

Identification of the substance or preparation: Country of origin: CAS Number: Synonyms:

Company/undertaking identification

Manufacturer subcontractor: Emergency phone number: Contact email: Fax: Association/Organization: Use of the substance/Preparation: **Monoethylene Glycol** 

Iran (Islamic Republic of Iran) 107-21-1 M.E.G Monoethylene Glycol; 1, 2 Ethanediol; 1, 2 Dihydroxy ethane; Ethylene dehydrate. (C2H6O2) National Petrochemical Company Iran Petrochemical Commercial Company (IPCC) None 00982188881735 msds@petrochem-ir.net 00982188839511 None Polyester, resins, wetting and plasticizing agents, coolant additives, formulation of printing ink

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous substances:Harmful Or Fatal If Swallowed.<br/>May Cause Eye Irritation.<br/>May Cause Respiratory Tract Irritation<br/>Mono ethylene glycol : 99.8 % MIN.Hazardous label(s):This material is hazardous by OSHA hazard<br/>communication definition.Toxicological characteristics:See section 11<br/>N/ASubstances present at a concentration<br/>below the minimum danger:<br/>Other component:Diethylene glycol : 0.08 % MAX

Water

3. IDENTIFICATION OF HAZARDS

**Risk phrases:** 

Skin contact: Eye contact: Inhalation : R-22 Harmful Or Fatal If Swallowed This material is hazardous by OSHA hazard communication definition. May cause slight skin irritation. May cause eye irritation. Corneal injury is unlikely. Vapors and mist at high temperature and poor ventilation may accumulate and cause respiratory irritation and symptoms such as headache and

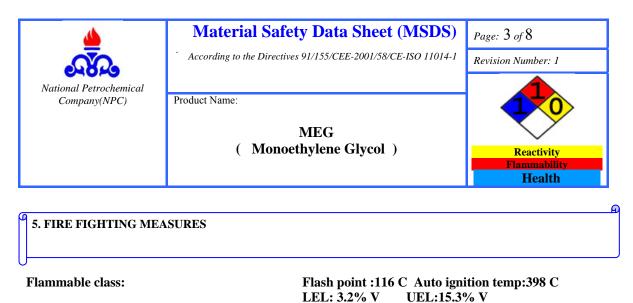
:0.08 % MAX

4	Material Safet	y Data Sheet (MSDS)	Page: 2 of 8
National Petrochemical Company(NPC)	According to the Directives	91/155/CEE-2001/58/CE-ISO 11014-1	Revision Number: 1
	Product Name:		
		MEG	
		( Monoethylene Glycol )	Reactivity
			Flammability Health
If swallowed: Other information:	ir Iı d d Cı T	ausea. Repeated excessive exp ritation of the upper respirat ngestion larger amounts may eath. May cause nausea, vom iscomfort, diarrhea, central n ardiopulmonary effects and k arget organ effects: central n ver and fetus.	ory tract. cause injury, even iting, abdominal ervous effects, idney failure.
4. FIRST AID MEASUR			
	se of doubt or if sympton ving in an unconscious po	ns persist, always call a doctor erson.	Ċ
Skin contact :		Wash skin with soap and ple	-
In case of exposure by i	nhalation:	irritation occurred take med Move victim to fresh air. If n artificial respiration, in case use rescuer protection. Oxygen may be used by qual	ot breathing give mouth to mouth
In case of splashes or co	ontact with eyes:	Get medical attention. Flash eyes thoroughly with w minutes. Remove contact len initial 1-2 minutes and contin Get medical attention	ses after the
In case of swallowing:		Seek medical attention imme	
Note of physician:		induce vomiting. If person is give 1cup (240 ml) of water r	
		grie Loup (210 mil) of Water 1	8

Note to physician :

If medical advice is delayed and if an adult has swallowed as 80 proof whiskey. In case of child give proportionally has liquor at a dose of 0.3 ounces (8 ml) liquor for each 10 pounds of body weight or 2ml per kg body weight. The main toxic effects when ingested are metabolic acidosis and kidney damage. Ethanol is antidotal and may prevent of formation toxic material in the liver. Ethanol should be given intravenously, as 5% solution in sodium bicarbonate at amount of 10 ml/hr. A desired therapeutic level of ethanol in blood is 100mg/dl.Hemodialysis may be required. Pulmonary edema with hypoxemia has been described in a number of patients following poisoning. The mechanism has not been elucidated but it appears to be noncardiogenic in origin in ventilation and positive end expiratory pressure may be applied. Correction of acidosis is essential.

anything by mouth for unconscious person.



Suitable extinguishing media:

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases: Special protective equipment for fire fighting :

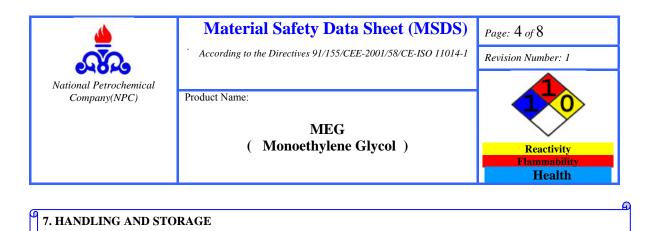
**Other information:** 

Water fog, fine spray, dry chemical, carbon dioxide, alcohol resistance foams, and protean foam. Do not use direct water stream. Use water spray to cool fire exposed containers and fire affected zone. Carbon monoxide, carbon dioxide, nitrogen oxides, varying composition which may be toxic and irritating. Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots and gloves). Isolate fire and deny unnecessary entry. If protective equipment is not available fight from a protected location and distance. Dilution of burning liquid with water may help distinguish of fire but does not use directly water. If it is possible move container from fire area safely.

Keep people away. Container may rupture from gas generation in a fire situation.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Isolate area .Keep unnecessary personnel from entering the area. Use suitable safety equipments.
Environmental precautions:	Prevent to entire into soil, ditches, sewers, waterways and /or ground waters.
Methods for cleaning up and disposal:	Large spills: Contain spilled material in labeled containers if possible. Dike area to contain spill. Small spills: Absorb with materials such as: cat litter, sand and saw dust.
Other information:	None

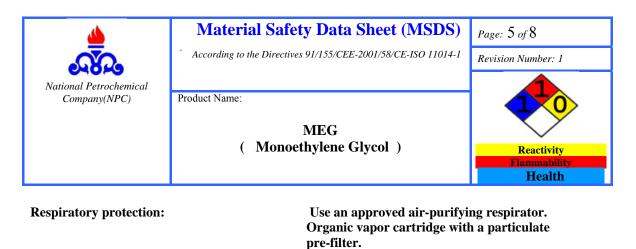


The regulations relating to storage premises apply to workshop where the product is handled:

Handling:	Do not heat and agitate because of vapor and mist. Avoid sparks, open flame and incompatible materials during handling. Use adequate ventilation /personal protection. Avoid contact with eye/skin/s and do not ingest. Do not entire storage without adequate ventilation. Vessels must be grounded. Do not eat, drink and smoke where this product is used.Do not swallow and contact eyes. Wash thoroughly after handling.
Storage:	Store under nitrogen blanket and at ambient temperature. equipment, Do not store near food stuffs and potable water Sources. Keep container closed and properly labeled. Store at cool, dry, ventilated area, flame, spark, grounded

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

)	
Exposure limit values:	Vapour and mist 127 mg/m3 50 ppm
•	ACGIH :100 mg/m3
	Consult local authorities for recommended exposure limits.
Exposure controls:	Atmospheric levels should be maintained below
-	the exposure guideline. Provide local exhaust ventilation.
Personal protective equipment:	Use protective clothing chemically resistant to
	this material. Selection of specific items such as
	face shield, boots, apron or full body suit will
	depend on the task. Use approved respiratory
	(NIOSH) protection if concentration exceeds
	TLV or unknown concentration and emergency condition.
	Clean all contaminated equipments before
	using.
Eye protection:	Use safety glasses or splash goggles. If eye is discomfort, use a full-face respirator. Remove contact lenses when working with this chemical.



**PVA, PVC** 

N/A

N/A

this material.

Hand protection:

Skin and body protection:

Health measures: Environmental exposure controls:

9. PHYSICAL AND CHEMICAL PROPERTIES

General information: Appearance (at 20°C): Colour: Odour: PH (at 20°C): Melting point/range (°C): Boiling point/range (°C): Flash point (°C): Flammability:

Auto-ignition temperature: Explosive properties: Oxidising properties: Vapour pressure (at 20°C): Density (at 20°C):

Solubility (at 20°C):

Viscosity (40°C): Evaporation rate: Other information: Monoethylene Glycol liquid Clear colourless Slight sweet Not applicable -13°C (9°F) > 196°C (>387°F) 116°C (241°F) Lower : 3.2 % (v) Upper :15.3 % (v) 400°C (752°F) No data available -0.06 mmHg Liewid density :11151 11

Use gloves. Suitable materials are: butyl rubber. NBR, Neoprene, natural rubber,

Safety shower should be available.

Use protective clothing chemically resistant to

Liquid density :1.1151 - 1.1156 (water=1) Vapour density : 2.1 (air=1) water solubility: 100%

solubility in fats: -

N/A 0.01 (butyl acetate=1) MW= 63 g/mol

## 10. STABILITY AND REACTIVITY

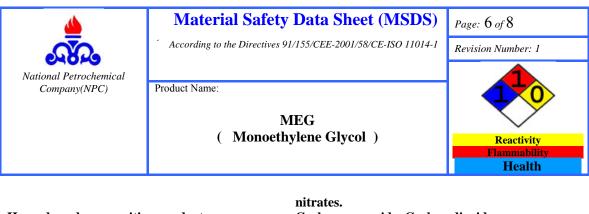
Stability: Conditions to avoid:

Material to avoid:

Stable under normal condition of use.

Heat, sparks, open flames and strong oxidizing conditions.

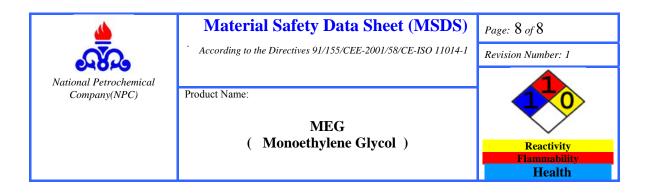
Strong acids, strong bases, strong oxidizers, permanganate, peroxides, dichromate's, reactive sodium compound, sulfur compound, alkali metals,



Hazardous decomposition products:	Carbon monoxide, Carbon dioxide As per amount of temperature and pressure may release aldehydes, alcohols and ethers.	
11. TOXICOLOGICAL INFORMATION		
Acute toxicity:	- LD <sub>50</sub> , oral, rat (mg.kg <sup>-1</sup> ): 25300 BWT	
	- LD <sub>50</sub> , oral, mouse (mg.kg <sup>-1</sup> ):13300 BWT	
Sub chronic – chronic toxicity:	- LD <sub>50</sub> , dermal (mg.kg <sup>-1</sup> ) Rabbit:11900 Central nervous system, kidney effects ,blood (metabolic acidosis),respiratory system, cardiovascular system	
Sensibilization:	No expected to be sensitizer.	
Carcinogenicity:	This product has not classified as a carcinogen Not listed by OSHA, IARC and NTP	
Reproductive effects:	No reproductive effects expected for human exposures.	
Human experience:	Mono ethylene glycol has low acute toxicity in experimental animals following oral, inhalation and dermal exposure. Ingestion in humans have caused poisoning and death.	
Other information:	Toxicity has three stages: stage1-(0.5-12 hours after ingestion) may include inebriation, nausea and vomiting, metabolic acidosis and CNS depression. Stage 2-(12-24 hours) tachycardia, hypertension, severe metabolic acidosis with hyperventilation, hypoxia, congestive heart failure and adult respiratory distress syndrome. Stage 3-(24-72 hours) renal failure. MEG ingestion also may cause local irritation in digestion system, pain and bleeding.	

12. ECOLOGICAL INFORMAT	ΓΙΟΝ
Ecotoxicity:	Toxicity to micro organism: Bacterial 16 h EC 50 >1000 mg/l
	Toxicity to acquit alive: water flea ceriodaphina dubia;LC 50 10000-28500mg/l fish :18000-46000 &2750 & 51000 mg/l
	This product is expected to be non-hazardous to aquatic species.

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	According to the Direct	tives 91/155/CEE-2001/58/CE-ISO 11014-1	Revision Number: 1
National Petrochemical			
Company(NPC)	Product Name:		
		MEG	$\sim$
	( Mon	oethylene Glycol )	Reactivity Flammability
			Health
Bio accumulative potenti Mobility	al:	Bio accumulation is expected Mobile in soil and water .Do	
Mobility:		surface of the water and soil	
Dorsistoneo and dograda	hility.	life is 0.35 up to 24 days. Bio gradable under aerobic	andition
Persistence and degradability:		Bio gradation will occur after	
Other adverse effects:		Hydroxyl radicals photo oxid	des this product.
13. DISPOSAL CONSIDE	RATIONS		
Disposal of product:		Disposal must be made accoulocal regulations.	rding to official and
		Do not dump into any sewer	s on the ground, or
		into any body of water. Can be disposed and taken v	in with sand
		vermiculite, household garba	
Disposal of packaging:		materials. Contaminated materials may	v he hazardous
Disposal of packaging.		waste.	y be hazar dous
		Use only licensed transporte facilities.	rs and permitted
14. TRANSPORT INFOR	MATION		
		Hazard class: 9	
Land transport: environmentally hazardous substance ,liquid,N.I.O.S		UN NO: UN 3082 Packaging group: III	
(Ethylene Glycol)		Shipping label: Miscellaneo	ous RQ Product
ADR/RID:		Hazard class: 9	
		UN NO: UN 3082	
		Packaging group: III Shipping label: Miscellaned	ous RO Product
		(For bulk shipment only )	
Maritime transport:		Hazard class: 9 UN NO: UN 3082	
		Packaging group: III	
		Shipping label: Miscellaneo	
		Drums ,pails or gallons cont RQ(5313 pounds)not subject	
			8
Air transport:		Hazard class: 9	
Air transport:		UN NO: UN 3082	
Air transport:			ous RQ Product



15. REGULATORY INFORMATION

Hazardous label(s):	This product is a "hazardous material" as defined by the OSHA hazard communication standard.
Safety phrases:	•
Risk phrases:	R-22

## **16. OTHER INFORMATION**



## The contents and format of this MSDS are in accordance with EEC Commission Directive 2001/58/EC

## Disclaimer of liability:

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