



## EEC – SAFETY DATA SHEET

Acc. 91/155/EEC

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<b>1. Identification of compound/preparation, and company</b>	
<b>Trade name:</b>	TYFOCOR <sup>®</sup> LS ready to use solution, frost protection –28 °C
<b>Distributor:</b>	Environmental Process Systems Limited, Unit 32, Mere View Industrial Estate, Yaxley, Cambridgeshire, UK, PE7 3HS Tel: +44 (0)1733 243400 Fax: +44 (0)1733 243344 e-mail: info@epsLtd.co.uk
<b>Producer:</b>	Tyforop Chemie GmbH, Hamburg, Germany
<b>2. Composition/Information on ingredients</b>	
<b>Chemical characterisation:</b>	Aqueous solution of propan-1,2-diol with corrosion inhibitors CAS No: 57-55-6
<b>3. Possible dangers</b>	
None anticipated	
<b>4. First aid measures</b>	
<b>Contact with eyes</b>	Rinse thoroughly with plenty of water for at least 10 minutes, keeping eyes open
<b>Contact with skin</b>	Wash affected parts thoroughly with soap and water
<b>Swallowing</b>	Wash out mouth cavity with water and drink plenty of water
<b>5. Measures to be taken in the event of fire</b>	
<b>Suitable extinguishing agents</b>	Water spray, carbon dioxide, alcohol resistant foam, and dry extinguishers
<b>Dangerous combustion products</b>	Propionaldehyde. In cases of complete water evaporation combustion will result in carbon dioxide and water
<b>Special safety equipment</b>	Use respiratory protective device. Wear fire brigade clothing
<b>Special dangers caused by the substance itself or during its production, by its combustion products or gases thus generated</b> Propylene glycol and its aqueous solutions may form flammable vapour-air mixtures upon heating	

**6. Accidental release measures**

<b>Personal protective measures</b>	Not relevant. Remove contaminated clothing and wash body down thoroughly with water
<b>Environmental protection measures</b>	Do not discharge product into natural waters without pretreatment (biological treatment plant). Bind the liquid by using a suitable absorbent material (sawdust, sand, etc.) and dispose of in accordance with local regulations
<b>Process of cleaning/absorption</b>	Wash away spills thoroughly with large quantities of water. In case of release of larger quantities which might flow into the draining system or waters, contact the appropriate authorities.

**7. Handling and storage**

<b>Handling</b>	Ensure thorough ventilation of stores and work areas. When correctly used, no special measures required
<b>Fire and explosion protection</b>	If exposed to fire keep containers cool by spraying with water
<b>Storage</b>	Store in polyethylene or steel containers. Do not expose containers to direct sunlight. Earth all containers and equipment. Storage in galvanised containers is not recommended

**8. Measures to restrict exposure and for personnel protection equipment**

**Additional comments regarding the design of the technical installations** see item 7

**Workplace related limits to be controlled** None

**Personal protection equipment**

<b>Breathing protection</b>	Not required
<b>Eye protection</b>	Protective goggles
<b>Hand protection</b>	Rubber gloves
<b>Body protection</b>	Observe usual precautions when handling chemicals

**Physical and chemical characteristics**

<b>Form</b>	Liquid
<b>Colour</b>	Red/Fluorescent
<b>Odour</b>	Typical
<b>Boiling point</b>	>150 °C
<b>Density at 20 °C</b>	approx. 1.030 g/cm <sup>3</sup>
<b>Vapour pressure at 20 °C</b>	20 mbar
<b>Viscosity at 20 °C</b>	approx. 5 mm <sup>2</sup> /s
<b>Solubility in water</b>	completely soluble
<b>pH value (500 g/l 20 °C)</b>	9.0-10.5
<b>Flash point</b>	none
<b>Ignition temperature</b>	n/a
<b>Lower explosion limit</b>	2.6 vol%
<b>Upper explosion limit</b>	12.6 vol%

**10. Stability and reactivity****Chemical stability** Stable with usual handling and storage**Substances to be avoided** Powerful oxidising agents**11. Toxicological data**

**Acute oral toxicity** (LD<sub>50</sub>): >2000 mg/kg (rat)  
**Primary skin irritation** (OECD 404): non-irritant to rabbit  
**Primary mucosal membrane irritation** (OECD 405): non-irritant to rabbit's eyes  
**Inhalation risk** (rat): no diagnosis

Above values based on properties of individual components

**Contact with eyes** Temporary burning and redness may occur**Contact with skin** Occasional contact produces no or only slight effects. Single exposure unlikely to cause harm**Inhalation** Inhalation of mists or aerosols are not harmful although irritation of mucosal membranes in the respiratory system may occur**Swallowing** Irritation of mucosal membranes and digestive system possible**Mutagenicity** No mutagenic effects observed**Carcinogenicity** Not carcinogenic**Additional information** When correctly used as prescribed the product will not, according to best available knowledge and experience, be damaging to health**12. Ecological data**

Data based on the properties of individual components

**Elimination information** Test method: OECD 301A/ ISO 7827  
 Method of analysis: DOC reduction  
 Degree of elimination: >70% - the product is readily biodegradable

The product will not affect the activity of activated sludge in a biological effluent clarification plant if introduced correctly according to local regulations

**Ecotoxic effects** Toxicity to algae: EC50 (72 hr): >100mg/l  
 Toxicity to bacteria: EC50: >1000mg/l  
 Toxicity to daphnids (acute): EC50 (48 hr): 100mg/l  
 Toxicity to fish (*Leuciscus idus*): LC50: >100mg/l

**Additional information** AOX: this product contains no organically bound halogen**13. Information about the disposal of toxic waste****Disposal** TYFOCOR® LS must be disposed of by special means, e.g. suitable incineration, in accordance with local regulations**Contaminated packaging** Contaminated packaging may be used again after cleansing it thoroughly

#### 14. Transportation data

Not subject to the regulations for inflammable liquids. May be sent by post

GGVE/RID: -	GGVS/ADR: -	IMDG-Code: -
UN-No: -	IATA-DGR: -	TA-air: -

The product is not classified according to transport regulations

#### 15. Regulations

The product is not subject to registration as a hazardous material according to EEC directives and therefore does not have to be marked by law.

Contents	Propylene glycol
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Symbol	-
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R-phrases	-
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S-phrases	-
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Water danger class (wdc)	1 (self classification)
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In dealing with chemicals observe the usual protection measures. When storing observe the "Wasserhaushaltsgesetz" of 16 October 1976 (BGB 1I, p.373), including the 1st addendum of 26 April 1987 (German Water Metabolism Law)

#### 16. Further information

This safety data sheet is intended to provide information and recommendations as to how to handle chemical substances and preparations in accordance with the essential requirements of safety precautions and physical, toxicological, and ecological data, and how to handle, store, transport, and use them safely.

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