



KILFROST ABC 2000 – DESCRIPTION

• General

Kilfrost ABC 2000 is a SAE/ISO Type II de-/anti-icing fluid that is qualified to AMS 1428 and ISO 11078 (latest revisions). This product was first introduced to the market place in September 2003 and since that time has been used successfully in winter operations in Scandinavia and Switzerland.

ABC 2000 has been designed to meet stringent environmental requirements and does not contain triazole.

• Performance

ABC 2000 offers extended holdover performance compared to conventional Type II fluids; the protection times given in the brand name holdover chart for ABC 2000 are typically well in excess of the generic Type II holdover times and further more, meet the generic Type IV requirements.

• Application

ABC 2000 has similar handling and spraying characteristics to conventional Type II fluids. It can be used as a cold anti-icing fluid against active freezing precipitation or applied hot as a one step de-/anti-icing fluid; in the later case this is normally carried out using a hot dilute fluid mixture.

ABC 2000 may also be used for preventative over night treatment against frost; for early morning flights it has been shown that a 50/50 mix of ABC 2000 can provide in excess of 5 hours protection against active frost in the temperature range -3°C to $+4^{\circ}\text{C}$.

• Important note

Kilfrost ABC 2000 is recommended as the replacement fluid for Kilfrost ABC II PLUS, which is no longer commercially available; for further details do not hesitate to call us.



HEALTH and SAFETY DATA

1.

PRODUCT NAME

Kilfrost ABC 2000

SUPPLIED BY

Kilfrost Limited
Albion Works
HALTWHISTLE
Northumberland
NE49 0HJ
ENGLAND

DESCRIPTION

Aircraft de-/anti-icing fluid, Type II.
Complies with specification AMS 1428.

EMERGENCY NUMBERS

Telephone:
Working Hours: (01434) 320332
Other Times: (01228) 573614
FAX: (01434) 321463
e-mail: info@kilfrost.co.uk

2.

COMPOSITION

2.1

Aqueous monopropylene glycol mixture.

2.2

Contains a minimum of 50% monopropylene glycol.

3.

HAZARD IDENTIFICATION

C₃H₈O₂

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 Monopropylene Glycol (synonym Propane-1,2-diol). This applies in the UK only.

UK (EH 40/99) WEL

Total (vapour & particulates)

150 ppm (474 mg/m³) (8hr TWA)

Particulates

- ppm (10 mg/m³) (8hr TWA)

ACGIH

TLV – TWA

No limit assigned.

FRANCE

VME

No limit assigned.

GERMANY

MAK

No limit assigned.

HEALTH and SAFETY DATA

4. FIRST AID MEASURES

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|-----|--------------|---|
| 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 re-use. |
| 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. |
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5. FIRE FIGHTING MEASURES

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|-----|-----------------------------------|--|
| 5.1 | Flash point (closed cup) | 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. |
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6. ACCIDENTAL RELEASE MEASURES

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|-----|---|
| 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. |
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7. HANDLING AND STORAGE

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|-----|--|
| 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 Kilfrost. |
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HEALTH and SAFETY DATA

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 Maintain sufficient ventilation to comply with 'Workplace Exposure Limit'.
 - 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.
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9. PHYSICAL AND CHEMICAL PROPERTIES Typical Values

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|------|--|------------------------------|
| 9.1 | Appearance | Clear, straw coloured fluid. |
| 9.2 | Odour | None. |
| 9.3 | pH (20°C) | 7.0 |
| 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) | 1.040 |
| 9.8 | Vapour density (air = 1) | 1.0 (estimated) |
| 9.9 | Freezing point | |
| | 100% | -37°C |
| | 75% v/v | -22°C |
| | 50% v/v | -10.5°C |
| 9.10 | Brookfield LVT Viscosity
(Spindle No. 2; 0.3 rpm) | |
| | 20°C | 5,000 mPas |
| 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. |
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10. STABILITY AND REACTIVITY

- 10.1 Stable under normal storage conditions.
 - 10.2 Incompatible materials – strong oxidising agents.
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HEALTH and SAFETY DATA

11. TOXICOLOGICAL INFORMATION

- 11.1 Considered to have low oral toxicity. See also section 3.
- 11.2 LD₅₀ (rat – oral) > 2000 mg/Kg (OECD 401)
- 11.3 EC₅₀ (rainbow trout) >3000 mg/L (OECD 203, 96h)
- 11.4 EC₅₀ (daphnia magna) 12,000 mg/L (OECD 202, 48h)
- 11.5 EC₅₀ (algae) >10,000 mg/L (OECD 201, 72h)
- 11.6 LD₅₀ (bacteria) >10,000 mg/L (OECD 209)
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12. ECOLOGICAL INFORMATION

- 12.1 BOD₅ 360 mg O₂/g test substance (OECD 301D)
- 12.2 COD 833 mg O₂/g test substance (OECD 301D)
- 12.3 Biodegradability Readily biodegradable
- 12.4 Water Danger Class (WGK) 1
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13. DISPOSAL CONSIDERATION

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

- 14.1 Not restricted under any transport regulations.
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15. REGULATORY INFORMATION

- 15.1 Not classified as hazardous under any regulations.
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16. OTHER INFORMATION

- 16.1 All components are registered in accordance with EINECS AND TSCA.
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The information contained herein is based on the present state of our knowledge.
No responsibility is accepted that the information is sufficient or correct in all cases.

Date: 6 December 2004
(revalidated 1 August 2006)