

## Safety Data Sheet • Inertech

*for use with*

**FSL Inert Clean Agent Gaseous Suppression Systems**

**Product: CO<sub>2</sub>**

### **IDENTIFICATION FOR THE SUBSTANCE/PREPARATION AND COMPANY**

Product name	Inertech CO <sub>2</sub>
Synonyms	Carbon Dioxide
Chemical Formula	CO <sub>2</sub>
Company Identification	Firetec Systems Ltd. Unit 6, The Business Centre Wokingham, Berkshire, RG41 2QZ E-mail: enquiry@firetec-systems.com
Emergency Phone Numbers	+44 (0)1118 989 7910

### **Hazards identification**

#### Classification of the substance or mixture

*Classification according to Regulation (EC) No. 1272/2008 [CLP]*

Gases under pressure: Liquefied gas H280

*Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]*

Not classified as dangerous substance / mixture.

#### Label elements

*Labelling according to Regulation (EC) No. 1272/2008 [CLP]*

Hazard pictograms (CLP)

:



GHS04

Signal word (CLP)

:

Warning

Hazard statements (CLP)

:

H280 - Contains gas under pressure; may explode if heated.

Precautionary statements (CLP)

- Storage

:

P403 - Store in a well-ventilated place.

#### Other hazards

:

Asphyxiant in high concentrations.

Contact with liquid may cause cold burns/frostbite.

### **First aid measures**

Inhalation:

Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.



Skin contact: In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.

Eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes.

Ingestion: Ingestion is not considered a potential route of exposure.

### **Firefighting measures**

#### Extinguishing media

Suitable extinguishing media: Water Spray or Fog

Unsuitable extinguishing media: Do not use water jet to extinguish

Specific hazards: Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products: None

Specific methods: Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. If possible, stop flow of product. Use water spray or fog to knock down fire fumes if possible. Move containers away from the fire area if this can be done without risk.

Special protective equipment for fire fighters: Use self-contained breathing apparatus. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask. Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.

### **Accidental release measures**

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

Try to stop release. Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved be safe. Ensure adequate air ventilation. Prevent from entering sewers, basements and work pits, or any place where its accumulation can be dangerous. Act in accordance with local emergency plan. Stay upwind.

#### Environmental precautions

Try to stop release.

#### Methods and material for containment and cleaning up

Ventilate area.

### **Handling and storage**

#### Precautions for safe handling:

Safe use of the product: The substance must be handled in accordance with good industrial hygiene and safety procedures. Only experienced and properly instructed persons should handle gases under pressure. Consider pressure relief device(s) in gas



installations. Ensure the complete gas system was (or is regularly) checked for leaks before use. Do not smoke while handling product. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Avoid suck back of water, acid and alkalis. Do not breathe gas.

**Safe handling of the gas receptacle:** Refer to supplier's container handling instructions. Do not allow back feed into the container. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminants particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.

### Conditions for safe storage, including any incompatibilities

Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Container valve guards or caps should be in place. Containers should be stored in the vertical position and properly secured to prevent them from falling over. Stored containers should be periodically checked for general condition and leakage. Keep container below 50°C in a well ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials.

### **Exposure controls/personal protection**

#### Control parameters

OEL (Occupational Exposure Limits) for United Kingdom

WEL - LTEL - UK [mg/m <sup>3</sup> ]	9150 mg/m <sup>3</sup>
WEL - LTEL - UK [ppm]	5000 ppm
WEL - STEL - UK [mg/m <sup>3</sup> ]	27400 mg/m <sup>3</sup>
WEL - STEL - UK [ppm]	15000 ppm

DNEL (Derived-No Effect Level): No data available.

PNEC (Predicted No-Effect Concentration): No data available.

#### Personal protective equipment

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered: PPE compliant to the recommended EN/ISO standards should be selected.



Eye/face protection:	Wear safety glasses with side shields. Wear safety glasses with side shields or goggles when trans filling or breaking transfer connections. Standard EN 166 - Personal eye-protection.
Skin protection:	
Hand protection:	Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risk.
Other:	Wear safety shoes while handling containers. Standard EN ISO 20345 - Personal protective equipment - Safety footwear.
Respiratory protection:	Self-contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

### **Physical and chemical properties**

#### Appearance

Physical state at 20°C / 101.3kPa:	Gas.
Colour:	Colourless.
Odour:	No odour warning properties.
Odour threshold:	Odour threshold is subjective and inadequate to warn of overexposure.
pH value:	Not applicable.
Molar mass:	44 g/mol
Melting point:	-56.6 °C
Boiling point:	-78.5 °C (s)
Flash point:	Not applicable for gases and gas mixtures.
Critical temperature [°C]:	31 °C
Evaporation rate (ether=1):	Not applicable for gases and gas mixtures.
Flammability range:	Non-flammable.
Vapour pressure [20°C]:	57.3 bar (a)
Vapour pressure [50°C]:	Not applicable.
Relative density, gas (air=1):	1.52
Relative density, liquid (water=1):	0.82



Solubility in water:	2000 mg/l completely soluble.
Auto-ignition temperature:	Not applicable.
Other data:	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

### **Stability and reactivity**

Stability and Reactivity: Stable under normal conditions & none reactivity hazard

### **Toxicological information**

Acute toxicity: In high concentrations cause rapid circulatory insufficiency. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness. Unlike simple asphyxiants, carbon dioxide has the ability to cause death even when normal oxygen levels (20-21%) are maintained. 5% CO<sub>2</sub> has been found to act synergistically to increase the toxicity of certain other gases (CO, NO<sub>2</sub>). CO<sub>2</sub> has been shown to enhance the production of carboxyl- or met-haemoglobin by these gases possibly due to carbon dioxide's stimulatory effects on the respiratory and circulatory systems.

### **ECOLOGICAL INFORMATION**

General: No ecological damage is caused by this product.

### **DISPOSAL CONSIDERATIONS**

General: May be vented to atmosphere in a well ventilated place. Discharge to atmosphere in large quantities should be avoided. Do not discharge into any place where its accumulation could be dangerous.

### **TRANSPORT INFORMATION**

UN No.:	1013
ADR/RID ITEM No.:	2.2
Classification code:	2A
ADR/RID Hazard No.:	20
Labelling ADR:	Non-flammable non-toxic gas

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details in this document are believed to be correct at present. Whilst great care has been taken in the preparation of this information, no liability for injury, damage or non-compliance with any legislation or directive arising from its use can be accepted.

This sheet does not constitute or substitute for the users own assessment of workplace risk as required by other health and safety legislation.