



EA Engineering, Science,
and Technology, Inc., PBC



BREAKOUT Training June 24, 2016

Petroleum Storage Tank Labeling NFPA 704 vs. HazCom 2012



Who are your trainers today?

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Objective of Breakout Session

- Provide a high-level introduction to petroleum storage tank labeling for facility owners/operators and environmental managers.
- Review overlap between hazard communication standards (NFPA 704 and HazCom 2012)



Agenda

- General Labeling Discussion
- Petroleum Equipment Institute (PEI) Labeling Requirements
- American Petroleum Institute (API) Labeling Requirements
- National Fire Protection Association (NFPA) Labeling Requirements
- Occupational, Safety, and Health Administration (OSHA) Labeling Requirements
- NFPA 704 and HazCom 2012 Discussion
- What should you do next?

Codes and Regulations for Petroleum Storage Tanks

- ASTs vs. USTs
- Fire Codes
 - ▶ What type of tank can be used in a certain location (and distances to buildings)
 - ▶ Safety valves and equipment
- National Electric Codes
 - ▶ Electrical classifications
 - ▶ Grounding and bonding
- Environmental Regulations
 - ▶ Need for adequate spill control
 - ▶ SPCC Rule (40 CFR 112)
 - ▶ Federal UST regulations (40 CFR 280)
 - ▶ State and local regulations
- OSHA Hazard Communication Standard

Why Should I Label my Tank?

- Proper labeling includes the following:
 - Identification of contents, tank volume, hazards and warning that ensure the correct fuel is delivered to the appropriate tank
 - Equipment is filled with the proper fuel
 - Dyed and undyed fuels are used in the appropriate vehicles
 - Emergency responders can easily determine what product they are dealing with when responding to an emergency
 - Labels should can be affixed to storage buildings, shipping containers, 55-gallon drums, ASTs, USTs, and elsewhere.



What Labeling Requirements Should I Follow?

- 40 CFR 112 - “SPCC Rule”
- PEI RP 100/200 – Recommended practices for installation of USTs and ASTs, respectively
- API RP 1637 - Using the API Color-Symbol System to Mark Equipment and Vehicles for Product Identification at Gasoline Dispensing Facilities and Distribution Terminals
- NFPA 30/30A – Flammable and Combustible Liquids
- NFPA 704 – Identification of the Hazards of Materials for Emergency Response
- 29 CFR 1910.1200 – OSHA Hazard Communication Standard (HCS)

Labeling Requirements – “SPCC Rule” 40 CFR 112

- Use a distinct identifier.
- Indicate the maximum capacity in gallons.
- Indicate the contents stored.
- Construction standard and year of installation. If the storage tank has been refabricated, the latest refabrication year should also be indicated.



Labeling Requirements – PEI Recommended Practices

- Driver Warnings
 - Checklist of safety procedures for the facility
- Loading Procedures
 - Instructions for the delivery operator on filling the tank
- Overfill Alarm
 - If the tank is equipped with an overfill alarm, post a sign indicating what the driver must do if the alarm is activated.
- Safety and Accident/Incident Reporting
 - A sign must be posted noting all emergency spill contact phone numbers in addition to immediate clean-up procedures.



Labeling Requirements – API RP 1637

- This RP describes a system for marking equipment used to store and handle bulk petroleum, alcohol-blended, and biodiesel products.
- The purpose is to identify product transfer points for tank-truck loading and unloading at distribution terminals and retail outlets, and to prevent errors in product handling.

GASOLINES		DISTILLATES		
	Unleaded	Ultra Low Sulfur	Low Sulfur	High Sulfur
High grade			 Diesel	
Middle grade			 No. 1 Fuel Oil	
Low grade			 No. 2 Fuel Oil	
			 Kerosene	
ALCOHOL-BASED FUELS		BIODIESEL		
	 E85	Note: See 2.5.1 for specific labeling requirements		 B2
		Note: See 2.4.1 for specific labeling requirements		
USED OIL	OBSERVATION OR MONITORING WELL		VAPOR RECOVERY	
				

Figure 1—Equipment Marking Color-Symbol System

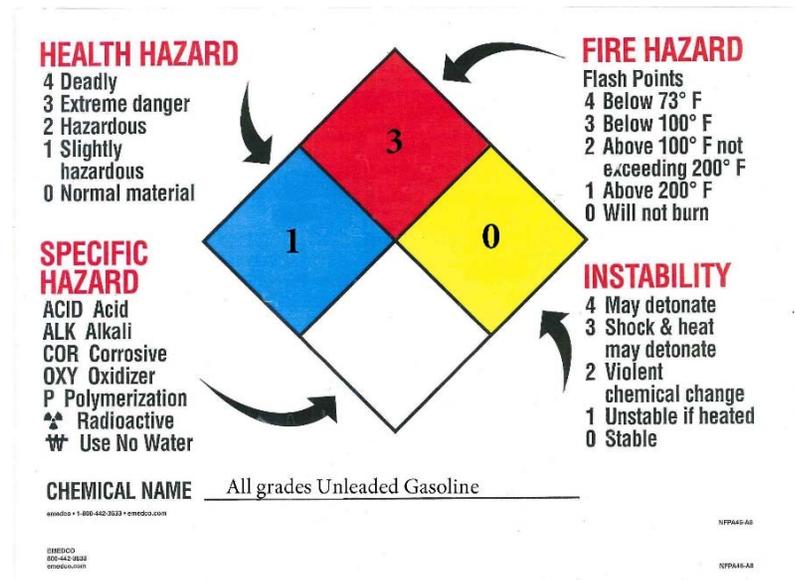
Labeling Requirements – NFPA 30 Section 21.7.2

- Ensure that a sign or marking that meets the requirements of NFPA 704, or another approved system, is applied to storage tanks containing liquids
- The marking shall be located where it can be seen, such as on the side of the tank, the shoulder of an access way or walkway to the tank or tanks, or on the piping outside of the diked area. If more than one tank is involved, the markings shall be so located that each tank can be identified.



Intent and Background of NFPA 704

- In 1961, NFPA issued the first edition of NFPA 704M.
- The objective of NFPA 704 was to create a standardized system of communicating the potential assortment of physical and chemical hazards with information on their flammability, instability, and potential impact on the health of people who come in contact with them.
- The labels typically appear on buildings, shipping containers, 55-gallon drums, ASTs, and elsewhere.
- NFPA 704 labeling is used widely in a number of industries, and OSHA has allowed its use for in-plant labeling systems.



Intent and Background of OSHA 1910.1200

- The purpose of the Hazard Communication Standard (HCS) is to ensure that the hazards of all chemicals produced or imported are evaluated and details regarding their hazards are transmitted to employers and employees.
- OSHA first introduced HCS requirements in 1983, including hazard identification in the form of material safety data sheets and labeling, a listing of chemicals, and worker training.

SAFETY DATA SHEET

CITGO No. 2 Diesel Fuel, Low Sulfur, All Grades



Section 1. Identification

GHS product identifier	: CITGO No. 2 Diesel Fuel, Low Sulfur, All Grades
Chemical name	: Fuels, diesel, No 2
Synonyms	: No. 2-D Grade Diesel Fuel Oil (defined by ASTM D-975); Treated or Refined Diesel Fuel No. 2; Grade 2 Distillate Fuel; Hydrodesulfurized Middle Distillate, C9-C16 Petroleum Hydrocarbons
Code	: Various
MSDS #	: AG2DF
Supplier's details	: CITGO Petroleum Corporation P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com
Emergency telephone number	: Technical Contact: (832) 486-4000 Medical Emergency: (832) 486-4700 CHEMTREC Emergency: (800) 424-9300 (United States Only)

Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY: INHALATION - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2 ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: Flammable liquid and vapor.
Harmful if inhaled.
Causes skin and eye irritation.
Suspected of causing cancer.
May be fatal if swallowed and enters airways.
May cause damage to organs through prolonged or repeated exposure. (central nervous system (CNS)).

Precautionary statements

Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash hands thoroughly after handling.

Date of Issue/Date of revision

: 7/29/2015.

1/10

Difference Between NFPA 704 and OSHA 1910.1200

- The two core components essential to the system (i.e. NFPA 704) are its focus on the inherent hazards of any material and the emphasis on acute hazards rather than chronic hazards.
- The HCS differs from NFPA 704 in its provisions that addressed the broad range of workplace hazards, both acute and chronic, as opposed to the acute emergency-response related hazards addressed by NFPA 704.
- Since 1983, the NFPA 704 system has had a much broader application as a hazardous chemical information resource than originally envisioned, and employers have utilized the NFPA 704 system to comply with HCS requirements for educating employees.

HazCom 2012

- In the 1980s, the UN began to develop the “globally harmonized system” for evaluating and identifying chemical hazards that would be adopted worldwide.
- OSHA represented the United States during these negotiations.
- The result was the “Globally Harmonized System of Classification and Labeling of Chemicals” published in 2005.
- The GHS is now incorporated into OSHA regulations (i.e., HazCom 2012) and became effective on June 1, 2016.

Overlap and Conflict - NFPA 704 and HazCom 2012

- Will NFPA 704 would continue to be an accepted method to comply with HazCom 2012?
 - Yes
- Will the NFPA 704 hazard ratings still be included now that HazCom 2012 had adopted the more prescriptive format?
 - Yes

Hazard Category Numerical Values - NFPA 704 and HazCom 2012

- The most significant area of concern was the GHS hazard category numerical values, which are inverted from the NFPA 704 hazard ratings.
- A material having a NFPA 704 health hazard rating of 3 or 4 represents serious to severe health hazard characteristics.
- On the other hand, the most severe rating in the GHS system is 1, with 3 or 4 representing moderate to minor hazards.

Summary - NFPA 704 and HazCom 2012

- Employers may continue to use NFPA 704 as part of the hazard communication program, provided that the aspects required by HCS that are not covered by NFPA 704 are addressed separately.
- Going forward, experience from full implementation of the GHS system may demonstrate the need for slight changes to NFPA's system, but without the expectation that it would ever be eliminated.

What to do next?

Here are some ideas of what to do next.

Step 1 – Perform an inventory of labels on petroleum storage tanks (ASTs and USTs)

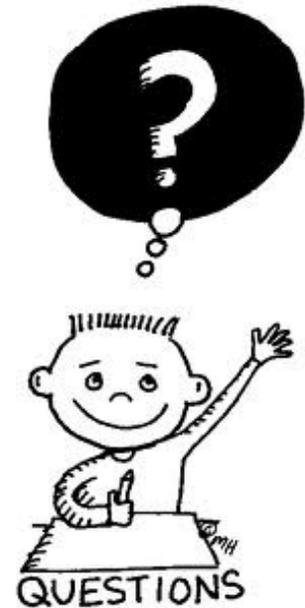
Step 2 – Compare existing label inventory to regulatory requirements and locally adopted codes.

Step 3 – Develop a Corporate Procedure for labeling petroleum storage tanks that meets the regulations, especially HazCom 2012.

Step 4 – Implement the Corporate Procedure.

Are there any questions?

Make sure and sign up and give us your email address if you want a copy of this presentation.



If you have any questions after the class, please call Mr. Nelson Brooks at 410-329-5105.