Oxygen Cylinder Markings

Oxygen cylinders are used to store gaseous oxygen for patient care in the deployed environment. It is important to understand the markings on these cylinders in order to reduce the risks associated with their use. The primary risks associated with oxygen cylinders are the increased risk of fire and the risk of working with high pressure gas. Oxygen cylinders can have pressures as high as 2250 pounds per square inch gauge (psig). The Compressed Gas Association (CGA) and the Department of Transportation (DOT) provide guidance on the safe transportation, storage, and use of high pressure oxygen cylinders.

Oxygen cylinders are marked to designate the type of cylinder, maximum fill pressure, hydrostatic test date, inspector, manufacturer, and serial number. The marking are normally stamped into the shoulder of the cylinder. The hydrostatic test date and inspector mark indicate when the cylinder was last tested and who tested the cylinder. Most oxygen cylinders are required to be tested every 5 years. This test ensures the cylinder can safety hold the maximum fill pressure. There are two other markings which are sometimes found on these cylinders. The plus (+) sign located after the test date designates that the cylinder can be filled to 10% above the pressure stamped on the cylinder. The five-pointed star in the same location designates that the hydrostatic test date has been extended an additional 5 years. A cylinder with a five-pointed star would need to be tested every 10 years.

Examples

Vertical Alignment:

DOT-3AA 2015
1234567
XY Corp
8 ® 08 + ✵

Horizontal Alignment:

DOT-3AA 2015   1234567   XY Corp   8 ® 08 + ✵

DOT = Department of Transportation
3AA = Seamless alloy-steel cylinder
2015 = 2015 psig fill pressure
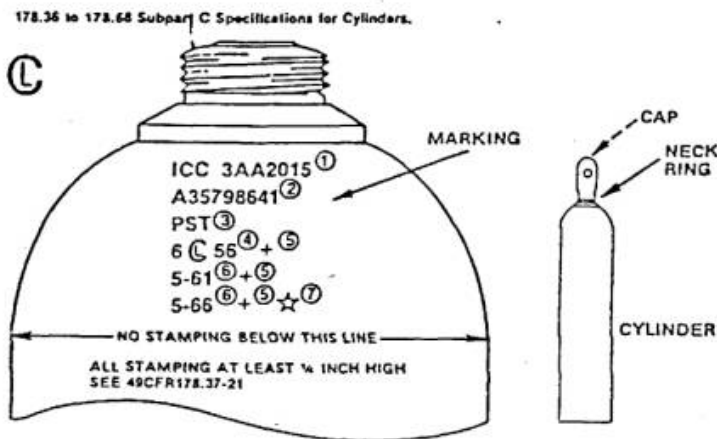**1234567** = Serial number of cylinder
XY Corp = Manufacture of cylinder
8 ® 08 = Month and Year, in this example, August 2008, the symbol of the inspector is commonly placed between month and year (® used as example only)
+ = Cylinder maximum fill pressure can be 10% above 2015 psig or 2216.5 psig
✵ = Cylinder may be tested every 10 years versus the standard 5 years

MARKING REQUIREMENTS

178.36 to 178.68 Subpart C Specifications for Cylinders.

MARKING

ICC 3AA2015 ①
A35798641 ②
PST ③
6 Ⓒ 56 ④ + ⑤
5-61 ⑥ + ⑤
5-66 ⑥ + ⑤ ☆ ⑦

— NO STAMPING BELOW THIS LINE —

ALL STAMPING AT LEAST ¼ INCH HIGH
SEE 49CFR178.37-21

CAP
NECK RING
CYLINDER

1. DOT or ICC marking may appear-new manufacture must read "DOT". 49CFR171.14 "3AA" indicates spec in 49CFR178.37. "2015" is the marked service pressure.

2. Serial number- no duplicates permited with any particular symbol- serial number combination.

3. Symbol of manufacturer, user, or purchaser.

4. "6 56" date of manufacture. Month and year. "Ⓒ" disinterested inspector's official mark.

5. Plus mark (+) indicates cylinder may be 10% overcharged per 49CFR173.302(C).

6. Retest dates

7. 5 pointed star indicates ten year retest interval See 49 CFR173.34(e)(15).

CAUTION: This is a training aid and does not include all provisions of the regulations.

Figuire 1 Marking Requirements

Typical Oxygen Cylinder Markings Locations

If a cylinder is in use (filled or partially filled with oxygen) and it reaches its retest date, there is no requirement to pull the cylinder from use or empty the cylinder to facilitate retesting. The cylinder can stay in use until it is emptied. There is no time limit for keeping the cylinder in use. After the cylinder is emptied, it must be tested before it can be refilled and transported.

Example Commercial Oxygen Cylinder Label

CGA Pamphlet C-9, Standard Color Marking of Compressed Gas Cylinders Intended for Medical Use, states the color for oxygen cylinders is green. No other gas should be placed in a cylinder designated for oxygen. It is a safe practice to validate the contents of cylinders with an oxygen analyzer before use. This will validate both content and concentration. Most cylinders

filled by commercial sources will also have a label indicating the contents and an oxidizer or fire warning. These labels should not be removed or covered by other labels or markings.