

SAFETY & TECHNOLOGY ORGANIZER

OCTOBER 2017

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Safety Topic: Carbon Monoxide

Please contact Mike Dodd, GAWDA DOT, Security, OSHA & EPA Consultant for more information.

Traffic Bulletin: Vehicle Attendance Requirements

Please contact Mike Dodd for more information.

Medical, Food & Specialty Gases Bulletin:

- 1. Beverage Carbon Dioxide – ISBT Guideline Revision**
- 2. Professional Compliance Seminar – audit survival, dates.**
- 3. October Medical Gas Roundtable (10/27/2017) – CGMP - High Pressure Prefill Inspection and Filling High Pressure Cylinders**
- 5. Webinars: Specialty Gas Operations; Food Gas Roundtable: dates.**
- 6. Micro Audit Suggestions**

Please contact GAWDA Medical Gas Consultant, Tom Badstubner for more information.

GAWDA is pleased to distribute this information to: Distributor and Supplier Key Contacts and all Compliance Manual Owners. Please carefully review this mailing and be sure the information is passed to the appropriate person within your organization. Timely Safety data is a benefit of Membership in GAWDA.



Safety Meetings are important!

They: get your employees actively involved
encourage safety awareness
help identify problems before they become accidents
motivate employees to follow proper safety procedures

We are happy to provide you with a monthly topic for your agenda.

ROUTE TO:

- ☐ General Manager
- ☐ Safety Coordinator
- ☐ Supervisor Dept. _____
- ☐ Other _____
- ☐ Date of Meeting _____

Carbon Monoxide

I have a few safety topics that warrant repeating on an annual basis. One is the proper filling and storage of LPG products and another is carbon monoxide asphyxiation. With the heating season coming upon us, now is the time to remind people about carbon monoxide.

Do you know the leading cause of poisoning in the America? It is odorless. It is colorless. It is tasteless. It is deadly. It is carbon monoxide. Mild poisoning can cause such symptoms as nausea, dizziness or headaches while severe poisoning can result in brain or heart damage or even death.

Carbon monoxide (CO) is a gas produced during the incomplete combustion of carbon containing substances (paper, wood, and petroleum products). Forklifts powered by gasoline, natural gas, or propane may emit dangerous levels of CO. Because CO has no warning properties, employees can be exposed to high levels without realizing that there is a problem. This also applies to other gasoline, natural gas, or propane fueled vehicles, power tools, or other equipment used indoors, such as floor buffers, pressure washers, ice cleaners used to resurface ice rinks, or unvented space heaters.

The most effective way to keep CO concentrations below the 35 parts per million of air (ppm) eight-hour time-weighted average permissible and the ceiling of 200 ppm (as measured over a 15 minute period) (individual State regulations may be more stringent) is to utilize one or more of the following controls:

Suggestions for Employers:

- Where possible, substitute equipment that doesn't produce CO or Nitrogen Oxides (NOx) (e.g. electric forklifts).
- Ensure proper maintenance of forklifts to reduce emissions.
- Maintain appliances and equipment in good order, adjusting flames, burners and drafts to reduce the formation of carbon monoxide.



- Do not allow forklifts to idle while waiting to resume operations.
- Ensure proper ventilation of work areas. This is especially a potential problem during periods of cold weather when shop and warehouse doors and windows are shut tight and ventilation is restricted.
- Use CO sensors or alarms; conduct periodic sampling of the work area for CO and NOx.
- Provide training to employees on the symptoms, sources, and prevention of CO and NOx poisoning.

Suggestions for Workers:

- Report to your employer any condition which might make carbon monoxide form or accumulate.
- Be alert to ventilation problems, especially in enclosed areas where gases of burning fuels may be released.
- Report complaints early. Don't overexert yourself if you suspect carbon monoxide poisoning. Physical activity increases the body's need for oxygen and thus increases the danger of poisoning.
- If you get sick, don't forget to tell your doctor about the possibility of exposure to carbon monoxide.
- Think carefully about your smoking habits. Tobacco, when burned, releases carbon monoxide which reduces the oxygen-carrying ability of the blood, even before any industrial exposure is added.

Two more areas to consider for fuel burning forklifts are:

1. Catalytic Converter

Recent technology has produced the catalytic converter. Once installed on the exhaust system of a fork lift, the converter works by chemically changing the carbon monoxide to relatively harmless carbon dioxide. This device is particularly valuable in situations where large numbers of fork lifts are operated in a limited space, or they can't be removed from service frequently. Catalytic converters can reduce carbon monoxide levels dramatically. Be aware that catalytic converters are not inexpensive, and the catalyst must be replaced periodically to maintain its effectiveness. Also, to work properly, they require high exhaust gas temperatures, so they are not as effective when engines are run cold or for brief periods of time.

2. Carbon Monoxide Controller

This computer operated device detects the level of carbon monoxide in the exhaust pipe and automatically causes the proper air to fuel ration adjustments to be made in the engine. This device not only reduces carbon monoxide emissions, but has the added benefit of better fuel economy.



These control measures should also keep NOx exposures below the permissible exposure limit. It is important to recognize that although adjustment of carburetor balance on fueled engines can reduce CO emissions to safe levels, over-adjustment can actually increase NOx emissions to hazardous levels. It is very important to establish and maintain correct carburetor balance of fueled equipment used indoors.

What about the home?

The Consumer Product Safety Commission (CPSC) recommends installing at least one carbon monoxide detector per household, near the sleeping area. I highly recommend the **Nighthawk** CO Detector which is available almost everywhere. If you have any type of propane or natural gas burning equipment in your home, or a fire place, please consider the purchase of a CO detector. It is a gift of life that you would be giving your family. Don't forget relatives or friends. Many of them may not have heard about CO detectors and how effective they are at saving lives.

In the workplace:

Remember, any fuel burning apparatus will emit carbon monoxide. People think about forklifts and vehicles but tend to forget about the heating system or the hot water heater. I know of many instances where we have installed the Nighthawk CO Detector and found a cracked heat exchanger in a heater or a plugged vent pipe or chimney.

If you suspect carbon monoxide, get out of the area and into the open fresh air. Remove anyone overcome by the gas immediately and give the person artificial respiration. Call for a doctor and continue the artificial respiration until the doctor arrives or the person recovers. Prompt action can make the difference between life and death.

Feel free to contact me if you have any questions.

Michael Dodd

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Vehicle Attendance Requirements

While on the road (§397.5)

A motor vehicle which contains Division 1.1, 1.2, or 1.3 materials (explosives) must be attended **at all times** by its driver or by a qualified representative of the carrier, except when all of the following conditions exist:

- The vehicle is located on the property of the carrier, consignor, consignee, in a safe haven or for a vehicle with 50 pounds or less of Division 1.1, 1.2, or 1.3 material, on a construction or survey site; and
- The lawful bailee of the explosives is aware of the nature of the explosives the vehicle contains and has been instructed in the procedures which must be followed in emergencies; and
- The vehicle is within the bailee's unobstructed field of view or is in a safe haven.

A motor vehicle containing hazardous materials, other than Division 1.1, 1.2, or 1.3 materials, must be attended by its driver when that vehicle is on a public street, highway or the shoulder of any such road. The only exception is when the driver is performing duties necessary to the operation of the vehicle.

What exactly does attended mean?

A motor vehicle is attended when the person in charge is:

- on the vehicle, awake, and not in the sleeper berth or
- within 100 feet of the vehicle and has an unobstructed view of it.

Attendance requirements when loading and unloading cargo tanks

[§177.834\(i\)](#); §177.840(p) and (q)

A cargo tank must be attended **at all times** by a qualified person when it is being loaded or unloaded.

A person is "qualified" if:

- they have been made aware of the nature of the hazardous material, which is to be loaded or unloaded,



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- has been instructed on the procedures to be followed in emergencies, and
- is authorized to move the cargo tank and has the means to do so.

When is a person attending a cargo tank while loading or unloading?

Except for unloading certain liquefied compressed gases, a person "attends" the loading or unloading if, through out the process, the person is:

- alert,
- has an unobstructed view of the cargo tank and delivery hose to the maximum extent practicable, and
- is within 7.62 meters (25 feet) of the cargo tank.

Attendance requirements for unloading liquefied petroleum gas and anhydrous ammonia varies depending on such things as size of the tank, length of unloading time, if it is metered delivery, if emergency discharge control equipment is installed, and if a remote shut-off device is used. See [§177.840\(p\)](#) through (u) for specifics.

Feel free to contact me on any of these items if you have questions.

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Medical, Food & Specialty Gases Bulletin

10/2017

Beverage Carbon Dioxide – ISBT Guideline Revision

ISBT is revising the Bulk CO₂ Guideline. The new publication will be called: “Bulk Carbon Dioxide Quality & Food Safety Guidelines And Analytical Methods And Techniques Reference”. Besides the name change, there are several other content and formatting changes.

The publication has been split into different elements. The elements will be formatted as a bulk quality and food safety guideline, with a series of support addendum.

Addendum 1 = Analytical methods and sampling techniques.

Addendum 2 = General information on the various CO₂ production feed stock types and related specific issues.

Addendum 3 = Safety information on CO₂, with references to industry and regulatory documents.

There are other proposed changes that could affect the testing frequency and methods for bulk suppliers. It is possible that the changes in this publication will also affect CO₂ cylinder fill plants since the ISBT Fountain CO₂ Quality and Food Safety Guideline (for cylinders) references the Bulk Carbon Dioxide Quality & Food Safety Guidelines for test information.

We have reviewed the first draft with GAWDA members who produce bulk CO₂ and have proposed several revisions to be incorporated in the second draft. We will monitor the progress of this guideline and keep you informed.

Keep in mind that only ISBT members have a voice/vote on the document revisions. If bulk beverage carbon dioxide is a significant part of your business, consider joining ISBT: <https://www.bevtech.org/membership-application.asp>

GAWDA Professional Compliance Seminar – Audit Survival

Hold The Date (October 17-19, 2017)... GAWDA Professional Compliance Seminar at Weldcoa, Aurora, IL. This seminar focuses on surviving DOT/FDA audits and Food/Beverage Gas Compliance. [Click here for more information.](#)



Medical, Food & Specialty Gases Bulletin



October Medical Gas Roundtable (10/27/2017) – CGMP - High Pressure Prefill Inspection and Filling High Pressure Cylinders

These GAWDA Medical Gas roundtables are excellent sources of CGMP training and the latest industry compliance news. In October we will be discussing basic procedures to conduct a prefill inspection and how to fill medical high-pressure cylinders.

For your information, we are also conducting the following additional webinars in October:

- *Specialty Gas Operations* - Fuel/Oxidizer Mixtures - Alternative Approaches – we recommend that you purchase ISO 10156 and CGA P-58 prior to attending the seminar.
- *Food Gas Roundtable* – Part 117 Subpart D & E - Modified Requirements and Qualified Facility Exemption

These and other webinars are available as a streaming recording at a time convenient to you. If you are unable to view the webinar live, just let us know and we will send you the link to the recording. If you would like to receive invitations to the training webinars, just send an email to jodie@asteriskllc.com.



Medical, Food & Specialty Gases Bulletin

Micro-audit

This section of the Medical Gas Bulletin lists small steps you can take each month to improve your medical gas management system. These steps are not designed to be a full audit, but rather small steps to sample your compliance.

For this month, simply do these items:

1. Filling Procedures – Copy the fill procedure from the SOPs and watch a cylinder filling operator actually perform the procedure. This is the same technique the FDA uses to see if we are following our fill procedures.
2. Documented Training – Complete a training record for the cylinder filling operator that was observed. Attach a copy of the completed SOP to the training record.

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