



Polar Guard® Advance

Type IV Aircraft Deicing / Anti-icing Fluid

Safety Data Sheet

Section 1: IDENTIFICATION

PRODUCT IDENTIFIER

Polar Guard® Advance

Type IV Aircraft Deicing / Anti-icing Fluid

Complies with Specification AMS 1428/1

RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

Deicing / Anti-icing aircraft

DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

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Fort Madison, IA 52627
United States**Contact Information**Telephone: +1 (800) 346-7237
Fax: +1 (319) 372-2662
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Website: www.cryotech.com

EMERGENCY TELEPHONE NUMBER

CHEMTREC (800) 424-9300
Outside continental USA (703) 741-5970

Section 2: HAZARD(S) IDENTIFICATION

CLASSIFICATION ACCORDING TO OSHA HAZCOM 2012

Hazard Class Not classified as hazardous

LABEL ELEMENTS ACCORDING TO OSHA HAZCOM 2012

There are no OSHA required label elements for this product.

CLASSIFICATION ACCORDING TO WHMIS (Canada)

Hazard Class Not Classified
WHMIS Hazard Symbols Not Applicable
WHMIS Signal Word Not Applicable

POTENTIAL HEALTH EFFECTS

Eye Contact May cause slight temporary eye irritation. Corneal injury is unlikely. Mist may cause eye irritation.
Skin Contact Repeated contact may cause slight skin irritation.
Inhalation Not expected to be an inhalation hazard. Mist may cause irritation of upper respiratory tract.
Ingestion Not expected to be an ingestion hazard.
Effects of repeated exposure In rare cases, repeated excessive exposure may cause central nervous system effects.



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Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

MIXTURES

Ingredient	CAS No	Wt. %
Propylene Glycol	57-55-6	50
Water	7732-18-5	49
Proprietary Ingredients		<1

Section 4: FIRST- AID MEASURES

DESCRIPTION OF FIRST-AID MEASURE

Eye	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids open. If easy to do, remove contact lenses, if worn. No additional first aid should be necessary, however, if irritation persists, get medical attention.
Skin	As a precaution, wash skin thoroughly with soap and water. Remove and wash contaminated clothing.
Inhalation	Not expected to be an inhalation hazard. If inhaled, remove to fresh air. Get medical advice / attention if feeling unwell.
Ingestion	If swallowed, give milk or water to drink. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

MOST IMPORTANT SYMPTOMS / EFFECTS

Eye	May be slightly irritating to the eyes. Symptoms may include discomfort or pain, excess blinking, and tear production, with possible redness and swelling.
Skin	May be slightly irritating to the skin. Symptoms may include redness, drying, and cracking of the skin.
Inhalation	Not expected to be an inhalation hazard under normal conditions of use.
Ingestion	Not expected to be an ingestion hazard under normal conditions of use. High doses may cause central nervous system depression.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT

Note to Physicians	Treat symptomatically.
Specific Treatments	In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).



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Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY

Flammability Non-flammable by OSHA/WHMIS criteria

EXTINGUISHING MEDIA

Suitable Extinguishing Media Water spray, alcohol-resistant foam, carbon dioxide, dry chemical.

Unsuitable Extinguishing Media Do not use solid water stream.

SPECIAL HAZARDS

Products of Combustion May include and are not limited to: oxides of carbon.

Explosion Data Data not available. Not considered to be an explosion hazard.

Unusual Fire Hazards Heat from fire can generate flammable vapor.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Keep upwind of fire. Wear full fire-fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA)

Section 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

METHODS AND MAERIALS FOR CONTAINMENT AND CLEANUP

Methods for Containment Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Use appropriate Personal Protective Equipment (PPE).

Methods for cleanup Scoop up material and place in a disposal container.

Section 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

Handling Avoid contact with skin and eyes. Avoid breathing mists and vapors when spraying.

General Hygiene Advice Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

PRECAUTIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage Store in tightly sealed original UV resistant containers, away from direct heat and strong oxidizing agents. Product should not be stored in clear or semi-transparent containers.

Temperature Storage Limits Minimum -30°C (-20°F)
Maximum 50°C (122°F)

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS

Ingredient	OSHA PEL	ACGIH-TLV
None Listed	----	----



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EXPOSURE CONTROLS

Engineering Controls No special ventilation is necessary.

INDIVIDUAL PROTECTIVE MEASURES/PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment

Eye/Face Protection

Safety glasses or goggles are recommended if splashing / spraying is possible.

Skin Protection/Hand Protection

No special skin protection is usually necessary. Chemical resistant gloves should be worn if prolonged exposure is possible to prevent drying of skin.

Respiratory Protection

No special respiratory protection is usually necessary. Breathing of mist/aerosol should be avoided. If operating conditions create high airborne concentrations of this material, the use of an approved respirator is recommended.

General Health and Safety Measures

Do not eat, smoke or drink where material is handled, processed, or stored. Wash hands carefully before eating or smoking. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Semi-transparent, green, liquid
Color	Green
Odor	None
Odor Threshold	Not available
Physical State	Liquid
pH (20°C)	6.4 – 7.4
Melting Point / Freezing Point	-37°C (-34°F)
Initial Boiling Point and Boiling Range	~105°C (220°F)
Flash Point	>100°C (212°F)
Evaporation Rate	Not available
Flammability	Not available
Lower Flammability/Explosive Limit	Not available
Upper Flammability / Explosive Limit	Not available
Vapor Pressure (20°C)	~15mm Hg
Vapor Density	No Data Available
Relative Density/Specific Gravity (20°C)	1.038
Solubility	Miscible in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition Temperature	>400°C (750°F)
Decomposition Temperature	Not available
Viscosity (20°C)(Brookfield, Spindle LV-1,0.3rpm)	4,050 – 16,200 cP
Oxidizing Properties	Not available
Explosive Properties	Not available



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Section 10: STABILITY AND REACTIVITY

REACTIVITY

No dangerous reactions known under conditions of normal use.

CHEMICAL STABILITY

Stable under normal storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS

No dangerous reaction known under conditions of normal use.

CONDITIONS TO AVOID

High temperatures, contact with incompatible materials.

INCOMPATIBLE MATERIALS

Strong Oxidizers. Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

May include, and are not limited to: oxides of carbon.

Section 11: TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Likely Routes of Exposure Skin contact, eye contact, inhalation, and ingestion.

Symptoms related to physical/chemical/toxicological characteristics

Eye	May cause eye irritation. Symptoms may include discomfort or pain, excess blinking, and tear production, with possible redness and swelling.
Skin	May cause skin irritation. Symptoms of prolonged contact may include redness, drying and cracking of the skin.
Ingestion	Not expected to be an ingestion hazard. Ingestion of large doses may cause central nervous system depression.
Inhalation	Not expected to be an inhalation hazard under normal conditions of use.

Acute Toxicity LD50 rat-oral: >22 g/kg

DELAYED, IMMEDIATE EFFECTS AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

Skin Corrosion / Irritation	Based on available data, the classification criteria are not met.
Serious Eye Damage/Irritation	Based on available data, the classification criteria are not met.
Respiratory Sensitization	Based on available data, the classification criteria are not met.
Skin Sensitization	Based on available data, the classification criteria are not met.
STOT-Single Exposure	Based on available data, the classification criteria are not met.
STOT-Repeated Exposure	Based on available data, the classification criteria are not met.
Germ Cell Mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	This product does not contain any ingredients that are considered to be carcinogens by IARC, NTP or OSHA.
Reproductive Toxicity	Based on available data, the classification criteria are not met.
STOT-Single Exposure	Based on available data, the classification criteria are not met.
STOT-Repeated Exposure	Based on available data, the classification criteria are not met.
Aspiration Hazard	Based on available data, the classification criteria are not met.



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Section 12: ECOLOGICAL INFORMATION

ECOTOXICITY (AQUATIC AND TERRESTRIAL)

Acute/Chronic Toxicity	Not expected to cause long-term adverse effects in the aquatic environment.	
LC50	Pimephales promelas	707 mg/L
LC50	Daphnia magna	>1,000 mg/L

PERSISTENCE AND DEGRADABILITY

Readily biodegradable.

COD	0.82 g O ₂ /g deicer
BOD ₅ (20°C)	0.4 g O ₂ /g deicer
5 day BOD/COD:	0.49

BIOACCUMULATIVE POTENTIAL

Bioaccumulation is not expected.

MOBILITY IN SOIL

Not available.

OTHER ADVERSE EFFECTS

Not available.

Section 13: DISPOSAL CONSIDERATIONS

WASTE TREATMENT AND METHODS OF DISPOSAL

Based on available information this product is neither listed as a hazardous waste nor does it exhibit any characteristics that would cause it to be classified as a RCRA hazardous waste. If product should spill or be otherwise unsuitable for normal deicing applications, it may be absorbed onto suitable materials and disposed of in a sanitary landfill unless local, state or provincial regulations prohibit such disposal.

Section 14: TRANSPORT INFORMATION

TRANSPORT INFORMATION

Not regulated as dangerous goods per US DOT or IATA.

Section 15: REGULATORY INFORMATION

INVENTORY LISTS

All of the components in this product are on the following inventory lists: USA (TSCA), Canada (DSL/NDL), Europe (EINECS)

TSCA SECTION 12(b)

None of the chemicals in this product are listed under TSCA Section 12 (b)

CERCLA HAZARDOUS SUBSTANCES

There is no CERCLA Reportable Quantity for this material



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SARA 311/312 Categories

Immediate (Acute) Health Hazard	No
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactivity Hazard	No

SARA 313

None of the components in this product are subject to reporting under SARA Section 313.

CLEAN WATER ACT

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

STATE RIGHT-TO-KNOW

This product does not contain components at levels which are required to be reported under the statutes of the following states: MA

This product contains the following chemicals regulated by New Jersey's Worker and Community Right to Know Act:

Component	CAS Number	Amount
Propylene Glycol	57-55-6	50%

This product contains the following chemicals regulated by Pennsylvania Right to Know Act:

Component	CAS Number	Amount
Propylene Glycol	57-55-6	50%

This product may contain the following materials known to the State of California (Proposition 65) to cause cancer, birth defects, or other reproductive harm:

Component	CAS Number	Amount
Ethylene Oxide	75-21-8	< 0.003 ppm



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NFPA - National Fire Protection Association	
Health:	0
Fire:	1
Reactivity:	0
Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme	
HMIS - Hazardous Materials Identification System	
Health:	0
Fire:	1
Physical Hazard:	0
Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme (* = chronic hazard)	

Section 16: OTHER INFORMATION

SDS REVISION DATE August 16, 2017

EXPIRATION DATE August 16, 2020

Latest version of this SDS can be obtained from Cryotech.

NOTICE TO EMPLOYER

This Safety Data Sheet contains environmental, health, and toxicology information for your employees. Please ensure this information is provided to them. It also contains information to help you meet community right-to-know/emergency response reporting requirements under SARA Title III and many other laws. If you resell this product, this SDS must be given to the buyer or the information incorporated in your SDS. Discard any previous edition of this SDS.

DISCLAIMER

The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use or misuse are beyond our control, GENERAL ATOMICS INTERNATIONAL SERVICES CORPORATION dba Cryotech Deicing Technology makes no warranty, either express or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. GENERAL ATOMICS INTERNATIONAL SERVICES CORPORATION dba Cryotech Deicing Technology assumes no responsibility for any injury or loss resulting from the use of the product described herein. User should satisfy himself that he has all current data relevant to his particular use.

End of Safety Data Sheet