

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY

1.1	Product Identification	Low Freeze Additive
1.2	Use	Additive to water based fire extinguishers
1.3	Supplier	Chubb Fire Limited Chubb House Sunbury on Thames Middlesex TW16 7AR United Kingdom Tel: +44 (0)1932 785588 Fax: +44 (0)1932 765630

2. COMPOSITION

Monoethylene glycol, CAS No 107-21-1

3. HAZARDS IDENTIFICATION

Can enter the body by inhalation or ingestion.
Irritates eyes and skin.
Affects the nervous system.
Can cause liver, kidney and brain damage.

4. FIRST AID MEASURES

<u>Inhalation:</u>	at room temperature, exposure to vapour is unlikely. At high temperature, ventilation and suitable respiratory protection should be employed.
<u>Skin contact:</u>	immediately wash with plenty of water, use soap if available. Remove contaminated clothing. Request medical aid if symptoms persist.
<u>Eye contact:</u>	irrigate eye thoroughly with water for at least 10 minutes, holding eyelids apart if necessary. Obtain medical attention.
<u>Ingestion:</u>	wash out mouth with water and give ½ pint warm water to drink. Do not induce vomiting. Obtain medical attention urgently.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: alcohol resistant foam, or water fog. Carbon dioxide and dry powder also suitable for small fires.

Extinguishing media that must not be used: do not use water jets.

Special exposure hazards: decomposes on heating to give toxic fumes of carbon monoxide, carbon dioxide and smoke.

Special protective equipment for fire fighters: self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: wear gloves, mask, goggles and full protective clothing. Ventilate area if possible.
Environmental precautions: contain with sand or earth and transfer to suitable container for correct disposal.
Do not allow to enter water courses or drains.
Methods of cleaning up: absorb onto earth or proprietary materials. Remove and wash site of spillage with water.

7. HANDLING AND STORAGE

Precautions for safe handling: ensure adequate ventilation at high temperatures. Wear appropriate clothing.
Safety showers and eyebaths should be available.
Conditions for safe storage: store away from oxidising agents and acids in 'no smoking' zone between 5°C to 60°C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection: wear suitable respirator or breathing equipment if accidental spill occurs.
Hand protection: wear suitable impervious gloves.
Eye protection: wear chemical goggles. Provide eyebaths.
Skin protection: wear cotton overalls, headgear and rubber boots. Showers should be provided.
Exposure limits:
Long term exposure limit (8 hour TWA): 60mg/cum
Short term exposure limit (10 minutes): 125mg/cum

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	colourless liquid, slightly viscous
Odour:	odourless
pH:	N/A
Boiling point/boiling range:	197°C
Melting point/ melting range:	-13°C
Flash point:	116°C pmcc
Flammability (solid, gas):	flammable
Autoflammability:	auto ignition 413°C
Explosive properties:	reacts violently with oxidising agents
Oxidising properties:	none known
Vapour pressure:	0.091mmHg
Relative density:	1.116
Solubility: water solubility, fat solubility:	100%
Partition coefficient: n-octanol/water:	LOG = -1.93

10. STABILITY AND REACTIVITY

Stability of the substance: decomposes with heat to give oxides of carbon.
Conditions to avoid: storing at high temperatures or close to oxidising agents or acids. Flammable.
Materials to avoid: oxidising agents, oleum, sulphuric acid, and chlorosulphuric acid.
Hazardous decomposition products: oxides of carbon: toxic carbon monoxide and carbon dioxide

11. TOXICOLOGICAL INFORMATION

LC50 Fathead minnow	51,000 mg/L
LC50 Daphnia magna	46,300 mg/L
LD50 rat	6,000 – 13,000 mg/kg
Estimated lethal dose for an average person	100ml

12. ECOLOGICAL INFORMATION

Mobility: penetration and contamination of groundwater possible.
Degradability: high. BOD 20 is 89% to 100% of theoretical oxygen demand.
Accumulation: no appreciable biomagnification is expected in the environment.
Short and long term effects on ecotoxicity. Toxicity – very low to fish. Effects minor.
Other adverse effects: practically non-toxic to aquatic invertebrates on a static acute basis.

13. DISPOSAL CONSIDERATIONS

Treat as for spillages – see accidental release measures. Transfer any waste to suitable containers for subsequent disposal. Do not release to watercourses or drains.

14. TRANSPORT INFORMATION

Not classified in ADR/RID ADNR or IMDG but is listed in SI 1993/1746 the Chemicals (Hazard Information and Packaging) Regulations.

15. REGULATORY INFORMATION

Chemicals (Hazard Information and Packaging for Supply) Regulations 1994 (SI No 3247) (CHIP 2)
Supply: harmful
Conveyance: not classified in Part 1A2 of the CPL
Phrases: harmful if swallowed
keep out of reach of children

The information contained within this manufacturers safety data sheet does not constitute the users own assessment of workplace risk as required by other Health and Safety legislation.

16. OTHER INFORMATION

Training advice: Chubb Fire offer a range of courses to assist users.
Recommended uses and restrictions: do not exceed the amount recommended for low freeze use.
Further information:
Sources of key data used to compile data sheet: suppliers MSDS