

Safety Awareness Training Program

Developed for:

"Eagle Solutions LLC."

Introduction

This "safety Awareness Training Program" has been developed to encourage safe working habits of those using engine-powered equipment fueled by Propane gas. This includes not only floor care equipment manufactured by *Eagle Solutions LLC*. But may be applied to all machines employing small engines fueled by propane gas including small generators, pressure washers cement finishing machines etc. that are used inside buildings or enclosed spaces.

Please be reminded that this program is *not* designed to teach you how to maintain floors, but it is designed to instruct you how to avoid incidents brought on by unsafe actions, poor maintenance, and the lack of accurate knowledge.

Program Outline

1. A brief introduction explaining the purpose of the program.
2. A computer slide presentation of the safe operation and handling of propane powered floor machines.
3. A written examination. (this will be a "multiple choice" test)

After the completion of the "*Operator Safety Awareness review*", the document should be forwarded to:

Eagle Solutions LLC.
Safety Awareness Department
P.O. Box 443
Adairsville, GA 30103

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This publication is designed to provide accurate and authoritative information in regard to the subject matter covered. It is provided with the understanding that the publisher is not engaged in rendering legal or other professional services.

Before We Begin Please Consider These Important Points!

- The safety of yourself and others working around you is **your** responsibility!
- Only ***Authorized*** persons are allowed to operate propane powered machines.
- Read the operation manual shipped with your machine and understand the basic operation of your particular machine.
- Preventative maintenance (PM) is the responsibility of the operator.
- Never alter or adjust the fuel system of a propane engine. A trained service technician using the proper emissions testing equipment should only do it.
- Regular maintenance by trained service technicians will insure long life and satisfactory performance from your propane-powered machine. It will also prevent serious injury to you and others.

Purpose of the Safety Awareness Training Program

The purpose of the *Safety Awareness Training Program* is to insure that operators are trained to operate the equipment safely and in a professional manner.

Being trained as an operator of propane powered floor maintenance machines, while not generally required, is a prestigious accomplishment and demonstrates your concern for safety. Those you work for and contract with will understand that you are aware of the safe handling and proper storage of Propane Gas and the precautions needed when operating these machines to insure safety for all involved.

It also demonstrates to others that you are aware, and understand, the codes and standards established by the many regulatory agencies effecting this industry.

Eagle Solutions LLC. is providing this program for you. We want you to enjoy operating your propane powered floor machines safely and without incident

Regulatory compliance will be covered in the slide presentation of the program but we also would like you to have a "Hard Copy" for your personal reference. Please read these carefully.

Understanding Regulatory Compliance

NFPA

NFPA 58 1-5 (1995 edition) Qualification of Personnel:

"In the interest of safety, all persons employed in handling LP-Gases shall be trained in the proper handling and operating procedures, which the employer shall document".

NOTE:

The recommendation of proper training for operators of propane powered machines goes without saying and is endorsed by *Eagle Solutions LLC*. But this NFPA standard does not apply to operators of propane powered equipment. It is directed toward employees in the propane industry and not to end-users.

NFPA 58 8-1.4 "In the interest of safety, each person engaged in installing, repairing, filling, or otherwise servicing an LP-Gas engine fuel system shall be properly trained in the necessary procedures.

NOTE:

This standard **DOES** apply to Service Technicians working on propane powered machines. *Although NFPA does not have enforcement responsibilities*, Some States and Cities adopt NFPA 58 into their codes and laws *requiring* proper training and even some license LP-Gas Servicemen.

OSHA

OSHA: (Occupational Safety and Health Administration)

OSHA is a Federal agency responsible to set and enforce regulations effecting the working environment and practices of persons employed. OSHA is a division of the Department of Labor.

OSHA Standards cover every aspect of the workplace, most of which does not effect those involved in floor maintenance. The two standards that do effect us are:

1. **Material Safety Data Sheets: (MSDS)** it is necessary to posts a MSDS sheet for propane gas in the building in which you are operating a powered floor machine. These can be acquired from your supplier of propane. Read it and understand it. Before you start to work ask the store manager if an MSDS for propane is in his file. If not then you should give him one to file! Some OSHA inspectors may ask to see it.

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(OSHA Standards continued)

2. **OSHA Standards for Indoor Air Quality:** The Permissible Exposure Level (PEL) for air contaminants are listed in Table-Z-1 of OSHA standards. The one constituent we are most concerned with is Carbon Monoxide (CO). Excessive exposure to CO may cause carbon monoxide poisoning.

OSHA PEL for CO is 50-PPM TWA 8 hours with a ceiling of 200 PPM.

Simply put, you should not ever be exposed too more than 200-PPM of CO. The environment you work in for an 8-hour period should not exceed 50 PPM CO.

OSHA requires that the air samples for PEL is to be taken "*from the breathing zone*" of the operator or others in the area.

TWA: The Time Weighted Average of a contaminant, in this case CO, is determined in the following manner.

$$E=C \times T \div 8$$

E is the equivalent exposure in PPM for the working shift

C is the concentration in PPM during the working shift

T is the duration in hours of the exposure.

The value of E shall not exceed the 8-hour Time Weighted Average specified in the Z-1 table for the substance involved, (50 PPM for CO.)

EXAMPLE: An air sample was taken in the breathing zone of an operator who using propane powered floor machine: The air sample showed 75-PPM CO. The operator and/or others would be exposed for 3 hours. For the rest of the day they had no exposure to CO.

Using the formula above:

$$C=75\text{-PPM, } T=3 \text{ hours}$$

$75 \times 3 \div 8 = 28.1$ –PPM. Far below the 50 PPM OSHA PEL.

EPA

EPA: (The environmental Protection Agency) is a federal agency charged with the responsibility of protecting the environment in which we live. They are concerned with pollution of many sorts that may effect our environment. Included is "Air Pollution". Generally this is not *indoor air pollution*. Their standards are directed toward *outdoor air pollution*. That is pollution from the exhaust of engine powered equipment used outdoors, like lawn mowers, chain saws, generators etc. The standards set by EPA for toxic emissions are to liberal to be considered safe indoors.

EPA. Also requires certification of engines sold in the US regarding emissions generated by the engines. Initially the engine manufacturer must provide this certification, but when machine manufacturers convert the fuel system to propane from gasoline they are considered *the manufacturer* and must provide additional certification for emissions. A certification tag must be attached to the engine, or machine showing it has been certified and registered with EPA.

DOT

DOT: (Department of Transportation) Is also a federal organization. It has established regulations for safety of fuel cylinders and pressure vessels that may be transported within the boundaries of the US. These include those used on propane powered floor machines. These regulations include the construction, transportation, filling, and use of all these pressure vessels. It also requires "re-qualification" of these fuel cylinders after 12 years of service. The attached collar on the top of the cylinder contains DOT cylinder markings that include the Date of Manufacturer, Tare Weight, and Specification Identification. The Cylinder used on Propane powered floor machines is **DOT 4E240**. No other cylinder is authorized to be used for this service. **Propane cylinders used on barbecues are not safe for this service,**

INTRODUCTION TO VIDEO PRESENTATION

Please make yourself comfortable. The slide presentation will take approximately 30 minutes. While you are viewing this Computer slide presentation please take some notes, especially if you have some questions or if there is something you do not understand.

If you are viewing this presentation alone you may include your list of questions with the completed test document and mail them to the address shown on the first page of this manual.

It may be that you are not new to the operation of propane powered floor machines. We request that you be patient with us and sit through the entire slide presentation. It may be that something new has been developed in recent times that will be of help to you. Also your input from your own experience is valuable. Please share them with us.

Thank you, now *Let us start the slide show.*