MATERIAL SAFETY DATA SHEET
For Liquid Carbon Dioxide

Section 1 IDENTITY OF SUBSTANCE / COMPANY UNDERTAKING
Product name: Liquid Carbon Dioxide
Use: Fire fighting agent
Identification of the companies:
Yara Industrial, Immingham, North East Lincolnshire, DN40 2NS

Section 2 COMPOSITION AND INGREDIENT INFORMATION

Chemical name	CAS No	Content, %
Carbon Dioxide	124-38-9	100

Section 3 IDENTIFICATION OF THE HAZARDS FOR PEOPLE AND ENVIRONMENT
The substance is not classified as dangerous according to Directive 67/548/EEC and its amendments.
Additional Hazards:
Liquefied Gas.
Acts as a simple asphyxiant. Can displace the normal air and cause suffocation from lack of oxygen. The vapour / gas is heavier than air and will spread along the ground. Extremely cold material. Can cause burns similar to frostbite.

See section 11 for more detailed infomration on health effects and symptoms.

Section 4 FIRST AID MEASURES
Eyes Immediately flush eyes with plenty of water for at least 15 minutes, keeping eyelids open. Get medical attention immediately.
Skin In case of contact with liquid, warm frozen tissue with water and get medical attention.
Inhalation If inhaled, remove to fresh air. If breathing is difficult, give oxygen. In all cases of doubt or when symptoms persist, seek medical attention.
Ingestion Not applicable.

Section 5 FIRE FIGHTING MEASURES
Extinguishing Media The product itself has fire-extinguishing properties. Extinguish the fire using a suitable agent for surrounding the fire.
Special Exposure Hazards Container explosion may occur under fire conditions or when heated.
Fire fighters should wear positive pressure self-contained breathing apparatus (SCUBA) and full turnout gear.
Hazardous Therman Decomposition Products These products are carbon oxides (CO, CO_2)

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Section 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions

Use suitable protective equipment (section 8). Follow all fire-fighting procedures (Section 5).

Environmental Precautions and Clean-up Methods

Stop leak if wouthout risk. Prevent entry to sewers, basements or confined areas. Watch for accumulation in low, confined areas. CO2 can displace the normal air and cause suffocation form lack of oxygen.

Note: See section 8 for personal protective equipment and section 13 for waste disposal.

Section 7 HANDLING & STORAGE

Handling

Avoid contact with eyes, skin and clothing. Acts as a simple asphyxiant. Can displace the normal air and cause drowsiness, dizziness and nausea. See section 11 for more detailed information on heath effects and symptoms.

Storage

Storage should be in a defined, ventilated, segregated and approved area designed for the purpose. Provide exhaust ventilation or other engineering controls to keep the airborne concentratioons of vapours below their respective Occupational Exposure Limits (OEL).

Specific Uses

Liquid carbon dioxide (also valid for compressed carbon dioxide) must never be used to rinse tanks, containers or equipment containing flammable liquids/gases, particulates or dust. Risk of explosion in presence of static discharge. If carbon dioxide gas is used to rinse equipment, tanks or containers, take precautionary measures against static discharges.

Section 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Ingredient Name	Occupational Exposure Limits		
Carbon Dioxide	**EH40-WEL (United Kingdom (UK), 1/2005).**		
	STEL: 2740 mg/m3	15 Minutes.	Form: All Forms
	STEL: 15000ppm	15 Minutes.	Form: All Forms
	TWA: 9150 mg/m3	8 Hours.	Form: All Forms
	TWA: 5000ppm	8 Hours.	Form: All Forms

Exposure Controls:

Respiratory Protection

Use a properly fitted, air purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessarry. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product amd the safe working limits of the selected respirator.

Hand Protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessarry.
Eye Protection
Recommended: Use safety eyewear designed to protect against splashing of liquids.
Skin Protection
Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Wash hands, forearms and face thoroughly after handling chemical products, before eating, drinkng smoking or using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquefied Gas
Colour:	Colourless
Odour:	Odourless
Melting / Freezing Point:	Sublimation temperature: -78.5°C (-109.3°F)
Density g/cm^3:	1.03g/cm^3 (-20°C / -4°F)
Solubility:	Very slightly soluble in water
Solubility (at 20°C):	1.688g/l (in water)
Vapour Density:	1.53 (air = 1)
Critical Temperature:	30.9°C (87.6°F)

Section 10 STABILITY AND REACTIVITY
Stability
Stable under recommended storage and handling conditions (See section 7).
Hazardous Decomposition Products
These products are carbon oxides (CO, CO_2).

Section 11 TOXOLOGICAL INFORMATION
Potential Acute Health Effects
Adverse health effects are considered unlikely, when the product is used according to directions.
Over-exposure Signs / Symptoms
Target Organs: Causes damage to the following organs: Lungs, cardiovascular system, skin, eyes, central nervous system.
Other adverse effects: Extremely cold material. Can cause busrn similar to frostbite.
Additional Information: Acts as a simple asphyxiant: symptoms include headache, dizziness, fatigue, drowsiness and in extreme cases, loss of consciousness. Potential suffocation hazard.

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Section 12 ECOLOGICAL INFORMATION
Adverse Effects:
The product is not expected to harm the environment when used properly according to directions.

Section 13 DISPOSAL CONSIDERATIONS
Methods Of Disposal
With adequate ventilation and otherwise under conditions where the low temperature will NOT present a hazard or problem, the liquid may be allowed to evaporate. A cold "fog", heavier than air, will be formed. Do not puncture or incinerate container.Dispose of in accordance with all applicablelocal and national regulations.
Hazardous Waste
Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

Section 14 REGULATORY INFORMATION
EU Regulations
Risk phrases: This product is not classified according to EU Legislation.
Product Use: Industrial Applications.
Classification and labelling have been performed according to EU Directives 67/548/EEC and 1999/45/EC (Including amendments) and the intended use.

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