



# TOSHA INSTRUCTION

TENNESSEE DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY & HEALTH

**DIRECTIVE NUMBER:** CPL-TN 04-00-001

(CPL-TN 2.501 with changes)

**EFFECTIVE DATE:** September 16, 1999

**SUBJECT:** Local Emphasis Program - Carbon Monoxide

**TO:** TOSHA Personnel

**FROM:** Robert B. Cooper, Chief, Standards & Procedures

**THRU:** John D. Winkler, Administrator

**SUBJECT:** Local Emphasis Program – Carbon Monoxide

**DATE:** September 16, 1999

- A. **PURPOSE:** This instruction establishes a Local Emphasis Program (LEP) for Carbon Monoxide (CO). This LEP is established to reduce employee exposure and eliminate deaths from carbon monoxide throughout the State of Tennessee.
- B. **DOCUMENTS REFERENCED:**
1. TOSHA Field Operations Manual (FOM), Tennessee Occupational Safety and Health Plan – Part V, (March 29, 1996).
  2. OSHA Instruction ADM 1-1.31, Chapter XXV (September 20, 1993), Direct Reading Report, OSHA 93.
  3. OSHA Instruction ADM 1-1.29, Chapter XXIV (November, 1996), Direct Reading Report, Consultation 93.
  4. OSHA Instruction TED 1-0.15A; January 20, 1999; OSHA Technical Manual (Adopted by TOSHA Instruction TED 1-0.15A).
- C. **BACKGROUND:**
1. During the first three quarters of reporting year 1999 Tennessee experienced a fatality and a catastrophe (multiple hospitalization incident) attributed to over exposure to carbon monoxide. Those two (2) incidents and the fall season of the year when heaters are started for the first time in six (6) to eight (8) months without proper maintenance and doors are closed because of cooler weather led to the initiation of the LEP established by this instruction.

2. The signs and symptoms of acute exposure to carbon monoxide may include headache, flushing, nausea, vertigo, weakness, irritability, unconsciousness, and, in persons with pre-existing heart disease and atherosclerosis, chest pain and leg pain. Repeated bouts of carbon monoxide poisoning may cause persistent signs and symptoms, such as weight loss (anorexic), headache, fatigue (lassitude), dizziness, and inability to coordinate voluntary muscle movement (ataxia).
3. Carbon monoxide is an asphyxiant to humans. Inhalation of carbon monoxide prevents the blood from carrying sufficient oxygen to the tissues of the body. Carbon monoxide combines reversibly with hemoglobin to form carboxyhemoglobin. Persons who have other conditions such as hyperthyroidism, obesity, bronchitis, asthma, preexisting heart disease, and alcoholism are at additional risk.
4. There is a significant reproductive risk involved with carbon monoxide. An American Journal of Industrial Medicine article quotes two studies showing that acute carbon monoxide exposures that were non-lethal to the mother were associated with fetal loss. Carbon monoxide can be transported across the placental barrier and the exposure constitutes a special risk to the fetus. The elderly as also believed to be more susceptible to carbon monoxide poisoning.
5. Large amounts of carbon monoxide can kill in minutes. The more carbon monoxide in the air and the longer you are exposed to it, the greater the danger. Any one or more of the following symptoms can signal carbon monoxide poisoning: headaches, tightness across the chest, nausea, drowsiness, inattention or fatigue. As the amount of carbon monoxide in the air increases, more serious symptoms develop such as lack of coordination, weakness and confusion. The poisoning can be reversed if caught in time. But even if you recover, acute poisoning may result in permanent damage to the parts of your body which require a lot of oxygen, such as the heart and brain.

D. INSPECTION SITE IDENTIFICATION:

1. All health and safety compliance personnel shall be instructed to be diligent in their efforts to identify worksites where gasoline and propane operated equipment are used and there is a potential for high levels of CO. Every observation of such operations shall be handled as follows.
  - a. Referrals: Regardless of whether or not a violation is observed, whenever a CSHO measures, observes or receives any other notice of an operation where high carbon monoxide levels are possible (including complaints, other government agency referrals, and reports from members of the public) the CSHO shall:

- (1) Make note of the equipment used and work operation, including any apparent symptoms of CO exposure (headaches, nausea, etc).
    - (2) Note the location of the work area, worksite and the company name and address, if known.
    - (3) Contact the Area Office Supervisor for a decision as to whether an intervention or inspection is required.
  - (b) All worksites where high carbon monoxide levels are possible that are brought to the attention of the Area Supervisors shall be inspected as follows:
    - (1) If the worksite has had a comprehensive inspection within the preceding two (2) years, the results of the inspection shall be considered along with the current observations of the CSHO.
    - (2) If the worksite has not been inspected or has not been inspected within the preceding two (2) years, the Area Office Supervisor will schedule an inspection. The Area Office Supervisor has the option to not schedule an inspection where circumstances indicate that an inspection should not be conducted.
  - (c) Formal complaints, safety and health agency referrals and media reports shall be scheduled as unprogrammed inspections and conducted as described in the relevant chapters of the Field Operations Manual (FOM). Where information of previous interventions indicates no need to inspect, this should be documented in the case file.
2. The discovery of these worksites may be the result of a specific search to find this type of operation, at the discretion of the Administrator. Identifications normally will be those which occur during the course of inspections.
  3. Documentation of the events leading up to the observation or the reporting of the worksite shall be maintained by the Area Office in case of denial of entry.
  4. When an inspection is not conducted because consent has not been obtained, a warrant normally shall be sought in accordance with the current procedure for handling such cases.

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5. All health and safety consultants shall be instructed to be diligent in their efforts to identify worksites where gasoline and propane operated equipment is used and there is a potential for high levels of CO. Every observation of such operations shall be handled as follows:

(a) Referrals: Regardless of whether or not a violation is observed, whenever a Safety Consultant measures, observes or receives any other notice of an operation where high carbon monoxide levels are possible the consultant shall:

(1) Make note of the equipment used and work operation, including any apparent symptoms of CO exposure (headaches, nausea, etc).

(2) Note the location of the work area, worksite and the company name and address, if known.

(3) Notify their supervisor.

(b) All worksites where high carbon monoxide levels are possible that are brought to the attention of the Supervisors shall be inspected as follows:

(1) If the worksite has requested a comprehensive safety and health visit, the CO levels will be noted in the narrative and the inspection will be handled in the usual manner.

(2) If the worksite has not requested a health visit the consultant shall advise the customer of:

(i) The Local Emphasis Program and;

(ii) The seriousness of the hazard and recommended that the customer request a health survey. If the customer does not agree to a health survey the consultant will remind the customer of our obligation to report on all serious hazards and refer the matter to the Supervisor. The Supervisor in consultation with the Project manager will determine the necessity to refer the matter to compliance.

E. INSPECTION PROCEDURES: The following procedures shall be followed during all inspections where potential carbon monoxide exposure exists.

1. Inspections shall be conducted in accordance with the FOM.

2. In all Safety and Health opening conferences the employer will be informed of the Carbon Monoxide LEP. The scope of all inspections will include an evaluation of sources of CO and the employer will be informed of this during the opening conference. The CSHO or Consultant can expand the scope his/her investigation to operations with sources of CO in workplaces where a partial inspection is being conducted.
3. All worksites inspected in the State of Tennessee will be evaluated for potential CO exposures. Each Safety case file will document at least the potential for CO exposure. Each Health case file will document the measurement of the CO exposure. At a minimum the narrative of all Safety and Health case files will state an evaluation of the possible CO exposures. Where health inspections are conducted a measurement of the CO levels in the plant must be made and included in the report.
4. Carbon monoxide measurements shall be taken in accordance with OSHA Technical Manual.
5. Compliance Officer and Consultant Information for Carbon Monoxide Special Health Emphasis Program

Are there sources of carbon monoxide present such as:

Lift trucks that run on gasoline	Lift trucks that run on propane
Furnaces fueled by wood or gas	Charcoal grills
Room heaters fueled by wood, natural gas, or kerosene	
Autos, ambulances, trucks fueled by gasoline which run inside the facility	
Water heaters fueled by natural gas	Fireplaces
Portable generators run by gasoline	Wood burning stoves
Small gasoline-powered engines	Melting or pouring metals
Small gasoline-powered tools such as concrete saws	
Floor-finishing equipment fueled by gasoline	
Oil-lubricated Compressors used for breathing air	
Explosives used in confined spaces	Fire Brigades
Cascade systems used to fill breathing-air cylinders	

6. Information which must be recorded in the case file, either on the TOSHA-1A or the OSHA-1B/OSHA-1B(IH):
  - List the equipment...type, description, location
  - Interview the operator...determine exposure...how long a shift?
  - Ask the HAZCOM seven questions and record the answers
  - Document the levels present with a CO detector tube.
  - What type of ventilation is present, if any?
  - Are there carbon monoxide (CO) warning signs posted?

- Ask an employee to show you the MSDS for carbon monoxide. If he/she cannot, record that fact and ask several more employees.
- Look at the chemical list...ensure carbon monoxide is listed.

**If CO levels are close to 35 ppm, discuss making a referral with the IH supervisor.**

7. Employers will be strongly encouraged to eliminate CO exposures and reduce those exposures as far as practical where elimination is not possible. Those employers will be encouraged to report the reductions to the Area Supervisor.
  8. All carbon monoxide reductions during the inspection will be documented. The reductions must be reported by memo to the Operations Manager in ppm. The reductions must be measured where changes were made between the initial walkaround and final carbon monoxide monitoring or after final abatement. These reductions can include: **administrative controls** or **engineering controls** or **both**.
  9. A handout developed by the Training Section which describes carbon monoxide and the LEP will be provided all employers on each inspection. The handout is included in Appendix A.
- F. RECORDING IN THE IMIS: Safety inspections which result in a referral to the Health section and Health inspections where CO exposures are either eliminated, reduced or measured must be identified so they can be tracked. The following guidelines shall be applied when recording inspections conducted under this LEP or other inspections of worksites where high levels of carbon monoxide are measured:
1. Current instructions for completing the appropriate inspection classification boxes (Items 25(c) on the Inspection Report, OSHA-1Form.)
    - a. The OSHA-1 for any inspection under this LEP shall be recorded under "Local Emphasis Program" (Item 25c.). Record "CARBMNOX" in the field in Item 25(c). (NOTE: The entry is made with ALL CAPS.)
    - b. The OSHA-1 for any programmed inspection scheduled under this Local Emphasis Program shall be marked "Planned" (Item 24h.) and "Local Emphasis Program" (Item25c.) Record "CARBMNOX" in the field in item 25c.
    - c. The OSHA-1 for any unprogrammed inspection where high carbon monoxide levels are found shall be marked as unprogrammed (Item 24 a. through g. as appropriate). In addition it shall be marked

“Local Emphasis Program” (Item 25c.). Record “CARBMNOX” in the field in item 25c.

2. Current instructions for completing the appropriate inspection classification boxes Item 29 on the Visit Form, Consultation 30 Form.

The 30 Form for any inspection under this LEP shall be recorded under “Local Emphasis Program” (Item 29). Record “CARBMNOX” in the field in Item 29. (NOTE: The entry is made with ALL CAPS)

3. Current instructions for completing the Direct Reading Form are on the OSHA-93 Form.

- a. The CSHO will complete the Direct Reading Form (93) in accordance with the IMIS Manual.

- b. The Area Office Secretary will copy all OSHA-93's and send them with the inspection case file to the Central Office Secretary.

- c. The Health Secretary will batch the OSHA-93's to the Operations Manager.

- d. The Operations manager will enter the Direct reading Form (93) into the NCR Database.

- e. The CSHO will send a memorandum to the Central office which indicates the parts per million (ppm) reductions in carbon monoxide exposures through the use of administrative controls or engineering controls. A copy of a sample memo is included in Appendix B. The memo will contain at least the following information:

- (1) CSHO-ID
- (2) Reporting-ID
- (3) Inspection Number
- (4) Job title of worker
- (5) CO level before reduction
- (6) CO level after reduction
- (7) Type of CO Control (Use of or proper use of PPE, Administrative or Engineering Control)

- f. That information will be recorded by the Operations Manager in the tracking database.

4. Current Instructions for completing the Direct Reading Form are on the Consultation-93 Form:

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- a. The Consultant will complete the Direct Reading Form 93 in accordance with the IMIS Manual.
  - b. The Consultant will enter the Consultation-93 into the NCR Database.
  - c. The Consultant will send a memorandum to the IH Consultation Supervisor which indicates the parts per million (ppm) reductions in carbon Monoxide exposures through the use of administrative controls or engineering controls. A copy of a sample memo is included in Appendix B. The memo will contain at least the following information:
    - (1) CSHO-ID
    - (2) Reporting-ID
    - (3) Inspection Number
    - (4) Job title of worker
    - (5) CO level before reduction
    - (6) CO level after reduction
    - (7) Type of Control (Use of or proper use of PPE, Administrative or Engineering Control)
  - d. That information will be sent to and recorded by the Operations Manager in the Tracking database.
5. Nonformal complaints, other government agency referrals and reports from the public reporting potential hazards related to carbon monoxide shall be recorded on an OSHA-7, Notice of Alleged Safety or Health Hazards, or an OSHA-90, Referral Report, if appropriate, in accordance with current IMIS instructions. They shall be recorded as unprogrammed inspections under the LEP.

**G. FULL-SERVICE PROGRAM SUPPORT:**

1. The Training Section will develop outreach programs which will support the enforcement effort:
  - a. to increase the coverage of the LEP, Safety Compliance Officers will be trained in the identification of work areas, work operations and work places where there is a potential for high carbon monoxide levels to be created.
  - b. Information which describes the Local Emphasis Program on carbon monoxide will be included in each training session that is taught by Tennessee OSHA's Training Staff.

- c. Newspapers in the major cities in the State of Tennessee will be provided with articles and information to periodically encourage the publishing of the Notice to employers about the concentration of Tennessee OSHA's attention on potential hazards of carbon monoxide exposure in the workplace.
  - d. Handouts which describe the hazards of carbon monoxide, what Tennessee OSHA standards require and outline the LEP will be developed.
  - e. A list of companies which rent gas-operated compressors has been developed and these companies will be contacted by mail. The rental companies will be mailed a letter of explanation and an informational packet on the hazards of CO (See Appendix C). The packet will contain the following:
    - (1) NIOSH Gas Engine Alert
    - (2) Tennessee OSHA CO alert
    - (3) Carbon Monoxide Fact Sheet
    - (4) CO Sign
    - (5) LEP handout
  - f. The Compliance web-page will have a special section devoted to Local Emphasis programs. This should provide the public access to assistance in correcting CO hazards or detecting potential problems through e-mail or information.
2. The Consultation Sections will develop outreach programs which will supplement the enforcement effort:
- a. Consultation Resources will conduct Correction Assistance Cited visits where the employer has been cited for violations of the Tennessee OSHA standards and has requested in writing help to correct those violations.
  - b. The Consultation web-page provides the public access to assistance in correction hazards through e-mail or requests for service.
  - c. Consultation Services will report reductions in carbon monoxide levels by memo to the Operations Manager in parts per million (ppm). The reductions must be measured where changes were made between the initial walkaround and final carbon monoxide monitoring or after final abatement. These reductions can include: **administrative controls** or **engineering controls** or **both**.

3. Compliance Officer and Consultant Resources – The following sites may be used as sources of information:
  - a. American Industrial Hygiene Association (AIHA)  
<http://www.aiha.org>  
click on “Consumer Information”  
click on “Operation Outreach”  
click on “Consumer concerns addressed in New AIHA Brochure on Carbon Monoxide and Ionizing Radiation”  
click on “Carbon Monoxide-the Silent Cold Weather Killer” at the bottom of the page
  - b. NIOSH alert-Preventing Carbon Monoxide Poisoning from Small Gasoline-Powered Engines and Tools DHHS (NIOSH) Publication No. 96-118, or  
  
call 1-800-35-NIOSH and ask for Publication No. 96-118 or  
  
fax a request for this publication number to 513-533-8573, or  
  
write to NIOSH at:  
  
**Publications Dissemination, EID  
National Institute for Occupational Safety and Health  
4676 Columbia Parkway  
Cincinnati, Ohio 45226-1998**
  - c. Occupational Safety and Health Administration (OSHA)  
<http://www.osha.gov>  
click on “search”  
enter “carbon monoxide”  
scroll down to “01/01/92-Carbon Monoxide”
  - d. OSHA Standards for General Industry:  
29 CFR 1910.1000 Table Z-1-A and 29 CFR 1910.1200
  - e. OSHA Standards for Construction:  
29 CFR 1926.55 and 29 CFR 1926.59

H. EVALUATION:

1. Compliance and Consultation data will be evaluated monthly.
2. An evaluation report will be completed monthly by the Operations Manager. This report will be provided to the Administrator and Managers.

3. An annual evaluation will be performed in August 2000 to evaluate the LEP for its effectiveness, impact upon the workplace, and its continuation in FY2001.
- I. ACTION: Managers and Supervisors shall insure that the procedures set forth in this instruction for the TOSHA LEP on Carbon Monoxide are followed during interventions where there are sources of incomplete combustion.
- J. EFFECTIVE/EXPIRATION DATES: This instruction is effective October 1, 1999 and shall remain in effect until cancelled or superseded.



## APPENDIX A

### Tennessee Occupational Safety & Health Administration (TOSHA)

# **SPECIAL EMPHASIS PROGRAM FOR CARBON MONOXIDE (CO)**

The Tennessee Occupational Safety and Health Administration (TOSHA) HAS INSTITUTED A SPECIAL EMPHASIS PROGRAM FOR Carbon Monoxide (CO). This was done to focus state-wide attention on the hazard of carbon monoxide, to reduce employee exposure to carbon monoxide and eliminate deaths from carbon monoxide.

Carbon monoxide, a colorless, tasteless gas, is one of the most common industrial hazards. Mild poisoning from the gas can cause symptoms such as nausea, dizziness or headaches and severe poisoning can result in brain or heart damage and even death. The poisonous gas is created by incomplete burning of any material containing carbon such as gasoline, natural gas, oil, kerosene, propane, charcoal or wood. One of the most common sources of carbon monoxide and resulting exposure in the workplace is the internal combustion engine used to power industrial trucks (fork-lifts). Open gas heaters are another common source of carbon monoxide. It is also produced in quantity in forges, blast furnaces and coke ovens.

#### **Suggestions for employers to reduce or eliminate exposure:**

- Install an effective ventilation system to remove carbon monoxide.
- Maintain fuel burning appliances and equipment in good working order (do preventive maintenance).
- Consider switching from fossil fuel-powered to battery-powered equipment.
- Ensure that air compressors used to supply breathing air are in proper working order and supply Grade D air.
- Install carbon monoxide monitors or alarms or regularly test air in areas when and where carbon monoxide is generated.
- Instruct workers in the hazards, signs and symptoms of carbon monoxide exposure.
- Provide approved respirators for emergency use. Train employees to use them.

During all health and safety inspections conducted on or after October 1, 1999, the TOSHA compliance officer or consultant will make the employer aware of the carbon monoxide special emphasis program and measure the levels of carbon monoxide whenever there is reason to believe it may be present in the workplace. Interventions will be made where there are measurable levels of carbon monoxide.

**TOSHA Standards for Carbon Monoxide:**

The TOSHA standards for most air contaminants which may be present in general industrial establishments are more stringent than those of the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA). They are the same as OSHA's for the construction industry, however. Also, the Tennessee Hazardous Chemical Right-to-Know Law and regulations promulgated pursuant thereto set additional requirements.

TOSHA standards and regulations require that employers:

- Ensure that employee exposures in general industry are kept below:
  - 35 parts per million of air (ppm) or 40 milligrams per cubic meter (mg/M<sup>3</sup>) for an 8-hour time weighted average (TWA).
  - 200 ppm for a short-term limit (5 minutes).
  - 1,500 ppm for an instantaneous limit.
- Ensure that employee exposures and kept below 50 ppm for an 8-hour TWA in construction.
- If there is a potential for exposure to carbon monoxide:
  - Include carbon monoxide in their Hazard Communication Program inventory list of hazardous chemicals
  - Have a material safety data sheet (MSDS) for carbon monoxide available for employees and include information on carbon monoxide in their hazard communication training, both initial and annual refresher). See Appendix D for a generic fact sheet.
  - Post a carbon monoxide warning sign in areas where there is a potential for exposure to carbon monoxide. See Appendix C for a sample sign.

**For more information and publications on carbon monoxide contact your local Tennessee OSHA office listed below or telephone 1-800-249-8510.**

Chattanooga	(423) 634-6424	Knoxville	(423) 594-618
Jackson	(901) 423-5641	Memphis	(901) 543-7259
Kingsport	(423) 224-2042	Nashville	(615) 741-3161

APPENDIX B

SAMPLE CO/NOISE INTERVENTION REPORT

STATE OF TENNESSEE  
DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT  
**OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION**  
ANDREW JOHNSON TOWER – 3<sup>RD</sup> FLOOR  
NASHVILLE, TENNESSEE 37243-0659

MEMORANDUM

**TO:** Jim S. Cothron, Manager

**FROM:**

**SUBJECT:** CO/Noise Reductions

**DATE:**

REPORTING ID: \_\_\_\_\_ INSPECTION/VISIT NO. \_\_\_\_\_

CSHO NO. \_\_\_\_\_ SIC Code: \_\_\_\_\_ Circle One: CO Noise

Job Title/Location	Shifts	Number of Employees	Reductions dBA/ppm	
			Before	After
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Describe in detail how the reduction was accomplished (work practices, administrative controls, engineering controls, maintenance, or ventilation for CO or hearing protection NRR for noise)?

(Over)



APPENDIX 3

**SAMPLE WARNING SIGN FOR CARBON MONOXIDE**

**WARNING**

**CARBON  
MONOXIDE**

A colorless, odorless toxic gas produced from incomplete combustion of gas, oil, kerosene and wood.

**May cause dizziness, nausea, or headache.**

**Excessive exposure may cause unconsciousness and death.**

**May aggravate heart and artery diseases.**

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Appendix D

**OSHA Fact Sheets**

**01/01/1992 – Carbon Monoxide Poisoning**

The OSHA Fact Sheet on Carbon Monoxide Poisoning is not reproduced as part of this instruction. Obtain it as necessary from:

[http://www.osha-slc.gov/OshDoc/Fact\\_data/FSNO92-11.html](http://www.osha-slc.gov/OshDoc/Fact_data/FSNO92-11.html)

Compliance officers should print and/or reproduce the fact sheet as necessary to provide it to those employers without internet access.

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APPENDIX E

# Carbon Monoxide ALERT!



There have been two fatalities in Tennessee in recent history where compressors overheated producing extremely high levels of carbon monoxide. We strongly recommend that non-oil lubricated air compressors be used to supply breathing air to employees who use supplied-air respirators. If an oil-lubricated compressor is used, **BE SURE** that:

- The compressor has a high-temperature alarm or a carbon monoxide alarm, or both
- If only a high temperature alarm is used, the air from the compressor is frequently tested for carbon monoxide to insure that it meets the specifications for Grade D air. (We are continuing to review information on this subject to determine how often the carbon monoxide levels must be tested in breathing air to meet the requirements for "frequent" testing.)

In addition, when using any type of compressor to supply breathing air (oil-lubricated or non-oil-lubricated), be **BE SURE** that:

- The compressor is a breathing air-type compressor.
- The air intake is located to avoid entry of contaminated air into the compressor.
- The moisture content is minimized so that the dew point at 1 atmosphere pressure is 10 degrees below the ambient temperature.
- In-line sorbent beds and filters are installed to further assure air quality. Be sure that "air filters" on breathing air compressors do not remove or detect carbon monoxide. Filters must be maintained and replaced or refurbished periodically following the manufacturer's instructions.
- A tag is located at the compressor containing the most recent filter change date and the signature of the person authorized to perform the change.
- Hose couplings are incompatible with outlets and couplings for other non-breathable air (i.e., nitrogen).
- No asphyxiating substances are introduced into breathing air lines.

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- The air supplied by the compressor meets the criteria for Type 1-Grande D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, which are as follows:

Oxygen content	19.5-23.5%
Hydrocarbon content	5 mg/m <sup>3</sup> or less
Carbon monoxide	10 ppm or less
Carbon dioxide	1,000 ppm or less
Lack of noticeable odor.	

- For IDLH atmospheres, the supplied-air respirator wearer also has an auxiliary self-contained bottle of air to be used for escape if the air compressor fails.

Adhering to these rules and recommendations will go a long way toward ensuring that the job will get done with no tragic consequences to you or your employees!

APPENDIX F

NIOSH •CDPHE •CPSE •OSHA •EPA

# ***A L E R T***

## **Preventing Carbon Monoxide Poisoning from Small Gasoline-Powered Engines and Tools**

The above titled publication [DHHS (NIOSH) Publication No. 96-118] is not reproduced as part of this instruction. Single copies of the alert are free and may be obtained as necessary from:

**Publications Dissemination, EID  
National Institute for Occupational Safety and Health  
4676 Columbia Parkway  
Cincinnati, OH 45226**

**Fax number: (513) 533-8573  
Phone number: 1-800-35-NIOSH (1-800-356-4674)  
E-mail: <http://www.pubstaft@niosdt.em.cdc.gov>**

Compliance officers should print and/or reproduce the fact sheet as necessary to provide it to those employers without internet access.