

Zemestan

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	Zemestan
Product use	Antifreeze/Coolant
Manufacturer & Supplier	TABCHEM

Address ABCHEM CHEMICAL INDUSTRIES COMPANY, NO. 97, 5TH FLOOR, SOUTH IRANSHAHR STREET, BELOW SOMAYEH STREET, TEHRAN, IRAN

Phone Numbers	+98 21 8884 0868
Fax Number	+98 21 8882 8776
Email	info@tabchem.ir
Website	https://tabchem.ir

2. HAZARDS IDENTIFICATION

Classification of the product (GHS)

Based on available data this substance/ mixture does not meet the Classification criteria.

Label elements (GHS)

- **Hazard pictogram** No Hazard symbol required
- **Signal word** No signal word

Hazard statement (GHS)

PHYSICAL HAZARDS:

Not classified as a physical hazard under GHS criteria.

HEALTH HAZARDS:

Not classified as a health hazard under GHS criteria.

ENVIRONMENTAL HAZARDS:

Not classified as an environmental hazard under GHS criteria.

- Precautionary statement (GHS)

Prevention	No precautionary phrases
Response:	No precautionary phrases
Storage	No precautionary phrases
Disposal	No precautionary phrases

Other hazards

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. Used oil may contain harmful impurities. Not classified as flammable but will burn.

NFPA Hazard ID: Health: 1 Flammability: 1 Reactivity: 0

HMIS Hazard ID: Health: 1 Flammability: 1 Reactivity: 0

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Substance/ mixture

Mixture

Component	Identifier	Weight Percent Range	GHS Hazard Codes
Ethylene Glycol	107-21-1	>90	H302 Harmful if swallowed H373 May cause damage to organs through or repeated exposure
Other ingredients	Mixture	<10	
Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers)			

4. FIRST AID MEASURES

General Information:

Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.

Eye Contact:

Immediately flush eyes with large amounts of water and continue flushing until irritation subsides. In all cases of eye contamination it is a sensible precaution to seek medical advice.

Skin Contact:

Remove contaminated clothing. Wash contaminated area thoroughly with soap and water. If redness or irritation occurs and persists, seek medical attention. If product is hot, submerge injured area in cold water. If victim is severely burned, remove to a hospital immediately.

Inhalation:

If inhaled, remove to fresh air. Get medical attention if symptoms occur.



Ingestion:

Rinse mouth with water. Seek medical advice.

Advice to Physicians:

Immediate medical attention is required. May be harmful or fatal if swallowed. Use of ethanol may be helpful to counter the toxic effects of ethylene glycol by interfering with the absorption rate in the stomach and intestine. Onset of symptoms may be delayed for 18 to 24 hours after ingestion. Symptoms may be delayed.

5. FIRE FIGHTING MEASURES

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

Products of combustion co-ordinate firefighting measures to the fire surroundings water spray, alcohol resistant foam, dry extinguishing powder, BC-powder Carbon oxides (CO₂)

Unusual fire/explosion hazards water jet

Fire-fighting media and instructions

Not combustible, however following evaporation of aqueous component residual material can burn if ignited.

Specific hazards arising from the chemical

Combustible. Vapours are heavier than air, spread along floors and form explosive mixtures with air.

6. ACCIDENTAL RELEASE MEASURES**Large spill:**

Clear area of all unprotected personnel. Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.

Small spill:

Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours or dust. Wipe up with absorbent (clean rag or paper towels). Collect and seal in properly labelled containers or drums for disposal.



7. HANDLING AND STORAGE

Handling: Avoid contact with skin and clothing. Avoid prolonged or repeated contact with skin. Avoid contact with eyes. Use only with adequate ventilation. Avoid breathing vapor or mist. Wash thoroughly after handling.

Storage Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Store away from sources of heat and/or ignition. Store locked up. Keep container standing upright. Keep containers closed when not in use - check regularly for leaks.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Occupational exposure limits

Name of Agent	CAS No.	Type	Exposure Limits	
			TLV	
Ethylene Glycol	CAS No.: 107-21-1 EC No.:203-473-3	TWA	52mg/m ³	Ethylene Glycol
		STEL	120mg/m ³	

TWA: Time Weighted Average over 8 hours of work.
STEL: Short Term Exposure Limit during 15 minutes.

Personal protection:

Eyes Eye wash bottle with pure water Tightly fitting safety goggles

Inhalation Use sufficient mechanical ventilation to maintain exposures below the TLV. Use local exhaust if mist or spray is generated.

Skin Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear impervious gloves, such as butyl rubber. Advice should be sought from glove suppliers.

Other Do not breathe mist or vapor. Avoid contact with eyes, skin and clothing. When using do not eat or drink. When using do not smoke. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Color	Green
Odor	Characteristic
Explosive Limits	Not determined
UEL	
LEL	

NOTE: Petroleum vapors are flammable (explosive) in proportions between approximately 1% and 10% of vapor in air by volume at ambient temperatures and pressures.

Vapor Pressure	Not determined
Vapor Density	Not determined
pH 50%	8.4 ASTM D1287
Density at 15°C (kg/m³)	1117
Boiling Point 50%	109 ASTM D1120
Solubility	Soluble in Water
Initial Boiling Point and Boiling Range	Not Applicable
Flash Point (°C)	>120
Flammability (Solid, Gas)	Not Relevant (fluid)
Auto-ignition Temperature	Not determined
Decomposition Temperature	Not determined
Kinematic Viscosity at 40°C (cSt)	Not determined
Pour point (°C)	Not determined

10. STABILITY AND REACTIVITY

Stability and reactivity	Stable under recommended storage conditions.
Conditions to avoid	Elevated temperatures and sources of ignition.

Incompatibility with various Substances

Strong acids and strong oxidising agents.

Hazardous decomposition products

Oxides of carbon and nitrogen, smoke and other toxic fumes.

Hazardous polymerization

May react with strong acids or strong oxidising agents, such as chlorates, nitrates, peroxides, etc.



11. TOXICOLOGY INFORMATION

Toxicological data

Chemical Name	LC50 (4h) Rat, Inh.	LD50	
		Rat, Oral	mouse, Dermal
Ethylene Glycol	>200 mg/m3 (aerosol)	4700 mg/kg	3500 mg/kg
Mixture	No toxicological data is available for the mixture		

Note: No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label.

Hazard Class

Inhalation

Acute Toxicity: No end point data for material.

Irritation: No end point data for

Ingestion

Acute Toxicity (Human): LDLo 100 ml

Skin

Acute Toxicity: No end point data for material.

Skin Corrosion/Irritation: No end point data for material.

Eye

Serious Eye Damage/Irritation: No end point data for material.

Sensitisation

Respiratory Sensitization: No end point data for material.

Skin Sensitization: No end point data for material.

Aspiration: No end point data for material.

Germ Cell Mutagenicity: No end point data for material.

Conclusion / Remarks

Minimally Toxic. Based on assessment of the components.

Negligible hazard at ambient/normal handling

Moderately toxic. Based on assessment of the components.

Minimally Toxic. Based on assessment of the components.

Negligible irritation to skin at ambient temperatures. Based on assessment of the components.

May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

Not expected to be a respiratory sensitizer.

Not expected to be a skin sensitizer. Based on assessment of the components.

Not expected to be an aspiration hazard. Based on physico- chemical properties of the material.

Not expected to be a germ cell mutagen. Based on assessment of the components.



Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Contains a substance that may be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Contains a substance that may cause damage to organs from prolonged or repeated exposure. Based on assessment of the components.

12. ECOLOGICAL INFORMATION

Mixtures

Eco-toxicity	Not expected to be harmful to aquatic organisms.
Mobility	This product is miscible in water. It has not been evaluated for ecological toxicity or other environmental effects.
Persistence and Degradability	
Biodegradation:	This material is expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components
Bioaccumulation Potential	This Product has the potential to bio accumulate, however metabolism or physical properties may reduce the bio concentration or limit bioavailability.

13. DISPOSAL CONSIDERATIPONS

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/ regional/ national/ international regulations.
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Local disposal regulations Dispose in accordance with all applicable regulations.

Waste from residues/ unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This product and its container must be disposed of in a safe manner.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Note: Refer to the waste management law of the parliament of the Islamic Republic of Iran in 1383 and the implementing regulations of the government of the Republic of Iran in 1384 to find out all the rules and regulations for waste disposal in the country.

14. TRANSPORT INFORMATION

	IMDG	IATA	DOT Classification/ NA Number
UN number	None allocated	None allocated	None allocated

Note: This product is not classified as dangerous good by ADG, IATA or IMDG/ IMBC criteria. No special transport conditions are necessary unless required by other regulations.

Land transport (ADR/ RID) This product is not classified as dangerous for this mode of transport.

Inland waterways transport (ADN) This product is not classified as dangerous for this mode of transport.

Sea transport (IMDG Code) This product is not classified as dangerous for this mode of transport.

Air transport (IATA/ ICAO) This product is not classified as dangerous for this mode of transport.

Shipping description (IMO/IMDG) Petroleum lubricating oil not regulated as a hazardous material for transport.

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

OSHA/HCS status: This product is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

- SARA SECTIONS 301- 304:

This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances List.

- SARA SECTION 311/312 (Hazard):

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

- SARA SECTION 313:

This product does not contain any hazardous ingredients at or above regulated thresholds.

- The environmental protection Act (Environmental laws and Regulations of Iran-article 9)
- The regulation of control of hazardous products and flammable and explosive - (29, 30, 36 up 57 articles)
- The regulation of water pollution prevention– article 2
- The regulation of hazardous product road transportation – article 1
- Occupational exposure limit; 2019, center of excellence for occupational health, Tehran university of medical sciences, school of public health, ISBN: 978-964-5430-93-3
- TLVs and BEIs Based on the Documentation of the Defining the Science of Occupational and Environmental Health Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices; 2019, Defining the Science of Occupational and Environmental Health, ISBN: 978-1-607261-05-6

16. OTHER INFORMATION

Abbreviations and Acronyms

ADN:	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road



CAS:	Chemical Abstracts Service
EC:	European Community
GHS:	Globally Harmonized System
IATA:	International Air Transport Association
IMDG:	International Maritime Dangerous Goods
LC50:	Lethal Concentration, 50%
LD50:	Lethal Dose, 50%
OEL:	Occupational Exposure Limit
PBT:	Persistent, Bio accumulative and Toxic
RID:	Regulations Concerning the International Carriage of Dangerous Goods by Rail
SARA:	Superfund Amendments and Reauthorization Act
SCBA:	Self-Contained Breathing Apparatus
STEL:	Short Term Exposure Limit
STOT:	Specific Target Organ Toxicity
TLV:	Threshold Limit Value
TWA:	Time Weighted Average
vPvB:	very Persistent and very Bio-accumulative

