MIOSHA Fact Sheet

General Industry Safety and Health Division

Acetylene

In Reference to Acetylene, What Changes Have Occurred in MIOSHA Part 69?

MIOSHA Part 69, Compressed Gases: Acetylene, Hydrogen, Oxygen, and Nitrous Oxide, has been recently updated to adopt the changes made in the corresponding federal OSHA standards. Significant changes include replacing outdated references to consensus standards with updated references.

The updates to the standard include mandatory requirements for acetylene piping systems, special requirements for high-pressure piping systems, and prohibit storage of acetylene cylinders in enclosed spaces. The newer consensus standards also provide employers with new and more extensive information than the previous standards.

What Changes Apply to Cylinders?

Provisions in the Compressed Gas Association (CGA) 2003 pamphlet that are significant revisions from the 1966 edition are:

- Prohibit storing acetylene cylinders in enclosed spaces such as drawers, closets, unventilated cabinets, automobile trunks, or toolboxes. In addition, the document recommends that acetylene cylinders should not be stored or transported in automobiles or any enclosed vehicles.
- Recommend a flow rate of one-tenth of the cylinder capacity per hour during intermittent use, and one-fifteenth of the cylinder capacity per hour during continuous use. Note that both of these flow-rate provisions are advisory, not mandatory.
- Added a sentence warning employers to avoid abnormal mechanical shocks that could damage cylinders, valves, and pressure-relief devices: "This [avoiding abnormal mechanical shocks] is especially important on those small cylinders not equipped with protection caps." This sentence notifies employers that the valves of small cylinders are especially susceptible to damage (and possible release of acetylene) because protective caps or guards do not cover the valves.
- Added a sentence requiring employers to visually examine the CGA connection on the cylinder and remove any visible contamination before connecting the regulator. Any visible contamination can be removed using nitrogen, air, or a clean rag. An acetylene cylinder valve should not be opened without a suitable regulator and flow restrictor such as a torch attached.
- Plain-language revisions were made to the text. Guidance is provided on how to handle leaking cylinders and it is noted that commercial acetylene generally is considered nontoxic. CGA also added text to the 2003 edition that prohibits tightening leaking fuse-plugs or valves while the cylinder is under pressure, as well as enhanced illustrations of acetylene cylinder-shell constructions.

What Changes Apply to Piping Systems?

- The requirements for acetylene piping systems are specified in “Standard for Acetylene Charging Plants” Chapter 9 ("Acetylene Piping") of NFPA 51A-2006 or Chapter 7 ("Acetylene Piping") of NFPA 51A-2001 ("Standard for Acetylene Charging Plants"). Whether employers use NFPA 51A-2006 or NFPA 51A-2001 depends on when the facilities, equipment, structures, or installations used to generate acetylene or to charge (fill) acetylene

cylinders were approved for construction or installation.

What Changes Apply to Generators and Filling Cylinders?

- The NFPA 51A-2006 excludes from its provisions any facilities, equipment, structures, or installations that existed or were approved for construction or installation prior to the effective date of the standard. This NFPA standard also states, "Where specified, the provisions of this standard shall be retroactive." Therefore, this provision requires compliance with the entire standard only when facilities, equipment, structures, or installations were approved for construction or installation on or after February 16, 2006.

  The 2001 edition of NFPA 51A has no effective-date provision, and applies retroactively to all facilities, equipment, structures, or installations that existed (or were approved for construction and installation) prior to February 16, 2006.

How can I get more information?

More information is available from the MIOSHA Consultation Education and Training Division at (517) 284-7720 or online at www.michigan.gov/cet.

Lists of the significant changes in the OSHA standard are available in the Federal Register dated August 11, 2009.

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