

# MATERIAL SAFETY DATA SHEET



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*ABC-S Manufactured In  
North America By*



6103 Orthoway  
Fort Madison, Iowa  
52627  
Emergency Number 800-  
346-7237

## Kilfrost ABC-S®

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 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.

**Revision Date: November 1997**

## 1. PRODUCT NAME

**Kilfrost ABC-S®**

### DESCRIPTION

**AIRCRAFT DE-/ANTI-ICING FLUID, TYPE IV. COMPLIES WITH SPECIFICATION  
AMS 1428.**

### EMERGENCY NUMBER

**FORT MADISON, IOWA PLANT (24 hr): 1-800-346-7237**

### SUPPLIED BY

**Cryotech Deicing Technology, 6103 Orthoway, Fort Madison, IA 52627**

## 2. COMPOSITION

2.1 Aqueous monopropylene glycol mixture.

- 2.2 Contains a minimum of 50% monopropylene glycol.  
2.3 None of the ingredients are classed as Dangerous Substances.

### 3. HAZARD IDENTIFICATION

- 3.1 INHALATION: considered to be non-hazardous.  
3.2 SKIN: Unlikely to cause irritation.  
3.3 EYES: May cause temporary irritation.  
3.4 INGESTION: Considered to be non-hazardous.  
3.5 OCCUPATIONAL EXPOSURE LIMITS: An exposure limit has been set for Mono Propylene Glycol (synonym Propane-1, 2-diol). This applies in the UK only.

UK (EH 40) OES	
Total (vapour & 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

- 4.1 INGESTION: Give large quantities of water to drink. Consult medical personnel.  
4.2 SKIN CONTACT: Wash off in flowing water. Launder contaminated clothing before reuse.  
4.3 EYE CONTACT: Irrigate with water for 5 minutes. Obtain medical assistance if irritation persists.  
4.4 INHALATION: Remove to fresh air if feeling unwell. Consult medical personnel if symptoms persist.

### 5. FIRE FIGHTING MEASURES

- 5.1 FLASH POINT: None below boiling point.  
5.2 AUTO IGNITION TEMPERATURE: 446°C  
5.3 EXPLOSION LIMITS: No data.  
5.4 SPECIFIC FIRE FIGHTING PROCEDURES: None.  
5.5 UNUSUAL FIRE HAZARDS: The product may become combustible after prolonged heating at the boiling point.  
5.6 EXTINGUISHING MEDIA: Water, foam, Carbon Dioxide, dry powder.  
5.7 HAZARDOUS DECOMPOSITION PRODUCTS: Incomplete combustion may produce Carbon Monoxide and other harmful gases/vapours.

#### NFPA RATINGS:

Health 1; Flammability 0; 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

6.1 Contain spillage and absorb on suitable material e.g. sawdust, sand, or earth. Transfer to a container for disposal. See section 13.

6.2 Wash the spillage area with plenty of water.

## 7. HANDLING AND STORAGE

7.1 Avoid contact with skin and eyes. Avoid breathing mists/vapours when spraying.

7.2 Store in tightly sealed original containers, away from direct heat and strong oxidising agents.

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

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Maintain sufficient ventilation to comply with "Occupational Exposure Standard".

8.2 Wear eye protection if splashing is possible. An eye wash bottle should be available.

8.3 Gloves and protective overalls recommended if prolonged contact is likely.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE: Clear, almost colourless or green fluid.

9.2 ODOUR: None.

9.3 pH (20°C): 7

9.4 BOILING POINT: 104°C

9.5 FLAMMABILITY DATA: See 5.1-5.3.

9.6 VAPOUR PRESSURE (20°C): 15 mm Hg.

9.7 SPECIFIC GRAVITY (20°C): 1.038

9.8 VAPOUR DENSITY (air = 1): 1.0 (estimated).

9.9 FREEZING POINT:

100% = -37°C

75% v/v = -22°C

50% v/v = -11°C

9.10 BROOKFIELD LVT VISCOSITY (SPINDLE NO.1 OR 2; 0.3 RPM)

20°C = 22,500 mPa.S

-25°C = 12,000 mPa.S

9.11 SPECIFIC HEAT:

20°C = 3.6 J/g/°C

70°C = 3.7 J/g/°C

9.12 SOLUBILITY IN WATER: Completely miscible.

## 10. STABILITY AND REACTIVITY

- 10.1 Stable under normal storage conditions.
- 10.2 Incompatible materials - strong oxidising agents.

## 11. TOXICOLOGICAL INFORMATION

- 11.1 Considered to have low oral toxicity. See also Section 3.
- 11.2 LD50 (rat-oral) = >2 g/Kg (OECD 401)
- 11.3 LC50 (freshwater fish) = 1,414 mg/L (OECD 203, 96h)
- 11.4 LC50 (Daphnia) = 1,131 mg/L (OECD 202, Part 1, 48h)
- 11.5 EC10 (bacteria) = >10,000 mg/L (DIN 38412, Part 8, 16h)

## 12. ECOLOGICAL INFORMATION

- 12.1 FULLY BIODEGRADABLE: 90% in 5 days (OECD 301E)
- 12.2 COD: 835 mg O<sub>2</sub>/g test substance (OECD 301D)
- 12.3 BOD 7: 418 mg O<sub>2</sub>/g test substance (OECD 301D)
- 12.4 Water Danger Class (WGK): 0

## 13. DISPOSAL CONSIDERATION

- 13.1 Controlled incineration or landfill in accordance with local, state, or national regulations.

## 14. TRANSPORT INFORMATION

- 14.1 Not restricted under any transport regulations.

## 15. REGULATORY INFORMATION

- 15.1 Not classified as hazardous under any regulations.

## 16. OTHER INFORMATION

- 16.1 All components are registered in accordance with EINECS and TSCA.

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, **Cryotech Deicing Technology, a division of General Atomics International Services Corporation 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.** 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.

Prepared by Kilfrost Ltd., Albion Works, Haltwhistle, Northumberland, England NE49 0HJ

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