



PS-60—2019
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POSITION STATEMENT

PROHIBITION ON REFILLING SINGLE-USE CYLINDERS AND CONTAINERS

Question

Can single-use (also called disposable, nonreturnable, or nonrefillable) cylinders and containers be refilled safely?

Answer

No, they cannot. A cylinder or container rupture causing serious personal injury or property damage can result from refilling single-use cylinders or containers. DO NOT try to refill or reuse single-use cylinders or containers; they are potentially dangerous when refilled.

Reason

Single-use cylinders and containers manufactured to specifications DOT-39 (49 CFR 178.65), TC-39M, or CTC-39 (CSA B340 section 4.6.5.4) *shall never be refilled and transported* [1, 2].

All “nonreusable,” “disposable,” “nonreturnable,” or “nonrefillable” cylinders and containers manufactured according to DOT Specification 39 or TC Specification 39M are designed for one-use service with a specific product and are considered by DOT and TC to be unserviceable after one use. These cylinders and containers shall not be refilled or reused as containers for any pressured liquid or gas.

In Canada, refilling of Specification TC-39M and CTC-39 cylinders and containers is prohibited by clause 4.6.5.4 of CSA B340, *Selection and use of cylinders, spheres, tubes and other containers for the transportation of dangerous goods, Class 2* [2].

The letters “NRC/RU” (nonrefillable container/*remplissage unique*) are required to be marked on the cylinder or container, as a minimum, as outlined in CSA B339, *Cylinders, spheres, and tubes for the transportation of dangerous goods* [3].

These stringent regulations were put into effect in recognition of the dangers inherent in the misuse of these special cylinders and containers, which were designed for only limited service. Unfortunately, such misuse has already resulted in a number of severe personal injuries caused by ruptured cylinders or containers. Cylinder or container failure in most of these cases could be attributed to the use of gases or liquids other than those for which the cylinder or container was intended.

The most blatant misuse of these cylinders and containers has been their conversion to compressed air tanks used for tire inflation and various cleaning functions where a portable source of air pressure is needed. This is a particularly dangerous application because:

- Compressed air could contain moisture and eventually cause internal corrosion of the single-use cylinder or container with no visible indications to the exterior. The strength of the cylinder or container could be drastically reduced;
- Being designed for only one-use cycle, such single-use cylinders and containers have a limited cycle life. Repeated fillings in air service subject the cylinders or containers to many pressure cycles that exceed design specifications; and
- Used cylinders and containers could have been weakened by mechanical abuse or by application of heat during their use in the original intended service or, later, when stored in unprotected areas causing external corrosion. In such cases, the pressure relief device, designed to function within a higher range consistent with a new undamaged cylinder or container, might not afford adequate protection against premature cylinder or container failure.

Disposal of these single-use cylinders and containers should be in accordance with recommendations obtained from the suppliers who originally filled the cylinders or containers or your local, state, provincial, or federal environmental agency. Such recommendations may sometimes be included in the labeling of the cylinders and containers.

For all of these reasons, single-use cylinders and containers are not fit for further use with *any* material once they have been emptied of their original charge. CGA urges all distributors and service organizations to support this recommendation in an effort to prevent further incidents that can occur through misuse of these cylinders and containers.

References

Unless otherwise specified, the latest edition shall apply.

[1] *Code of Federal Regulations*, Title 49 (Transportation), Parts 100-180, U.S. Government Printing Office. www.gpo.gov

[2] CSA B340, *Selection and use of cylinders, spheres, tubes and other containers for the transportation of dangerous goods, Class 2*, CSA Group. www.csagroup.org

[3] CSA B339, *Cylinders, spheres, and tubes for the transportation of dangerous goods*, CSA Group. www.csa-group.org

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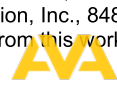
Work Item 23-57
Safety and Health Committee

NOTE—No technical information has been changed from the 2019 edition. This reaffirmed edition may include minor editorial changes

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