



HEALTH and SAFETY DATA

1. PRODUCT NAME

Kilfrost TKS 80

DESCRIPTION

Fluid for TKS in-flight de-icing system.

General purpose freezing point depressant.

SUPPLIED BY

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Albion Works
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ENGLAND

EMERGENCY NUMBERS

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2. COMPOSITION

- 2.1 Aqueous mono ethylene glycol solution.
- 2.2 Contains 80% mono ethylene glycol (Harmful; R22; S2,24/25).

3. HAZARD IDENTIFICATION

- 3.1 Inhalation Not normally a hazard due to relatively low vapour pressure.
- 3.2 Skin May be slightly irritant. Small amounts may be absorbed through skin.
- 3.3 Eyes May be slightly irritant.
- 3.4 Ingestion Swallowing may lead to kidney damage. Symptoms similar to alcoholic intoxication may occur.
- 3.5 Occupational Exposure Limits Exposure limit has been set for Mono Ethylene Glycol. (Synonyms Ethane-1, 2-diol)

UK (EH 40/2002) OES
Particulate
Vapour
ACGIH TLV
GERMANY MAK

- ppm (10 mg/m³ (8 hr TWA)
- ppm (52 mg/m³ (8hr TWA); - ppm (104 mg/m³) STEL
50 ppm (125 mg/m³) (Ceiling)
- ppm (26 mg/m³)

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4. FIRST AID MEASURES

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| 4.1 | Ingestion | DO NOT INDUCE VOMITING. Give large quantities of water to drink. Obtain medical attention. |
| 4.2 | Skin contact | Wash off with soap and water or shower. Launder contaminated clothing before re-use. |
| 4.3 | Eye contact | Irrigate with water for 15 minutes. Obtain medical assistance if irritation persists. |
| 4.4 | Inhalation | Remove to fresh air if irritation occurs. Consult medical personnel if symptoms of distress persist. |
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5. FIRE FIGHTING MEASURES

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| 5.1 | Flash point (closed cup) | No flash below boiling point of approx. 123°C. |
| 5.2 | Auto ignition temperature | 410°C. |
| 5.3 | Explosion limits | No data. |
| 5.4 | Specific fire-fighting procedures | None. |
| 5.5 | Unusual fire hazards | May become combustible after prolonged heating at boiling point. |
| 5.6 | Extinguishing media | Water fog, alcohol resistant foam, dry chemical, CO ₂ . |
| 5.7 | Hazardous decomposition products | Incomplete combustion may produce Carbon Monoxide. |
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6. ACCIDENTAL RELEASE MEASURES

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| 6.1 | Prevent entry into drains and watercourses. Inform authorities if any does enter. |
| 6.2 | Contain spillage & absorb on suitable material e.g. sawdust, sand or earth. Transfer to a container for disposal. See section 13. |
| 6.3 | Wash the spillage area with water. |
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7. HANDLING AND STORAGE

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| 7.1 | Avoid contact with skin & eyes. Do not breathe mists/vapours. |
| 7.2 | Store in tightly sealed original containers away from heat & oxidising agents. |
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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 Maintain sufficient ventilation to comply with 'Occupational Exposure Standards'.
- 8.2 Avoid the formation of mists and aerosols.
- 8.3 When handling for any length of time wear goggles & chemical resistant gloves. If there is a possibility of body contact, a rubber or PVC apron should be worn.
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9. PHYSICAL AND CHEMICAL PROPERTIES **Typical Values**

9.1	Appearance	Clear, colourless liquid.
9.2	Odour	Slight.
9.3	pH (20°C)	6.0 – 7.0
9.4	Boiling range(760 mmHg)	123°C
9.5	Flammability data	See 5.1 – 5.3
9.6	Vapour pressure (20°C)	7 mmHg
9.7	Specific gravity (20°C)	1.101
9.8	Freezing point	-50°C (approx)
	(100%)	below -60°C
	(75%)	
	(50%)	-26°C
	(25%)	-9°C
9.9	Pour point (100%)	approx. -70°C
9.10	Viscosity (20°C)	9 mm ² /s
9.11	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 Not a hazard in normal use but swallowing may lead to kidney damage. See also section 3.
- 11.2 Estimated human lethal dose is 1.75/ml/Kg body weight.
- 11.3 Oral intake of Mono Ethylene Glycol has caused teratogenic effects in laboratory animals. The relevance of this to humans has not been established.
- 11.4 LD₅₀ (rat – oral) 7g/Kg (calculated).
- 11.5 LC₅₀ (fish, fathead minnow) 64,000 mg/L (calculated).
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12. ECOLOGICAL INFORMATION

- 12.1 Readily biodegradable by naturally occurring micro organisms.
- 12.2 Biological Oxygen Demand (BOD₂₀) is 89% of the Theoretical Oxygen Demand (Th.O.D).
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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 EEC classification for supply Harmful.
- 15.2 Hazard symbol St Andrew's Cross.
- 15.3 Risk phrase R22: Harmful if swallowed.
- 15.4 Safety phrases S2: Keep out of reach of children.
S24/25: Avoid contact with skin & eyes.*
**Additional recommended safety advice.*
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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: 11 February 2005