



## *Packaged Gas Division*

# *Technical Service Bulletin*

**TITLE**

***Flex Fill Perma- No CO2 use***

**Date: 1/2/14**

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**Issue:** The purpose of this TSB is to emphasize the importance of not using the Flex Fill style Permas for the storage of Carbon Dioxide (CO2).

**Models Affected:** All vertical and horizontal Perma Cyls that are the Flex Fill type design with a ullage tank inside the inner vessel.

**Solution:** Early versions of this new design did not include a label that warned the user against filling the tank with CO2. New label (P/N 20756913) can be ordered from Chart to put on Flex Fill style Perma Cyls.

**Description:** The Flex Fill tank utilizes a small ullage tank that is located inside the inner vessel. This tank allows the inner tank to be filled hydraulically full and enables an auto shut down on the fill when filled with the Orca delivery vehicle. This ullage tank has a small communication orifice that allows product (LN2, LOX, LAR) to flow in and out of the tank. This particular design is not recommended for use with CO2 due to the potential to snow block the communication orifice or form dry ice as liquid CO2 flows into the ullage tank. The blocked orifice could potentially cause this ullage tank to rupture due to over pressurization. In order to insure that CO2 is not put into this style tank by mistake, recommend that you place the decal pictured below on all Flex Fill designed Perma Cyls.



P/N 20756913

Chart's continuous attention to product improvement and customer satisfaction has resulted in this design modification. If you have concerns or questions relative to this action, please contact your Chart Customer Service Representative at (800) 400-4683. Thank you for depending on Chart to provide high product quality and service.