

Technical Information Bulletin



U.S. Department of Labor
Occupational Safety and Health Administration

Compressed Gas Cylinders Fitted with the Wrong Compressed Gas Association (CGA) Connections

TIB 00-11-06

Purpose

The purpose of this Technical Information Bulletin (TIB) is:

1. to make users of certain compressed gas cylinders (used for argon, helium, nitrogen, and nonflammable gas mixtures) aware of the need to use appropriate CGA designated connections ; and
2. to recommend that users of compressed gas cylinders inspect their cylinder connections to determine whether the cylinders are fitted with CGA connections appropriate for use with the gas cylinders' rated pressure.

This TIB is not a new standard or regulation and it creates no new legal obligations. It is advisory in nature, informational in content, and is intended to assist employers in providing a safe and healthful workplace.

For a more detailed description of the nature and effect of Technical Information Bulletins, see the Important Information box at the end of this bulletin.

Background

The Denver Regional Office brought to the attention of the Directorate of Technical Support that some high-pressure nitrogen cylinders were fitted with the wrong cylinder connections. The United States Air Force discovered that the wrong cylinder connections were fitted to certain nitrogen cylinders rated for 3500-3600 psig. The Air Force Safety Center at Kirtland AFB, New Mexico, distributed a High Accident Potential (HAP) report to all Air Force installations, as well as to Army and Navy Safety Centers. The HAP mandates a one-time inspection of these cylinders and sets forth procedures for correcting any discrepancies that may be found.

Description of Hazard

While conducting a hydrostatic test, the U.S. Air Force discovered compressed nitrogen cylinders rated for 3500-3600 psig that were fitted with CGA 580 connections. The proper connection for the 3500-3600 psig nitrogen cylinder is the CGA 680 connection, which is rated for pressures up to 5500

psig. The CGA 580 connection is rated for a maximum of 3000 psig and may not be able to withstand higher pressures. The Air Force removed the improper connections, and the proper CGA 680 connections were procured and installed prior to returning the cylinders to service.

The cylinders rated for over 3000 psig can be identified by the Department of Transportation (DOT) number on the cylinder. For example, DOT 3AA3600 indicates a cylinder rated for 3600 psig.

Recommendations

Although the situation described above involved cylinders used for inert gases (argon, helium, nitrogen, and nonflammable gas mixtures), OSHA recommends that users of all types of compressed gas cylinders check to determine if the connections are appropriate for that cylinder's rated pressure.

For an inert gas cylinder rated for pressures less than 3000 psig, users may fit the cylinder with a CGA 580 connection. If the cylinder is rated for pressures

of 3001-5500 psig, users should fit the cylinder with a CGA 680 connection. If the cylinder is rated for 5501-7500 psig, a CGA 677 connection should be used.

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Important Information on the Nature and Effect of Technical Information Bulletins

OSHA's Directorate of Technical Support (DTS) issues Technical Information Bulletins (TIBs) to provide information about occupational hazards and /or to provide information about noteworthy, innovative, or specialized procedures, practices and research that relate to occupational safety and health. DTS selects topics for TIBs from recognized scientific, industrial hygiene, labor, industry, engineering, and/or medical sources.

The *Occupational Safety and Health Act* requires employers to comply with hazard-specific safety and health standards. In addition, employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm under Section 5(a)(1), the General Duty Clause of the Act. Employers can be cited for violating the General Duty Clause if there is a recognized hazard and they do not take appropriate steps to prevent or abate the hazard. However, the failure to implement TIB recommendations is not, in itself, a violation of the General Duty Clause. Citations can only be based on standards, regulations, and the General Duty Clause.

Further information about this bulletin may be obtained by contacting OSHA's Directorate of Technical Support at 202-693-2200.