

Do's and Don'ts CO₂ in Cylinders

Safety information for CO₂ cylinder users

1. Carbon dioxide is stored in cylinders as a compressed liquefied gas and any increase in temperature will cause an increase in pressure. Consequently the pressure in the cylinder is not a reliable indication of the contents. To protect cylinders against over-pressure, they are fitted with bursting discs. These discs are designed to rupture at 190 bar, with an initial loud bang, followed by a rushing noise as the cylinder contents empty.

2. The cylinder valve outlet thread is 0.860 inch major diameter, 14 threads per inch, BS Whitworth form. Female connection should be in accordance with IBS 341: Part 1 outlet connection No. 8.

3. A standard (vapour off-take) cylinder discharges gaseous CO₂. Cylinders with a white stripe running along their length are fitted with dip-tubes to discharge liquid CO₂ (liquid off-take). In both cases, the valve should be uppermost when discharging CO₂.

4. A single large vapour off-take cylinder (34kg) can deliver up to 1.8kg/h. Higher flows will cause the cylinder to become very cold and collapse the pressure inside it. High flows can be safely obtained by using liquid off-take cylinders together with a suitable vaporiser.

5. As CO₂ vapour is heavier than air it will tend to sink to the lowest level when released to the atmosphere.

6. A safety data sheet is available from Harp International Limited and should be obtained before use of this product.

Emergency Contact:

+44 (0) 1270 502891

(24 hours)

Safe Handling and Storage

- Do** use gloves when handling cylinders and valves.
- Do** handle cylinders with care.
- Do** store cylinders in a cool place with low level ventilation.
- Do** store cylinders safely and securely.
- Do** carry cylinders in open vehicles if possible.
- Do** check that cylinders are correctly labelled before taking into store.

- Don't** handle cylinders and valves with wet hands.
- Don't** drop cylinders, allow them to be struck violently or use them as work supports, etc.
- Don't** store cylinders in direct sunlight, near steam pipes or other sources of heat.
- Don't** keep cylinders in a damp or corrosive atmosphere.
- Don't** carry cylinders in closed vehicles without adequate ventilation.
- Don't** use cylinders that have no label or are incorrectly labelled.

Usage

- Do** fit a pressure regulator to the valve outlet (vapour off-take cylinders only).
- Do** use equipment designed for the duty.
- Do** use a vaporiser if gas is required from a liquid off-take cylinder
- Do** secure cylinder vertically with valve at top before use.
- Do** point valve outlet away from you before opening valve.
- Do** open valve momentarily before connecting to circuit.
- Do** use the cylinder valve in the fully open position
- Do** close cylinder valve and depressurise circuit before disconnecting cylinder.
- Do** use non-return valves in circuits where there is a possibility of liquids being returned to the cylinder
- Do** clearly label faulty cylinders with fault and return to supplier as soon as possible.
- Do** return empty cylinders as soon as possible.
- Do** use a valve outlet cap to protect the valve threads and prevent the outlet becoming contaminated.
- Do** ensure that cylinders have the correct commodity label before use.
- Do** follow the guidelines.

- Don't** connect a cylinder directly to a low pressure plant
- Don't** use equipment of doubtful origin or design.
- Don't** connect pressure regulators directly to liquid off-take cylinders.
- Don't** open valve fully until satisfied that all connections are properly made.
- Don't** use cylinder valve as a flow controller.
- Don't** seal leaks while equipment is under pressure.
- Don't** use a Stillson wrench on the valve handwheel or use excessive force when operating the cylinder valve.
- Don't** use cylinders with faulty valves.
- Don't** store full and empty cylinders together.
- Don't** attempt high flow rates from single vapour off-take cylinders.
- Don't** interfere with pressure regulator or relief device settings.
- Don't** interfere or make any substitution to the cylinder bursting disc.
- Don't** use cylinders that have no commodity label or are incorrectly labelled.
- Don't** take any chances.