

# Kilfrost ABC-S Plus

## MATERIAL SAFETY DATA SHEET



### 1. PRODUCT NAME & DESCRIPTION

**Kilfrost ABC-S Plus**  
Aircraft De-/anti-icing fluid, Type IV  
Complies with Specification AMS 1428

**MANUFACTURED AND SUPPLIED IN THE USA BY**  
Cryotech Deicing Technology  
6103 Orthoway  
Fort Madison, IA 52627  
United States

**Cryotech Contact Information**  
Telephone: (800)346-7237  
FAX: (319)372-2662  
email: [deicers@cryotech.com](mailto:deicers@cryotech.com)  
website: <http://www.cryotech.com>

**MANUFACTURED AND SUPPLIED IN EUROPE BY**  
Kilfrost Limited  
Albion Works, HALTWHISTLE  
Northumberland, NE49 0HJ  
ENGLAND

**Kilfrost Contact Numbers (direct dial from USA)**  
Working hours: (011)(44)1434 320 332  
Other Times: (011)(44)1228 573 614  
FAX: (011)(44)1434 321 463  
email: [info@kilfrost.co.uk](mailto:info@kilfrost.co.uk)

### 2. CHEMICAL COMPOSITION

Aqueous monopropylene glycol mixture.  
Contains a minimum of 50% monopropylene glycol (CAS 57-55-6)

### 3. HAZARD IDENTIFICATION

**RESPIRATORY/INHALATION:** Considered to be non-hazardous.

**SKIN IRRITATION:** Unlikely to cause irritation.

**EYE CONTACT:** May cause temporary irritation.

**INGESTION:** Considered to be non-hazardous.

**OCCUPATIONAL EXPOSURE LIMITS:**

An exposure limit has been set for Monopropylene Glycol (synonym Propane-1,2-diol). This applies to the UK only.  
UK (EH 40) WEL

Total (vapor & Particulates)	150 ppm (470 mg/m <sup>3</sup> )(8hr TWA)
Particulates	- ppm ( 10 mg/m <sup>3</sup> )(8hr TWA)
ACGIH	TLV - TWA No limit assigned.
FRANCE	VME No limit assigned.
GERMANY	MAK No limit assigned.

### 4. FIRST AID MEASURES

Chemical Emergency: Spill, leak, fire, or accident call  
Chemtrec day or night (800)424-9300;  
Outside continental USA call (703)527-3887

**EYE CONTACT:** Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. No additional first aid should be necessary. However, if irritation persists, see a doctor.

**SKIN CONTACT:** Wash off in flowing water. Launder contaminated clothing before re-use.

**INHALATION:** Remove to fresh air if feeling unwell. Consult medical personnel if symptoms persist.

**INGESTION:** Give large quantities of water to drink. Consult medical personnel.

### 5. FIRE FIGHTING MEASURES

**FLASH POINT (close cup):** None below boiling point.

**AUTO IGNITION:** 446°C

**EXPOSURE LIMITS:** No data.

**EXTINGUISHING MEDIA:** Water, foam, Carbon Dioxide, dry powder.

**FIRE FIGHTING PROCEDURES:** None

**HAZARDOUS DECOMPOSITION PRODUCTS:** Incomplete combustion may produce Carbon Monoxide and other harmful gases/vapors.

**UNUSUAL FIRE HAZARDS:** The product may become combustible after prolonged heating at the boiling point.

**NFPA RATINGS:**

**Health 0; Flammability 1; Reactivity 0; Special NDA:**

(Least - 0, Slight - 1, Moderate - 2, High - 3, Extreme - 4)

These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint Coating Association.

### 6. ACCIDENTAL RELEASE MEASURES

Chemical Emergency: Spill, leak, fire, or accident call

Chemtrec day or night (800)424-9300;

Outside continental USA call (703)527-3887

**SPILL/LEAK PRECAUTIONS:**

Contain spillage and absorb on suitable material e.g. sawdust, sand or earth. Transfer to a container for disposal. See section 13.  
Wash the spillage area with plenty of water.

### 7. HANDLING AND STORAGE

**STORAGE:** Store in tightly sealed original containers, away from direct heat and strong oxidizing agents.

**SPECIAL PRECAUTIONS:** Avoid contact with skin and eyes. Avoid breathing mists/vapors when spraying.

Do not use uncoated mild steel tanks. For advice on bulk and/or heated storage contact Cryotech.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**EYE PROTECTION:** Wear eye protection if splashing is possible. An eye wash bottle should be available.

**SKIN PROTECTION:** Gloves and protective overalls recommended if prolonged contact is likely.

**VENTILATION:** Maintain sufficient ventilation to comply with 'Occupational Exposure Standard'.

### 9. PHYSICAL AND CHEMICAL PROPERTIES (typical values)

**APPEARANCE:** Clear, almost colorless or green fluid

**ODOR:** None

**pH (20°C):** 7

**BOILING POINT:** 104°C

**FLAMMABILITY DATA:** See Section 5

**VAPOR PRESSURE (20°C):** 15 mm Hg

**SPECIFIC GRAVITY (20°C):** 1.038

**VAPOR DENSITY (AIR = 1):** 1.0 (estimated)

**FREEZING POINT:**

100%	-37°C
75% v/v	-22°C
50% v/v	-11°C

**BROOKFIELD LVT VISCOSITY (Spindle No. 1 or 2; 0.3rpm):**

20°C	25,000 mPas
-25°C	10,000 mPas

**SPECIFIC HEAT:**

20°C	3.6 J/g/°C
70°C	3.7 J/g/°C

**SOLUBILITY IN WATER:** Completely miscible.

# Kilfrost ABC-S Plus

## MATERIAL SAFETY DATA SHEET

<p><b>10. STABILITY &amp; REACTIVITY</b> Stable under normal storage conditions. Incompatible materials - strong oxidizing agents.</p>	<p><b>15. REGULATORY INFORMATION</b> <b>DOT SHIPPING NAME:</b> Not designated as a hazardous material by the Federal DOT. <b>DOT HAZARD CLASS:</b> Not Applicable <b>DOT IDENTIFICATION NUMBER:</b> Not Applicable <b>SARA 311 CATEGORIES:</b> 1. Immediate (Acute) Health Effects: Yes 2. Delayed (Chronic) Health Effects: No 3. Fire Hazard: No 4. Sudden Release of Pressure Hazard: No 5. Reactivity Hazard: No <b>REGULATORY LISTS SEARCHED:</b> 01 = SARA 313 03 = NTP Carcinogen 05 = MI 406 07 = IARC Group 2A 09 = SARA 302/304 11 = NJ RTK 13 = MN RTK 15 = ACGIH STEL 17 = OSHATWA 20 = EPA Carcinogen 22 = TSCA Sect 5(a)(e)(f) 24 = TSCA Sect 12(b) 26 = TSCA Sect 8(d) 29 = OSHA CEILING 02 = MASS RTK 04 = CA Prop. 65 06 = IARC Group 1 08 = IARC Group 2B 10 = PA RTK 12 = CERCLA 302.4 14 = ACGIH TLV 16 = ACGIH Calculated TLV 18 = OSHA STEL 21 = TSCA Sect 4(e) 23 = TSCA Sect 6 25 = TSCA Sect 8(a) 28 = Canadian WHMIS The ingredient mono-propylene glycol appears on the above regulatory lists 10, 13 and 28. None of the other components of this material are found on the regulatory lists indicated.</p>
<p><b>11. TOXICOLOGICAL INFORMATION</b> Considered to have low oral toxicity. See also section 3 LD<sub>50</sub> rat - oral &gt;2g/Kg (OECD 401 est.) LC<sub>50</sub> freshwater fish 1,725 mg/L (OECD 203, 96h) LC<sub>50</sub> Daphnia 1,350 mg/L (OECD 202, Part 1, 48h) EC<sub>10</sub> bacteria &gt;1,000 mg/L (DIN 38412, Part 341)</p>	<p><b>16. OTHER INFORMATION</b> All components are registered in accordance with EINECS AND TSCA. Revised to comply with renumbering of WGK classes. This Material Safety Data Sheet contains environmental, health and toxicology information for your employees. Please make sure this information is given 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 MSDS must be given to the buyer or the information incorporated in your MSDS. Discard any previous edition of this MSDS. <b>Latest version of this MSDS can be found at <a href="http://www.cryotech.com">http://www.cryotech.com</a></b></p>
<p><b>12. ECOLOGICAL INFORMATION</b> Fully Biodegradable: 99% in 14 days (OECD 301E) COD: 0.69 mg O<sub>2</sub>/Kg fluid (APHA std. methods) BOD: 0.27 mg O<sub>2</sub>/Kg fluid (APHA std. methods) Water Danger Class (WGK): 1</p>	
<p><b>13. DISPOSAL CONSIDERATION</b> Controlled incineration or landfill in accordance with local, state or national regulations.</p>	
<p><b>14. TRANSPORT INFORMATION</b> Not restricted under any transport regulations.</p>	