Section 1. Product and Company Identification.

1.1 Model Number; CO2/1KG/REFIL v1

1.2 Description; Gas Refill Carbon Dioxide 1000g

1.3 Manufacturer;

Sealey Group.
Kempson Way,
Bury St. Edmunds,
Suffolk.
IP32 7AR

1.4 Emergency telephone number; 44 (0) 1284 757 500 (Office Hours)

Date of source compilation; 25 June 2015

Section 2. Hazards Identification.

2.1 Classification of the substance or mixture.
Gases under pressure
Liquefied gas

2.2 Label elements.
Hazard pictogram(s)

Signal Word. Warning

Hazard statements;
H280: Contains gas under pressure; may explode if heated.

Precautionary statements;
P403: Store in a well-ventilated place.

2.3 Other hazards.
Asphyxiant in high concentrations.

Section 3. Substances.

3.1 Chemical Name (substance)	3.1 CAS No.	3.2 Concentration Volume	Classification	
			Hazard Class & Category Code	Hazard Statements
Carbon Dioxide	124-38-9	100%	Not classified	-

For full text of Phrases and Statements, see Section 16.

Section 4. First Aid Measures.

4.1 Description of first aid measures

Inhalation

In high concentrations may cause asphyxiation.
Symptoms may include loss of mobility/consciousness.
Victim may not be aware of asphyxiation.
Remove victim to uncontaminated area wearing self-contained breathing apparatus if necessary.
Keep victim warm and rested.
Low concentrations of CO_2 cause increased respiration and headache.
Call a doctor.

Skin Contact

Contact with evaporating liquid may cause frostbite or freezing of skin.
Thaw frosted parts with lukewarm water.
Do not rub affected area.
Get immediate medical advice/attention.

Eye Contact

Rinse the eye with water immediately.
Remove contact lenses, if present and easy to do.
Continue rinsing.
Flush thoroughly with eater for at least 15 minutes.
Get immediate medical assistance.
If medical assistance is not immediately available, flush an additional 15 minutes.

Ingestion

Not a likely route of exposure.

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

Respiratory arrest.
Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.

4.3. Indication of any immediate medical attention and special treatment needed

Hazards: Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.

Treatment: Thaw frosted parts with lukewarm water.
Do not rub affected area.
Get immediate medical advice/attention.

Section 5. Fire Fighting Measures.

5.1. Extinguishing media
Material will not burn. In case of fire in the surroundings:
Use appropriate extinguishing agent.

5.2. Special hazards arising from the substance or mixture
None identified.

5.3. Advice for fire-fighters
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Section 6. Accidental Release Measures.

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area.
Provide adequate ventilation.
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.

6.2. Environmental precautions
Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up
Provide adequate ventilation.

6.4. Reference to other sections
See Section 7 for information on Safe Handling
See Section 8 for information of Personal Protective Equipment.
See Section 13 for information on disposal.

Section 7. Handling and Storage.

7.1. Precautions for safe handling

Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Protect containers from physical damage; do not drag, roll, slide or drop. Do not deface labels. When moving containers, use appropriate equipment e.g. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow back feed into the container. Keep container below 50°C in a well ventilated place. When using do not eat, drink or smoke. Never use direct flame of electrical heating devices to raise the pressure of a container. Leave protection caps in place until container stand and is ready to use. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminates particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place. Depressurisation of liquid CO2 below approximately 5 bar can create solid CO2 which may block protective devices, pipework and create dry-ice within containers.

7.2. Conditions for safe storage, including any incompatibilities

Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material.

7.3. Specific end use(s)

Intended for use as a refillable gas cylinder: Model Number identified in 1.1 with Description stated in 1.2.

Section 8. Exposure Controls/Personal Protection.

8.1. Control parameters

Chemical Name	Type	Exposure Limit Values		Source
Carbon Dioxide	MAK	5.000 ppm	9.100 mg/m^3	Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG) (2011)
	TWA	5.000 ppm	9.000 mg/m^3	EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU (12 2009)
	AGW	5.000 ppm	9.100 mg/m^3	Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace (01 2012)

8.2. Exposure controls

Appropriate Engineering Controls

Oxygen detectors should be used where asphyxiating gases may be released. Ensure/provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Systems under pressure should be regularly checked for leakages. Use permanent leak tight connections (e.g. welded pipes). Do not eat, drink or smoke when using the product.

Eye/Face Protection

Safety eyewear, goggles or face shield to EN 166 should be used to avoid exposure to liquid splashes.
Wear eye protection to EN 166 when using gases.

Skin Protection

Wear protective gloves to EN 388.

Respiratory Protection

Wear safety shoes to ISO 20345.

Section 9. Physical and Chemical Properties.

9.1. Information on basic physical and chemical properties

The following information is not a technical specification or sales specification.

(a) Appearance:	Colourless liquefied gas.
(b) Odour:	Odourless.
(c) Odour threshold;	No information available.
(d) pH:	3.2 - 3.7
(e) Melting point/freezing point;	- 56.6°C
(f) Initial boiling point and boiling range;	- 78.5°C
(g) Flash point;	Not applicable to gases and gas mixtures.
(h) Evaporation rate;	Not applicable to gases and gas mixtures.
(i) Flammability (solid, gas);	Non-flammable gas.
(j) Upper/lower flammability or explosive limits;	Not applicable.
(k) Vapour pressure;	45.1 bar (10°C)
(l) Vapour density;	1.522 (21°C)
(m) Relative density;	1.512 (-56.6°C)
(n) Solubility(ies);	Solubility in water: 2.9 mg/l (25°C)
(o) Partition coefficient: n-octanol/water;	0.83
(p) Auto-ignition temperature;	Not applicable.
(q) Decomposition temperature;	No information available.
(r) Viscosity;	0.07 mPa.s (20°C) 0.02 mPa.s (20°C)
(s) Explosive properties;	Not applicable.
(t) Oxidising properties.	Not applicable.
9.2 Other information	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at/or below ground level.

Section 10. Stability and Reactivity.

10.1. Reactivity	No information available.
10.2. Chemical stability	Stable under normal conditions.
10.3. Possibility of hazardous reactions	None.
10.4. Conditions to avoid	None.
10.5. Incompatible materials	No reaction with any common materials in wet or dry conditions.
10.6. Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological Information.

11.1. Information on toxicological effects

In high concentrations may cause rapid circulatory deterioration even at normal levels of oxygen concentration. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness.

Section 12. Ecological Information.

12.1. Toxicity	No ecological damage caused by this product.
12.2. Persistence and degradability	Not applicable to gases and gas mixtures.
12.3. Bioaccumulative potential	The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.
12.4. Mobility in soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
12.5. Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
12.6. Other adverse effects	No information available.

Section 13. Disposal Considerations.

General information: Do not discharge into any place where its accumulation could be dangerous. Vent to atmosphere in a well ventilated place.

Disposal methods: Refer to the EIGA code of practice (Doc.30 “Disposal of Gases”, downloadable at http://www.eiga.org) for more guidance on suitable disposal methods. Dispose of container via supplier only.

Dispose of product in accordance with local authority regulations.

Section 14. Transport Information.

ADR. International Carriage of Dangerous Goods by Road.

14.1. UN number	UN 1013
14.2. Name and Description	Carbon dioxide
14.3. Transport hazard class(es)	2
14.4. Packing group	-
14.5. Environmental hazards	Does not present an environmental hazard.
14.6. Special precautions for user	No special precautions necessary.

IATA. International Air Transport Association.

14.1. UN number	UN 1013
14.2. UN Proper Shipping Name/Description	Carbon dioxide
14.3. Transport hazard class(es)	Division 2.2
14.4. Packing group	-
14.5. Environmental hazards	Does not present an environmental hazard.
14.6. Special precautions for user	No special precautions necessary.

IMDG. International Maritime Dangerous Goods.

14.1. UN number	UN 1013
14.2. UN proper shipping name	Carbon dioxide
14.3. Transport hazard class(es)	Division 2.2
14.4. Packing group	-
14.5. Environmental hazards	Does not present an environmental hazard.
14.6. Special precautions for user	No special precautions necessary.
14.7. Transport in bulk – Maritime only.	Bulk transport is not applicable to this product

Section 15. Regulatory Information.

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
No information available.

15.2. Chemical safety assessment
No information available.

Section 16. Additional Information.

Full text of Phrases and Statements used in Section 3;

The above information is believed to be accurate and represents the best information currently available.
No warranty is expressed or implied by the above information.
We assume no liability resulting from use of the above information.
The end user should conduct their own investigations to determine the suitability of the above information for their particular purpose.

Issue level	Date	Revisions
1	06/08/09	First issue.
2	12/06/17	Format only.

End of Safety Data Sheet.