

MATERIAL SAFETY DATA SHEET

PROPYLENE GLYCOL INDUSTRIAL

SECTION I – PRODUCT INFORMATION

Distributor's name: Allied Rubber & Gasket Company, Inc. – ARGCO
2610 Commerce Way
Vista, Ca 92081

In case of emergency: 517-636-4400

For information call: (800) 258-2436

Date prepared: 1/23/2007

Product name: Propylene Glycol Industrial

Product Code: 70511

SECTION II – COMPOSITION/INFORMATION ON INGREDIENTS

Propylene glycol	CAS# 000057-55-6	99%
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SECTION III – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW Colorless liquid. Odorless. Toxic fumes are released in fire situations.

Potential Health Effects

(See Section 11 for Toxicological Data)

- Eye:** May cause slight transient (temporary) eye irritation. Corneal injury is unlikely. Mists may cause eye irritation.
- Skin:** Prolonged contact is essentially nonirritating to skin. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Repeated exposures may cause flaking and softening of skin. May be absorbed in potentially harmful amounts when applied in large quantities to severe burns (second or third degree) over large areas of the body as part of a cream or other topical application. Absorption under such circumstances can elevate serum osmolality and may result in osmotic shock.
- Ingestion:** Single dose oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.
- Inhalation:** At room temperature, vapors are minimal due to physical properties. Mists may cause irritation of upper respiratory tract.
- Systematic (other target organ) Effects:**
Repeated excessive ingestion may cause central nervous system effects.
- Cancer Information:**
Did not cause cancer in long-term animal studies.
- Teratology (Birth defects):**
Birth defects are unlikely. Exposures having no adverse effects on the mother should have no effect on the fetus.
- Reproductive Effects:**
In animal studies, has been shown not to interfere with reproduction.

SECTION IV – FIRST AID

Eye: Flush eyes with plenty of water. **Skin:** Wash off in flowing water or shower.
Ingestion: No adverse effects anticipated by this route of exposure incidental to proper industrial handling.
Inhalation: Remove to fresh air if effects occur. Consult a physician.
Note to Physician:
No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

SECTION V – FIRE FIGHTING MEASURES

Flammable Properties

Flash Point: 218°F, 103°C **Method Used:** PMCC **Auto Ignition Temperature:** Not determined

Flammability Limits **LFL:** 2.6% **UFL:** 12.5%

Hazardous Combustion Products:

During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to: aldehydes, carbon monoxide.

Other Flammability Information:

Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Spills of these organic liquids on hot fibrous insulations may lead to lowering of the auto ignition temperatures possibly resulting in spontaneous combustion.

Extinguishing Media:

Water fog or fine spray, carbon dioxide, dry chemical, and foam. Alcohol resistant foams (ATC type) are preferred if available. General-purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively. Do not use direct water stream. Will spread fire.

Media to be Avoided:

Do not use direct water stream.

Fire Fighting Instructions:

Keep people away. Isolate fire area and deny unnecessary entry. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Burning liquids may be extinguished by dilution with water.

Protective Equipment for Fire Fighters:

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

SECTION VI – ACCIDENTAL RELEASE MEASURES

See Section 15 for Regulatory Information

Protect People: Isolate area.
Protect the Environment: Contain liquid to prevent contamination of soil, surface water or ground water.
Cleanup: For small spills: clean up with absorbent material. Collect material in suitable and properly labeled open containers. For large spills: Dike and pump into suitable and properly labeled containers.

SECTION VII – HANDLING AND STORAGE

Handling: Product handled hot may require additional ventilation or local exhaust.
Storage: Keep containers tightly closed when not in use. Store in stainless steel, aluminum, plastic 3066 lined containers or 316 stainless steel.

SECTION VIII – EXPOSURE CONTROLS/ PERSONAL PROTECTION

Engineering Controls: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

Personal Protective Equipment

Eye/Face Protection: Use safety glasses. Safety glasses should be sufficient for most operations; however, for misty operations wear chemical goggles.

Skin Protection: Use gloves impervious to this material.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In misty atmospheres, use an approved mist respirator.

Exposure Guidelines: Propylene glycol: AIHA WEEL is 50 PPM total, 10-mg/m³ aerosol only.

SECTION IX – PHYSICAL & CHEMICAL PROPERTIES

Appearance:	Colorless liquid	Odor:	Odorless
Vapor Pressure:	0.08 MMHG @ 20°C, 68°F	Vapor Density:	2.62
Boiling Point:	370°F, 188°C	Solubility in Water:	Complete
Specific Gravity:	1.038 20/20°C, 68°F		

SECTION X – STABILITY & REACTIVITY

Chemical Stability: Stable

Conditions to Avoid: Product can decompose at elevated temperatures.

Incompatibility with Other Materials: Avoid contact with oxidizing materials.

Hazardous Decomposition Products: When available oxygen is limited, as in a fire or when heated to very high temperatures by hot wire or plate, carbon monoxide and other hazardous compounds, such as aldehydes, might be generated.

Hazardous Polymerization: Will not occur.

SECTION XI – TOXICOLOGICAL INFORMATION

See Section 3 for potential health effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1.

Skin: The LD50 for skin absorption in rabbits is >10,000 mg/kg.
Ingestion: The oral LD50 for rats is 20,000 – 34,000 mg/kg.
Mutagenicity: In vitro mutagenicity studies were negative. Animal mutagenicity studies were negative.

SECTION XII – ECOLOGICAL INFORMATION

For detailed ecological data, write or call the address or non-emergency number shown in Section 1

Environmental Fate

Movement & Partitioning: Based largely or completely on information for similar materials, i.e. propylene glycol. Bioconcentration potential is low (BCF less than 100 or Log Pow less than 3) Log octanol/water partition coefficient (log pow) is -0.92. Henry's law constant (H) is 1.25-8 ATM.M3/MOLE.

Degradation & Persistence: Based largely or completely on information for similar material(s), i.e. propylene glycol. Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/THOD greater than 40%). Biodegradation is expected to be achievable in a secondary wastewater treatment plant. 5-day biochemical oxygen demand (BOD5) is 1.16 p/p. 20-day biochemical oxygen demand (BOD20) is 1.45 p/p. Theoretical oxygen demand (THOD) is calculated to be 1.68 p/p. Inhibitory concentration (IC50) in OECD activated sludge respiration inhibition test (OECD Test No. 209) is greater than 1 gm/L. Degradation is expected in the atmospheric environment within minutes to hours.

Ecotoxicity: Based largely or completely on information for similar material(s), i.e. propylene glycol. Material is practically non-toxic to aquatic organisms on an acute basis (LC50 greater than 100 mg/L in most sensitive species).

Acute LC50 for Fathead Minnow (*Pimephales promelas*) is 46,500-54,900 mg/L Acute LC50 for guppy (*Poecilia reticulata*) is greater than 10,000 mg/L. Acute LC50 for water flea daphnia magna is 4,850-34,400 mg/L. Acute LC50 for Rainbow trout (*Oncorhynchus mykiss*) is 44 ml/L (about 44,000 mg/L).

SECTION XIII – DISPOSAL CONSIDERATIONS

Disposal: Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all federal, state/provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. The Dow chemical company has no control over the management practices or manufacturing processes of parties handling or using this material. The information presented here pertains only to the product as shipped in its intended condition as described in MSDS Section 2 (Composition/Information on Ingredients).

For Unused & Uncontaminated Product, the preferred options include sending to a licensed, permitted: Recycler, reclaimer, incinerator, waste water treatment system.

As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's customer information center at 800-258-2436 or 517-832-1556 for further details.

SECTION XIV – TRANSPORT INFORMATION

Department of Transportation: This product is not regulated by D.O.T. when shipped domestically by land.

Canadian TDG Information: For TDG regulatory information, if required, consult transportation regulations, product shipping papers, or your Dow representative.

SECTION XV – REGULATORY INFORMATION

Not meant to be all-inclusive – selected regulations represented

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another: it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

U.S. Regulations

SARA 313 Information: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:
Not to have met any hazard category.

Toxic Substances Control Act (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

State Right-to-Know: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

<u>Chemical Name</u>	<u>CAS#</u>	<u>List</u>
1,2-Propanediol	000057-55-6	PA1

PA1= Pennsylvania hazardous substance (present at greater than or equal to 1.0%)

OSHA Hazard Communication Standard:

This product is not a "hazardous chemical" as defined by the OSHA hazard communication standard, 29 CFR 1910.1200

Canadian Regulations

WHMIS information: The Canadian workplace hazardous materials information system (WHMIS) classification for this product is: This product is not a "controlled product" under WHMIS.

SECTION XVI – OTHER INFORMATION

MSDS Status: Revised Section 13, disposal.

Disclaimer

The information contained herein is accurate and reliable as of the date issued to the best of the manufacturer's knowledge. ARGCO doesn't warrant or guarantee its accuracy or reliability and shall not be liable for any loss or damage arising from the use thereof. It is the user's responsibility to satisfy itself that the information offered for its consideration is suitable for its particular use.

END OF MATERIAL SAFETY DATA SHEET

FLUID TESTING CHART FOR GLYCERINE*

HYDROMETER READING (SPECIFIC GRAVITY AT 77°F)	REFRACTOMETER READING (FREEZE POINT **)	BURST POINT
1.141	-15°F	-50°F***
1.116	- 5°F	-45°F
1.102	0°F	-40°F
1.096	+10°F	-35°F

FLUID TESTING CHART FOR PROPYLENE GLYCOL*

HYDROMETER READING (SPECIFIC GRAVITY AT 77°F)	REFRACTOMETER READING (FREEZE POINT **)	BURST POINT
1.033	0°F	-50°F***
1.028	+10°F	-20°F
1.024	+15°F	0°F
1.020	+20°F	+10°F

*These tables are for reference purposes only. All temperature readings are approximations and should be used as guidelines only.

**It should be noted that the freeze points for glycols are the temperature at which the ice crystals first form. Below these temperatures, a slushy solution exists which will permit flow. However, as the temperature decreases, the slush becomes more viscous until freezing eventually occurs.

*** Recommended minimum level.

ANTI-FREEZE TESTER FOR PROPYLENE GLYCOL USE
ITEM #30-99-173

INSTRUCTIONS:

ARGCO's Propylene Glycol Tester indicates the freeze point of the contents of sprinkler systems, which have been treated with Propylene Glycol only. It is not intended for testing of systems protected with glycerine or other anti-freeze agents. It will operate with a sample as small as two ounces.

ASSEMBLY:

1. Push the rubber bulb onto either end of the large glass tube.
2. Slide the glass float into the glass tube, with the small end towards the rubber bulb.
3. Push the rubber suction tube onto the open end of the glass tube.
4. Be sure both rubber ends are seated fully onto the glass tube until their respective recesses tightly surround the flared ends of the tube.

FREQUENCY OF TESTING:

NFPA-13 recommends checking of solutions in Anti-Freeze Systems two or three times during each freezing season. It also mandated that, at the beginning of each season, the entire Anti-Freeze System must be drained and tested for suitable concentration of anti-freeze agent. (Propylene Glycol and Glycerine are the only substances suitable for use in potable water connected systems.)

TEST SAMPLING:

NFPA-13 requires installation of two solutions test valves on each Anti-Freeze System.

To test:

1. Draw a small amount of fluid (2-4 oz.) from either or both valves into a suitable container. Shake well to assure thorough mixing.
2. Squeeze bulb and release to draw fluid from container into glass tube of tester. Draw enough samples to cause glass float to become buoyant in sample.
3. Tap sides of tester or shake gently to assure that float does not stick to side of glass tube, resulting in false reading.
4. Read temperature (in degrees F) to which system is protected directly of point on float where water line settles.

CUSTOMER SERVICE: 800-854-1015

FAX 760-727-3270