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I. **Product Identification**

Pentosin Antifreeze

Supplier: Deutsche Pentosin-Werke GmbH, Industriestr. 39-43, 22880 Wedel
Phone 0049-4103-9134-0

Chemical Names and Synonyms: Ethylene Glycol

Use or Description: Automotive Cooling Concentrate

Product and MSDS Information: 0049-4103-9134-0

II. **Typical Chemical and Physical Properties**

Appearance: Blue Liquid *Odor:* Mild *PH:* 7,5

Viscosity AT 40 C, CS: < 4

Viscosity AT 100 C, CS: NE

Flash Point F (C): 244 (118) (ASTM D-92)

Melting Point F (C): NA *Pour Point F (C):* NA

Boiling Point F (C): >302 (>150) *VOC:* NE

Relative Density, 15/4 C: 1,13 *Solubility in water:* Complete

Vapor Pressure-mm Hg 20C: < 0,1

(NA = not applicable NE = not Established D = Decomposes)

III. **Potentially Hazardous Ingredients**

Ingredients Considered Hazardous to Health:

<u>Substance Name</u>	<u>Wt%</u>
Ethylene Glycol (107-21-1)	95

See Sections XII and XIII for regulatory and further compositional data.

IV. **Health Hazard Data**

US OSHA Hazard Communication Standard: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined to be hazardous.

Effects of Overexposure: Ingestion of ethylene glycol may result in nausea, vomiting, abdominal cramps, convulsions, edema of the lung, cardiopulmonary effects (metabolic acidosis), pneumonia and kidney failure which could result in death. The single lethal dose for humans is about 100 ml. Inhalation of high levels of vapors or mists for prolonged periods of time may also result in toxic effects. Harmful effects or illness can result from swallowing this material.

Emergency Response Data: Blue Liquid *DOT ERG No.:* NA



- V. **Emergency And First Aid Procedures - For Primary Routes Of Entry -**
Eye Contact: Flush thoroughly with water. If irritation occurs, call a physician.
Skin Contact: Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.
Inhalation: Remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance and call a physician. If breathing has stopped, use mouth to mouth resuscitation.
Ingestion: Seek immediate medical attention. If medical attention will be delayed induce vomiting with syrup of ipecac followed by 1/2 to 1 full glass of water. If syrup of ipecac is not available, induce vomiting by placing finger down the throat. Do not induce vomiting or give anything by mouth to an unconscious person.
- VI. **Fire and Explosion Hazard Data**
Flash Point F (C): 244 (118) (ASTM D-92)
Flammable Limits: LEL: 3,2% UEL: 15,3%
Extinguishing Media: Carbon dioxide, foam, dry chemical and water fog.
Special Fire Fighting Procedures: Water or foam may cause frothing. Use water to keep fire exposed containers cool. Water spray may be used to flush spills away from exposure. For fires in enclosed areas, fire fighters must use self-contained breathing apparatus. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.
Unusual Fire and Explosion Hazards: None
NFPA Hazard ID: Health: 0, Flammability: 1, Reactivity: 0
- VII. **Reactivity Data**
Stability (Thermal, Light, etc.): Stable
Conditions to avoid: Extreme heat
Incompatibility (Materials to Avoid): Strong oxidizers.
Hazardous Decomposition Products: Carbon monoxide.
Hazardous Polymerization: will not occur
- VIII. **Spill or Leak Procedure**
Environmental Impact: Report spills as required to appropriate authorities. U. S. Coast Guard regulations require immediate reporting of spills that could reach any waterway including intermittent dry creeks. Report spill to Coast Guard toll free number (800) 424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.

(Section continued next page)



Procedures if Material is Released or Spilled: Adsorb on fire retardant treated sawdust, diatomaceous earth, etc. Scrape up and remove. Dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal.

Waste Management: Product is suitable for processing by an approved recycling facility or can be disposed of at any government approved waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

IX. Special Protection Information

Eye Protection: Chemical type goggles and face shield should be worn if contact with liquid may occur.

Skin Protection: If prolonged or repeated skin contact is likely, impervious gloves should be worn. Good personal hygiene practices should always be followed.

Respiratory Protection: Approved respiratory protective equipment should be used if ventilation is inadequate and breathing of mists or vapors is likely.

Ventilation: Use in well ventilated area.

Substance Name (CAS-No.)	Source	TWA		STEL		NOTE
		ppm	mg/m ³	ppm	mg/m ³	
<i>Ethylene Glycol</i> (107-21-1)						
Vapor & Mist	Mobil			50	127	Ceiling
	OSHA			50	125	Ceiling
Vapor & Mist	ACGIH			50	127	Ceiling

Note: Limits shown for guidance only. Follow applicable regulations.

X. Special Precautions

None



XI. Toxicological Data - Acute Toxicology

Oral Toxicity (Rats): Harmful (LD50: greater than 200 but 2000 mg/kg or less).

---Based on testing of similar products and/or the components.

Dermal Toxicity (Rabbits): Practically non-toxic (LD50: greater than 2000 mg/kg).

Based on testing of similar products and/or the components.

Inhalation Toxicity (Rats): Practically non-toxic (LC50: greater than 5 mg/l).

--- Based on testing of similar products and/or the components.

Eye Irritation (Rabbits): Practically non-irritating. (Draize score: greater than 6 but 15 or less).

Skin Irritation (Rabbits): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3).

Other Acute Toxicity Data: Orally, ethylene glycol is more toxic to humans than animal test data indicates. Probable lethal dose for an adult is 100 ml. Smaller doses can cause serious kidney injury.

Reproductive Toxicology (Summary):

Ethylene glycol, when administered orally to pregnant rats at 2250 mg/kg/day caused some malformations of the offspring. The NOEL was 1250 mg/kg/day. No developmental or teratological effects were observed in rabbits administered 2000 mg/kg/day orally. Aerosols of 2500 mg/m³ during organogenesis resulted in teratogenic effects in mice but not rats. Nose-only exposure of mice to aerosols of 1000 mg/m³ resulted in developmental effects but minimal teratogenic effects. The NOEL based on maternal toxicity was 500 mg/m³. When applied to the skin of rats during organogenesis no teratogenic effects were observed. Although these effects are not known to occur in humans, precautionary measures should be taken to avoid exposure during pregnancy, particularly in the early stages.

Chronic Toxicology (Summary):

Small quantities of ethylene glycol ingested, inhaled or absorbed through the skin repeatedly over a prolonged period of time may result in systemic toxic effects. Rats fed 1-2 percent ethylene glycol for two years suffered severe kidney damage, liver damage and bladder stones. Inhalation studies for two years at 100 ppm with 7 species of animals did not result in any adverse effects other than respiratory irritation. No carcinogenic effects were observed in animals when they were either injected with the solvent or fed at one percent in the diet for two years. Carcinogenic effects are not known to occur in humans exposed to ethylene glycol.



XII. Regulatory Information

Governmental Inventory Status: All components registered in accordance with TSCA.
Transport Information: Please see section XIV.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:

~~This product contains no "Extremely Hazardous Substances"~~

SARA (311/312 - Formerly 302) Reportable Hazard Categories:
Chronic Acute

This product contains the following *SARA (313)* toxic release chemicals:

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Conc.</u>
Ethylene Glycol	107-21-1	95%

The following product ingredients are cited on the lists below:

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>List Citations</u>
Ethylene Glycol	107-21-1	1, 10, 18, 19, 20, 21, 23, 24, 25, 26

Regulatory Lists Searched

1 = ACGIH ALL	6 = IARC 1	11 = TSCA 4	17 = CA P 65	22 = MI 293
2 = ACGIH A1	7 = IARC 2A	12 = TSCA 5a2	18 = CA RTK	23 = MN RTK
3 = ACGIH A2	8 = IARC 2B	13 = TSCA 5e	19 = FL RTK	24 = NJ RTK
4 = NTP CARC	9 = OSHA CARC	14 = TSCA 6	20 = IL RTK	25 = PA RTK
5 = NTP SUS	10 = OSHA Z	15 = TSCA 12b	21 = LA RTK	26 = RI RTK
		16 = WHMIS		

CARC = carcinogen; SUS = suspected carcinogen

Note: Pentosin Products are not formulated to contain PCBS.

XIII. Ingredients

<u>Ingredient</u>	<u>CAS Number</u>
Ethylene Glycol	107-21-1
Other Inhibitors	

XIV. Transport and Label Information

~~USA DOT: not regulated by USA DOT~~

~~IMO: not regulated by IMO~~

~~IATA: not regulated by IATA~~



XV. **Other Information**

OSHA Precautionary Label Text:

Contains Ethylene Glycol

Warning

Swallowing, prolonged breathing of vapors or absorption through the skin may cause nausea, vomiting, central nervous system depression, effects on the heart and lungs, liver and kidney damage.

May cause birth defects based on animal ingestion and inhalation studies.

Avoid all personal contact and breathing vapor.

Keep container closed.

Use with adequate ventilation.

First Aid: If swallowed, induce vomiting immediately with syrup of ipecac followed by 1/2 to 1 full glass of water. If syrup of ipecac is not available, induce vomiting by placing finger down the throat. Call a physician. Do not induce vomiting or give anything by mouth to an unconscious person.

In case of contact, wash thoroughly with soap and plenty of water. Remove contaminated clothing and wash before reuse. Get medical attention if symptoms develop.

If inhaled and symptoms develop, remove to fresh air and get medical attention.

For industrial use only.

Not intended or suitable for use in or around a household or dwelling.

Empty containers may contain product residue including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings and precautions must be observed until the container has been thoroughly cleaned or destroyed.

Refer to product material safety data sheet for further safety and health information.

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user and we expressly disclaim all warranties of every kind and nature, including warranties of merchantability and fitness for a particular purpose in respect to the use or suitability of the product. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

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