicable

Packing group: Not applicable

Environmental hazards: Not applicable

Special precautions for user: None known

RID

Not classified as a dangerous good under transport regulations

UN number or ID number: Not applicable

UN proper shipping name: Not applicable

Transport hazard class(es): Not applicable

Packing group: Not applicable

Environmental hazards: Not applicable

Special precautions for user: None known

### Inland waterway transport ADN

Not classified as a dangerous good under transport regulations

UN number or ID number: Not applicable

UN proper shipping name: Not applicable

Transport hazard class(es): Not applicable

Packing group: Not applicable

Environmental hazards: Not applicable

Special precautions for user: None known

Transport in inland waterway vessel Not evaluated

### Sea transport

IMDG

Not classified as a dangerous good under transport regulations

UN number or ID number: Not applicable

UN proper shipping name: Not applicable

Transport hazard class(es): Not applicable

Packing group: Not applicable

Environmental hazards: Not applicable

Special precautions for user: None known

## 15. REGULATORY INFORMATION

### **Safety, health and environmental regulations/legislation specific for the substance or mixture**

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

## 16. OTHER INFORMATION

Information contained herein is provided 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.