



## Safety Data Sheet

- Industrial Process Chillers
- Water to Water Heat Exchanges
- Heating & Cooling Systems
- Air Blast Cooling Systems
- Service & Repair

**Thermal Exchange Ltd**  
Chiswick Road  
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Tel: +44(0) 116 254 6652

Fax: +44(0) 116 255 9176

Temperature Control for Industrial, Medical & Scientific

sales@thermalexchange.co.uk  
www.thermalexchange.co.uk

## Section 1: Identification of the substance/ mixture and of the company/ undertaking

### 1.1 Product identifier

Product Name CoolFlow 1 Pre-mix

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses Industrial grade refrigerant with antifreeze and inhibitor functions designed for use in process cooling, refrigeration and HVAC systems.

Uses advised against This product is not recommended for any industrial, professional or consumer use other than the identified uses above.

### 1.3 Details of the supplier of the Safety Data Sheet

Supplier Thermal Exchange Ltd  
Chiswick Road  
Freemens common,  
Leicester,  
LE2 7SX  
+44 (0) 1162 546652  
[info@thermalexchange.co.uk](mailto:info@thermalexchange.co.uk)

1.4 Opening Hours Monday-Thursday - 08:00 - 17:00 Friday – 08:00 – 14:00

## Section 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification - Regulation (EC) No. 1272/2008 (CLP)

Physical and chemical hazards Not classified as a physical or chemical hazard  
Human health Acute Tox. 4 - H302, STOT RE 2 - H373  
Environment Not classified as an environmental hazard

### 2.2 Label elements

EC No.

N/A

Labelling - Regulation (EC) No. 1272/2008 (CLP)

Pictograms



Signal Word

Warning



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### Hazard statements

H302 - Harmful if swallowed

H373 - May cause damage to organs - Kidneys - through prolonged or repeated exposure if swallowed.

### Precuatory statements

P260 - Do not breathe dust/fumes/gas/mist/vapours/spray

P264 - Wash hands thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell

P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

### 2.3 Other hazards

This product does not meet the PBT/vPvB criteria of REACH, annex XIII.

## Section 3: Composition/information on ingredients

### 3.2 Mixtures

#### Component - Monoethylene glycol (ethane-1, 2-diol)

Concentration	80-95%
EC No.	203-473-3
CAS No.	107-21-1
Reach registration No.	01-2119456816-28

#### Classification - Regulation (EC) No. 1272/2008 (CLP)

Acute Tox. 4 - H302

STOT RE 2 - H373

## Section 4: First aid procedures

### 4.1 Description of first aid procedures

General Information	When safe to do so remove the victim from the source of exposure giving consideration as to whether this may cause further discomfort to the victim.
Inhalation	Move the affected person to fresh air at once. Keep warm in a position comfortable for breathing. If breathing becomes difficult, properly trained personnel may assist the victim by supplying oxygen to ease breathing. Get medical attention if any discomfort continues.
Ingestion	Do NOT induce vomiting and seek medical attention immediately. Move victim to fresh air and keep warm and at rest in a position comfortable for breathing. Give victim approximately 250 mL of water however, do not give victim anything to drink if not fully conscious. If medical advice is delayed and an adult has consumed several ounces of this chemical, give approximately 100 mL of hard liquor (for children give 2 mL per kilogram of body weight).
Skin Contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.



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Eye Contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

#### 4.2 Most important symptoms and effects, both acute and delayed

General Information The following symptoms are listed in case of exposure to the 100% neat product.  
Inhalation Inhalation of vapours may cause mild irritation of the upper respiratory tract.  
Ingestion Initial symptoms may include an upset stomach, nausea, vomiting and diarrhoea. Symptoms may progress to hyperventilation, metabolic acidosis, cardiovascular dysfunction and acute kidney failure depending on the extent of poisoning.  
Skin Contact Prolonged and repeated contact may cause mild irritation of the skin.  
Eye Contact Direct eye contact may cause reddening of the eyes.

#### 4.3 Indication of immediate medical needs or special treatment

If several ounces (> 50 mL) of this product have been ingested, early administration of ethanol may help to counteract the toxic side effects such as metabolic acidosis, cardiovascular dysfunction and in severe cases kidney failure. Consider haemodialysis or peritoneal dialysis and thiamine 100 mg plus pyridoxine 50 mg intravenously every 6 hours. If ethanol is used a therapeutically effective blood concentration in the range of 100-150 mg/dL may be achieved by a rapid loading dose followed by a continuous intravenous fusion.

Respiratory symptoms such as pulmonary edema, may be delayed. Victims receiving significant exposure should be kept under observation for 24-48 hours for signs of respiratory distress. In the case of severe poisoning, respiratory support with mechanical ventilation and oxygenation of the patient.

#### Notes for the doctor

No specific recommendations in addition to the suggestions in Sections 4.1 and 4.3. Treat symptomatically.

### Section 5: Firefighting measures

#### 5.1 Extinguishing media

Extinguish with alcohol-resistant foam, carbon dioxide (CO<sub>2</sub>), dry chemicals, sand and dolomite or water fog.

#### 5.2 Special hazards arising from the substance or mixture

Specific Hazards When heated and in the case of a fire, harmful vapours/gases (such as carbon monoxide and carbon dioxide) may be formed.  
Unusual fire and explosion hazards Exposure to extreme heat may cause product containers to explode.

#### 5.3 Advice for firefighting

Protective actions during firefighting Move containers away from fire area if this can be done without risk. Keep people away, isolate the fire and deny unnecessary entry. Use water fog to keep fire-exposed containers cool and disperse vapours. Runoff water should be prevented from entering sewers and watercourses.  
Specialist protective equipment for Fire fighters protective clothing. Wear positive-pressure self-contained breathing apparatus (SCBA) and full Fire fighters protective clothing.



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## Section 6: Procedure for unwanted emissions

### 6.1 Personal precautions, protective equipment and emergency procedures

#### Personal precautions

Avoid flames, sparks, heat and smoking.

In the case of inadequate ventilation, use respiratory protection.

#### Protective Equipment

Wear protective clothing as described in Section 8 of this Safety Data Sheet.

#### Emergency Procedures

Stop leak/release if possible to do so without risk.

Extinguish all ignition sources if safe to do so.

Warn everybody of potential danger and evacuate if necessary.

### 6.2 Environmental precautions

Do not discharge into drains, water courses or onto the ground.

Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

### 6.3 Methods and materials for containment and clean up

Absorb spillage with inert, damp, non-combustible material, then flush the contaminated area with water.

Containers with collected spillage should be appropriately labelled with the correct contents and hazard labels.

Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

### 6.4 Reference to other sections

Wear protective clothing as described in Section 8 of this Safety Data Sheet.

Collect and dispose of spillage as indicated in Section 13.

## Section 7: Handling and storage

### 7.1 Precautions for safe handling

Avoid spilling and contact with the skin and the eyes as well as direct inhalation of sprays and mists.

Provide good ventilation.

Do not eat, drink or smoke in work areas and wash hands after handling this product.

### 7.2 Conditions for safe storage including any compatibilities

Store in tightly-closed, original containers.

Keep separate from food, feedstuffs, fertilisers and other sensitive material.

Do not store near heat sources or expose to high temperatures.

Keep away from heat, sparks and open flame.

### 7.3 Specific end use(es)

The identified uses for this product are detailed in Section 1.2.

## Section 8: Exposure controls / Personal protection

### 8.1 Control parameters

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Name	STD	TWA-8 Hrs	STEL-15 Min
Monoethylene glycol (ethane-1, 2-diol)	WEL	52 mg/m <sup>3</sup>	104 mg/m <sup>3</sup>

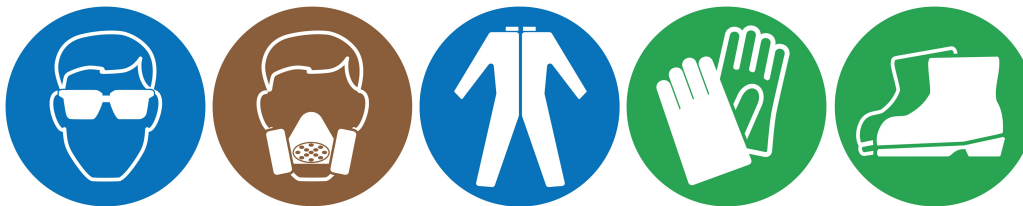
**DNEL**

Industry, Inhalation - Long term local effects: 35mg/m<sup>3</sup>  
 Industry, Dermal - Long term systemic effects: 106mg/m<sup>3</sup>  
 Consumer, Inhalation - Long term local effects: 7mg/m<sup>3</sup>  
 Consumer, Dermal - Long term systemic effects: 7mg/m<sup>3</sup>

**PNEC**

Fresh water: 10 mg/L  
 Marine water: 1mg/L  
 STP: 199.5 mg/L  
 Sediment fresh water: 20.9 mg/kg  
 Soil: 1.53 mg/kg

**8.2 Exposure controls**



**Technical procedures**

Engineering measures	Methods to prevent or control exposure are preferred. Provide adequate ventilation to minimise the risk of inhalation of sprays and mists.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practices. Wash hands after handling this product and at the end of each work shift. Routinely wash work clothing and personal protective equipment to remove possible contaminants.
Respiratory equipment	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Hand protection	PVC/butyl rubber/neoprene gloves are recommended.
Eye protection	Wear approved chemical goggles or face shield.
Skin Protection	Wear rubber apron or protective clothing in case of contact.
Other Protection	Wear suitable protective clothing/footwear as protection against splashing or contamination.
Thermal Hazards	No specific measures required.
Environmental Exposure Controls	Product not classified as an environmental hazard - no specific environmental exposure controls required.



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## Section 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance	Pink liquid
Odour	Non-pungent but characteristic aroma
Odour Threshold	Not applicable
pH	7.5 - 10.5 depending on inhibitor formulation
Melting point / Pour point	-40°C
Initial boiling point	>180°C
Flash point	>110°C
Evaporation Rate	No test data available
Flammability	Product is not classified as flammable
Flammability / explosion limits	Upper limit: 13% Lower limit: 2%
Vapour pressure	12 pa @ 25°C
Vapour density (air = 1)	2.1
Relative density of the mixture	1.08 - 1.2
Solubility	Soluble in water
Partition coefficient: n-octanol / water	No test data available
Auto-ignition temperature	>400°C
Decomposition temperature	No test data available
Viscosity	See product data sheet
Explosive properties	Not applicable - product is not classified as an explosive
Oxidising properties	Not applicable - product is not classified as an oxidising agent

### 9.2 Other information

Not determined.

## Section 10: Stability and reactivity

### 10.1 Reactivity

There are no known reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable at normal ambient temperatures and when used as recommended.

Product is hygroscopic and will absorb water by contact with the moisture in the air.

### 10.3 Possibility of hazardous reactions

There are no known hazardous reactions associated with this product.

### 10.4 Conditions to avoid

Avoid temperatures >180°C for prolonged periods of time, flames and sources of ignition.

### 10.5 Incompatible materials

Strong acids, strong alkalis and strong oxidising agents.

### 10.6 Hazardous decomposition products

No known hazardous decomposition products. Potentially hazardous products released due to fire are listed in Section 5.2 of this Safety Data Sheet.



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## Section 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

This product has not been tested as a whole for acute toxicity health effects. For this reason, the acute toxicity values for the main components of this mixture are listed below.

Acute toxicity values for monoethylene glycol:

LD50, oral, rat: 4700 mg/kg bw

LD50, dermal, rabbit: >10,600 mg/kg bw

LD50, dermal, mouse: >3500 mg/kg bw

LC50, inhalation (vapours), rat: >2.5 mg/L

Oral toxicity of monoethylene glycol is expected to be moderate in humans despite animal testing showing a lower degree of toxicity. The estimated lethal dose in humans of NEAT MONOETHYLENE GLYCOL is expected to be approximately 100mL.

Skin corrosion/ irritation

Skin irritation is not expected when this product is used/handled correctly.

Serious eye damage/ irritation

Eye irritation is not expected when this product is used/handled correctly.

Respiratory/ skin sensitisation

Product not classified as a skin/respiratory sensitiser.

Germ cell mutagenicity

Product is not expected to be mutagenic.

Carcinogenicity

Product is not expected to be carcinogenic.

Reproductive toxicity

Product is not expected to damage the reproductive system or harm a developing fetus.

Evaluation of CMR properties

No test data available.

STOT-single exposure

No test data available.

STOT-repeated exposure

No test data available.

Aspiration hazard

No test data available.

#### General information

See Section 4.2 of this Safety Data Sheet.

Inhalation

Inhalation of vapours may cause mild irritation of the upper respiratory tract.

Ingestion

Initial symptoms may include an upset stomach, nausea, vomiting and diarrhoea.

Symptoms may progress to hyperventilation, metabolic acidosis, cardiovascular dysfunction and acute kidney failure depending on the extent of poisoning.

Skin contact

Prolonged and repeated contact may cause mild irritation of the skin.

Eye contact

Direct eye contact may cause reddening of the eyes

## Section 12: Ecological information

#### Ecotoxicity

The product is not classified as hazardous to the environment.

#### 12.1 Toxicity

LC50, 96 hours, fish:

>100 mg/L - not classified as harmful to fish

EC50, 48 hours, daphnia magna:

>100 mg/L - not classified as harmful to daphnia

EC50, 96 hours, aquatic plants:

>100 mg/L - not classified as harmful to aquatic plants





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### **12.2 Persistence and degradability**

This product is readily biodegradable (90% over 10 days).

### **12.3 Bioaccumulative potential**

Will not bio-accumulate.

Partition coefficient - not determined.

### **12.4 Mobility in soil**

Product is mobile in soil as it is water soluble.

### **12.5 Results of PBT and vPvB assessment**

This product does not meet the PBT/vPvB criteria of REACH, annex XIII.

### **12.6 Other adverse effects**

Not determined.

## **Section 13: Advice on disposal**

### **General information**

Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with Local Waste Disposal Authority.

### **Disposal methods**

Dispose of waste and residues in accordance with local authority and/or local sewage treatment plant requirements.

## **Section 14: Transport information**

### **14.1 UN number**

Product not hazardous for transport - no information required.

### **14.2 UN proper shipping name**

Product not hazardous for transport - no information required.

### **14.3 Transport hazard class(es)**

Product not hazardous for transport - no information required.

### **Transport labels**

Product not hazardous for transport - no information required.

### **14.4 Packing group**

Product not hazardous for transport - no information required.

### **14.5 Environmental hazards**

Product not classed as an environmentally hazardous substance or marine pollutant.

### **14.6 Special precautions for user**

Product not hazardous for transport - no information required.

### **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Product not hazardous for transport - no information required.





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## Section 15: Regulatory information

### 15.1 Safety, health and environmental regulations / legislation for the substance or mixture

#### EU legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

#### Guidance notes

CHIP for everyone HSG228. Approved Classification and Labelling Guide (Sixth edition) L131. Safety Data Sheets for substances and preparations.

### 15.2 Chemical safety assessment

No chemical safety assessment for this mixture has been carried out.

## Section 16: Other information

Issued by Thermal Exchange Ltd  
Revision Date 21/03/2018  
Approved by Graham Wade  
Revision Comments Review in line with CLP regulation

#### Hazard statements in full

The following hazard statements are the hazard statements 'in full' for the components of this mixture. They are not the hazard statements associated with the final classification of this product.

H302 - Harmful if swallowed

H373 - May cause damage to organs - Kidneys - through prolonged or repeated exposure if swallowed

#### Further classification and composition comments

No further classification or composition comments required.

#### (i) Indication of changes

Safety Data Sheet updated to comply with the new requirements as set out in Regulation (EC) No. 1272/2008 (CLP).

#### (ii) Abbreviations and acronyms

bw: bodyweight

CAS No: Chemical Abstracts Service number

CLP: Classification Labelling and Packaging Regulation

DNEL: Derived No-Effect Level

EC: European Commission

EC No: European Chemical number: EINECS, ELINCS or NLP

ECHA: European Chemicals Agency

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

LC50: Lethal Concentration, 50%

LD50: Median Lethal Dose



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PBT: Persistent, Bioaccumulative & Toxic

PNEC: Predicted No Effect Concentration

REACH: Registration, Evaluation, Authorisation & restrictions of Chemicals

SDS: Safety Data Sheet

vPvB: Very Persistent and Very Bioaccumulative

WEL: Workplace Exposure Limit

### **(iii) Training advice**

Product should only be handled by trained operators.

### **(iv) Additional information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give advice about the safe handling of the product named in this Safety Data Sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with products or in the case of processing, the information on this Safety Data Sheet is not necessarily valid for the new made-up material.