



MATERIAL SAFETY DATA SHEET

1. PRODUCT NAME Kilfrost DF PLUS (88) SUPPLIED IN THE USA BY: Kilfrost Incorporated 6250 Coral Ridge Drive Suite 130 Coral Springs, Florida 33076, USA SUPPLIED IN EUROPE BY: Kilfrost Limited Albion Works HALTWHISTLE Northumberland NE49 0HJ ENGLAND	DESCRIPTION Aircraft de-icing fluid, Type I. Complies with specifications ISO 11075 and AMS 1424. CONTACT NUMBERS Working Hours: 954 282 5050 Emergency: 954 558 7268 Alt emergency: 954 756 5645 FAX: 954 282 5049 Email: infoamericas@kilfrost.com CONTACT NUMBERS Working Hours: (01144 1434) 320332 Other Times: (01144 1228) 573614 FAX: (01144 1434) 321463 Email: info@kilfost.com
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2. COMPOSITION

- 2.1 Aqueous monopropylene glycol mixture.
- 2.2 Contains a minimum of 88% monopropylene glycol.

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 Monopropylene Glycol (synonym Propane-1,2-diol). This applies in the UK only.
UK (EH 40) OES	
Total (vapour & particulates)	150 ppm (470 mg/m ³) (8hr TWA)
Particulates	- ppm (10 mg/m ³) (8hr TWA)
ACGIH TLV – TWA	No limit assigned.
FRANCE VME	No limit assigned.
GERMANY MAK	No limit assigned.

MATERIAL SAFETY DATA SHEET

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 | Move to fresh air if feeling ill. 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

**For Chemical Emergency
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night**

**Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)**

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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. |
| 7.2 | Avoid breathing mists/vapours when spraying. |

MATERIAL SAFETY DATA SHEET

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

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.
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9. PHYSICAL AND CHEMICAL PROPERTIES Typical Values

9.1	Appearance	Clear, orange fluid.
9.2	Odour	None.
9.3	pH (20°C)	8.0 – 9.0
9.4	Boiling point	117°C
9.5	Flammability data	See 5.1 – 5.3
9.6	Vapour pressure (20°C)	10 mm Hg
9.7	Specific gravity (20°C)	1.043
9.8	Vapour density (air = 1)	1.6 (estimated)
9.9	Freezing point	
	100%	below -60°C
	50% v/v	-25.3°C
9.10	Viscosity	
	20°C	38 mPas
	0°C	79 mPas
	-20°C	290 mPas
9.11	Specific heat	
	20°C	2.9 J/g°C
	70°C	3.2 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.
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11. TOXICOLOGICAL INFORMATION

- 11.1 Considered to have low oral toxicity. See also section 3.
11.2 LD₅₀ (rat – oral) > 10g/Kg (est)

MATERIAL SAFETY DATA SHEET

11.3	LC ₅₀	(Pimephales Promelas)	5,475 mg/L	(96h)
11.4	LC ₅₀	(Daphnia Magnia)	10,000 mg/L	(48h)

12. ECOLOGICAL INFORMATION

12.1	COD	0.11 Kg O ₂ /Kg fluid
12.2	BOD ₅	0.08 Kg O ₂ /Kg fluid
12.3	5 day BOD/COD	0.73

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.
 - 16.2 All components are preregistered in accordance with REACH.
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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: May 18, 2010

Kilfrost Limited. Registered in England No. 297731.
Registered office: Time Central, 32 Gallowgate, Newcastle-upon-Tyne NE1 4SN
