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

OTHER MEANS OF IDENTIFICATION

RECOMMENDED USE OF THE CHEMICAL AND RESTRICTIONS ON USE
Deicing/Anti-icing aircraft

RESPONSIBLE PARTY INFORMATION

Name/Address	Cryotech Deicing Technology 6103 Orthoway Fort Madison, IA 52627 United States
Contact information	Telephone: (800) 346-7237 Email: deicers@cryotech.com Website: www.cryotech.com

EMERGENCY PHONE NUMBER
CHEMTREC: (800) 424-9300
Outside USA and Canada: (703) 741-5970

SECTION 2 – HAZARD IDENTIFICATION

HAZARD INFORMATION ACCORDING TO OSHA HAZCOM 2024

Hazard classification	Not classified as hazardous
Signal word	N/A
Hazard statement(s)	N/A
Hazard symbol(s)	No pictogram
Precautionary statement(s)	Not required
Hazards not otherwise classified	None

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

MIXTURES

Chemical Name	Common name and synonyms	CAS number	%(wt.)
Propane-1,2-diol	Propylene glycol	57-55-6	50
Water		7732-18-5	49
Trade secret/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 eyes 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, ACUTE AND DELAYED

May cause temporary minor eye or skin irritation. Inhalation of mist during handling may cause minor respiratory tract irritation and coughing.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

If you feel unwell, seek medical advice. Treat symptomatically.

SECTION 5 – FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA

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

UNSUITABLE EXTINGUISHING MEDIA

Not applicable

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL

Heat from fire can generate flammable vapor. Vapor is heavier than air and may spread along floors. Pressure buildup in sealed containers in high heat conditions may cause container to rupture.
Products of combustion: oxides of carbon

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS

Wear protective equipment suitable for the surrounding environment.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES

Avoid eye/skin contact with spilled material. Wear appropriate personal protective equipment (refer to Section 8 of this SDS).

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

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

Scoop up material and place in a disposable container.

SECTION 7 – HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

Avoid eye/skin contact. Avoid breathing of mists and vapors. Wear appropriate personal protective equipment (refer to Section 8 of this SDS). Wash hands thoroughly after use. Change contaminated clothing.

PRECAUTIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

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

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

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

US OSHA PERMISSIBLE EXPOSURE LIMIT (PEL)

No specific limits established.

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS THRESHOLD LIMIT VALUE (TLV)

No TLV established.

AMERICAN INDUSTRIAL HYGIENE ASSOCIATION (AIHA)

Workplace Environmental Exposure Level (WEEL) for Propane-1,2-diol (CAS: 57-55-6): 8-hr Time-weighted Average (TWA): 10 mg/m^3

APPROPRIATE ENGINEERING CONTROLS

Have eyewash stations available. Ensure adequate ventilation if handling in confined areas.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: Safety glasses or goggles are recommended if splashing/spraying is possible.

Skin/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.

Always use good personal hygiene habits when using this product, such as avoiding touching the face, and thoroughly and regularly washing hands.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Semi-transparent liquid
Color	Green
Odor	Odorless (Odor threshold not available)
Melting point/freezing point	-34°F(-37°C)
Boiling point	~220°F (105°C)
Flammability	Not flammable
Explosive limits (lower and upper)	Data not available
Flash point	> 212°F (100°C) based on propylene glycol
Auto-ignition temperature	> 750°F (400°C) based on propylene glycol
Decomposition temperature	Data not available
pH	6.4 – 7.4
Kinematic viscosity	4,050 – 16,200 cP at 20°C
Solubility	Completely miscible in water
Partition coefficient n-octanol/water	Data not available
Vapor pressure	~15 mm Hg
Relative density	1.038
Relative vapor density	Data not available
Particle characteristics	Not applicable

SECTION 10 – STABILITY AND REACTIVITY

REACTIVITY
This product is expected to be non-reactive under normal conditions of use, storage, and transport.

CHEMICAL STABILITY
Stable under normal storage conditions. Polymerization will not occur.

POSSIBILITY OF HAZARDOUS REACTIONS, INCLUDING THOSE ASSOCIATED WITH FORESEEABLE EMERGENCIES
No dangerous reactions known under conditions of normal use.

CONDITIONS TO AVOID
Avoid prolonged exposure to temperatures over the boiling point of water. When water has evaporated, remaining material is combustible.

INCOMPATIBLE MATERIALS
Strong oxidizing agents; strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS
May decompose into oxides of carbon (e.g., CO, CO_2).

SECTION 11 – TOXICOLOGICAL INFORMATION

INFORMATION ON LIKELY ROUTES OF EXPOSURE

Ingestion is unlikely during normal operations. Inhalation of material is most likely when in confined areas or during spraying operations. Skin contact may occur from spraying operations. Eye contact is possible from touching eyes with contaminated hands.

SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL, AND TOXICOLOGICAL CHARACTERISTICS

Corneal injury is unlikely. Inhalation of material during handling may cause temporary respiratory tract irritation and coughing. Unlikely to cause significant skin irritation. Not expected to cause significant health effects by accidental ingestion.

DELAYED AND IMMEDIATE EFFECTS AND CHRONIC EFFECTS FROM SHORT- AND LONG-TERM EXPOSURE

This product is not expected to produce serious delayed or chronic effects from short- or long-term exposure.

NUMERICAL MEASURES OF TOXICITY

LD50 rat-oral: > 15 g/kg (estimated from studies of components)

INTERACTIVE EFFECTS

None known.

CARCINOGENIC INFORMATION

No component in this product is listed in the National Toxicology Program (NTP) Report on Carcinogens or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs or by OSHA.

SECTION 12 – ECOLOGICAL INFORMATION

ECOTOXICITY

Not expected to cause long-term adverse effects in the aquatic or terrestrial environments.

LC50	Pimephales promelas	707mg/L
LC50	Daphnia magna	>1,000 mg/L

PERSISTENCE AND DEGRADABILITY

Readily biodegradable.

COD:	0.82 g O2/g deicer
BOD_5 (20°C):	0.4 g O2/g deicer
5 day BOD/COD:	0.49

BIOACCUMULATIVE POTENTIAL

Data not available

MOBILITY IN SOIL

Data not available

OTHER ADVERSE EFFECTS

None expected.

SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE RESIDUES AND INFORMATION ON SAFE HANDLING AND METHODS OF DISPOSAL

Based on available information, this product is neither listed as a hazardous waste nor does it exhibit any of the characteristics that would cause it to be classified as a characterized hazardous waste under the US Resource Conservation and Recovery Act (RCRA). If product should spill or be otherwise unsuitable for normal deicing operations, dispose of contents/container in accordance with local, state, regional, national, and/or international regulations.

SECTION 14 – TRANSPORT INFORMATION

UN number	Not applicable. This material is not regulated as dangerous per US DOT or IATA/ICAO.
UN proper shipping name	Not applicable
Transport hazard class(es)	Not applicable
Packing group	Not applicable
Environmental hazards	Not applicable. This material is not a Marine pollutant.
Transport in bulk	Consult IMO regulations before transporting ocean bulk.
Special precautions	Not applicable

SECTION 15 – REGULATORY INFORMATION

INVENTORY LISTS

All of the components in this product are on the following inventory lists: US (TSCA), Canada (DSL/NDSL), Europe (EINECS); or not required to be listed.

TSCA SECTION 12(B)

None of the chemicals in this product are listed under US EPA Toxic Substances Control Act (TSCA) Section 12(b).

CERCLA HAZARDOUS SUBSTANCES

This material, as supplied, does not contain any chemicals regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302). There is no CERCLA Reportable Quantity for this material. There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT (EPCRA) SECTION 313

None of the chemicals in the product are subject to reporting under the US EPA Toxics Release Inventory (TRI) program.

HAZARD CATEGORIES FOR EPCRA 311 / 312

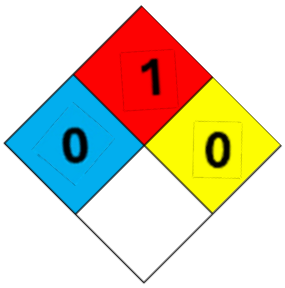
Health hazard	
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Aspiration hazard	No
Reproductive toxicity	No
Germ cell mutagenicity	No
Skin corrosion or irritation	No
Respiratory or skin sensitization	No
Serious eye damage or eye irritation	No
Specific organ toxicity (single or repeated exposure)	No
Simple asphyxiant	No
Hazard not otherwise classified (HNOC)	No

Physical hazard	
Flammable (gases, aerosols, liquids or solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (liquid or solid)	No
Pyrophoric gas	No
Oxidizer (liquid, solid or gas)	No
Organic peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible dust	No
Corrosive to metal	No
Hazard not otherwise classified (HNOC)	No

CLEAN WATER ACT

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

NFPA 704



SECTION 16 – OTHER INFORMATION

SDS REVISION DATE

This SDS was revised on **August 1, 2024**.
The latest version can be obtained by contacting Cryotech Deicing Technology.

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