

Safety Alert

Uncontrolled Gas Release (EVOS 300 Bar Cylinder)

July 2021



Gas release due to user error

Over the past few months there have been two serious near misses where inert gases have been released in an uncontrolled fashion at high pressure (300bar) from the newer BOC “EVOS” gas cylinders (narrowly missing the user in each case). Both incidents occurred when researchers were changing an empty gas cylinder for a fresh one and neglected to check that the cylinder was connected to the associated manifold before opening the cylinder valve. This caused a high-pressure gas jet to be released from the cylinder outlet valve into the working area fortunately stopping when the shock caused the user to release the control lever before it reached the lock position.

EVOS cylinders are designed to be easy to operate using a simple lever (and safety interlock) but the simplicity of their operation can lead to carelessness even in experienced, regular users and it is important to remember that they can be just as dangerous as conventional gas cylinders and treat them with the same level of caution.

Required actions

The uncontrolled release of any gas from a high-pressure cylinder is a very dangerous occurrence with the stored energy inside the cylinder presenting a significant physical risk to anyone in the vicinity in addition to the hazardous properties of the gas itself. To ensure that users are not put at risk the following steps should be taken:

- Users of compressed gas cylinders should have received suitable training (including regular refresher training) either from an experienced local person or from a suitable external trainer. It is important to confirm that all cylinder users are competent to use the equipment present in their area and not to assume that previous experience in other organisations is sufficient. Cascading training from one user to another to the next should also be avoided to prevent mistakes from being repeated and amplified and training should only be provided by trained, competent people.
- Users should be reminded to check that cylinders (especially EVOS cylinders) have been fully connected to a manifold and/or piece of equipment before the valve is opened. This safety check should form a key part of the standard procedures for all individuals involved in changing compressed gas cylinders no matter what their level of experience.
- Consider introducing a Standard Operating Procedure (SOP) and/or checklist that covers the steps required to successfully (and safely) change the compressed gas cylinders in your laboratory / working area. It's always a good idea to include some basic safety information (including pre-use safety checks) as a part of the procedure.