

2600SEG128

SAFETY STANDARD FOR THE HANDLING AND STORAGE OF LIQUIDS: FLAMMABLE, SOLVENT AND COMBUSTIBLE

1.0 PURPOSE

To establish the safety requirements for the handling and storage of liquids: flammable, solvent, and combustible.

2.0 BACKGROUND INFORMATION

Panama Canal Authority (ACP) Safety and Occupational Health Manual, Section 14.5, issued and revised by the Safety Division (ESS) in January of 2000, on the handling and storage of liquids, flammables and solvents. This standard updates the existing information and includes combustible products.

3.0 SCOPE

This standard applies to all ACP employees, floating equipment, contractors, and third parties performing works or activities within installations or areas under ACP responsibility.

4.0 LEGAL FOUNDATION

This Standard is established pursuant to Agreement No. 12 of the Board of Directors of the Panama Canal Authority (ACP), Safety and Health Regulations.

5.0 DEFINITIONS

For the purpose of this Standard, the following definitions apply:

5.1 Flammable Liquids: Refers to any liquid having an evaporation temperature under 100° F (37.8° C).

5.2 Evaporation Temperature: Is the minimum temperature at which a liquid emits sufficient vapors to form a flammable mixture with the air.

5.3 Solvents: Substances utilized to dissolve other materials through aqueous or nonaqueous systems.

5.4 Combustible Liquids: Refers to any liquid having an evaporation temperature equal to or greater than 100° F.

6.0 GENERAL

6.1 Precaution shall be taken to control or eliminate ignition sources, such as exposed flames, lights, cigarettes, welding, hot surfaces, heat by friction, sparks, static electricity, electric arcs, spontaneous ignition, chemical reactions, and radiant heat.

6.1.1 Flammable and combustible liquids shall be stored far from structures or neighboring facilities, or separated by 2-hour fire resistive walls.

6.1.2 All flammable or combustible material or their storage areas shall be kept at a minimum distance of 50 feet from a welding operation. If not possible, they shall be protected by fire

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screens to confine the heat, sparks, and debris. A pertinent hot-work permit issued by a competent person shall be obtained.

6.2 Workers shall utilize personal protection equipment and other safety controls required for the handling and storage of liquids: flammable, solvent, and combustible.

6.3 Flammable liquids and solvents shall be stored in approved metal containers and cabinets, far from any source of ignition. Maintain at hand only the minimum amount of flammable liquid necessary to perform the work during a shift.

6.4 The dispensers of flammable liquids shall be equipped with automatic stop valves and with electrical grounding. The dispensers shall also be equipped with a safety valve that allows the safe relief of pressure caused by an increase in the ambient temperature, and also avoids a negative pressure when being dispensed, thus allowing the normal flow of the liquid from the drum. Ensure that all liquid dispensing and receiving containers are electrically interconnected before transferring flammable liquids.

6.5 The electrical equipment utilized in the flammable and solvent liquids storage areas shall be specially designed to be used in hazardous atmospheres.

6.6 There shall be properly inspected fire extinguishers, of the type required for liquids: flammable, solvent, or combustible, located in all storage areas. Workers assigned to these areas shall know the location and method of operation of the fire extinguishers.

6.7 The areas for dispensing, utilizing, or storing flammable and solvent liquids shall have adequate ventilation (mechanical or natural) to prevent the accumulation of explosive vapors.

6.7.1 All accesses to flammable and/or combustible liquids storage areas shall be controlled.

6.7.2 Provisions shall be made to avoid environmental contamination in case of flammable and/or combustible liquid spills.

6.7.3 To the extent possible, all flammables and combustibles shall be stored indoors.

6.8 *No smoking* and *no exposed flame* warning signs shall be placed in visible locations throughout the entire flammable liquids storage area.

6.9 The removal of the plug to install the air vent shall only be allowed with the use of spark-proof tools (brass alloy). Use of inappropriate tools for this procedure may cause a spark that could ignite the flammable liquid vapors.

6.10 Before utilizing the flammable, solvent or combustible liquids, users shall read the instructions and labels on the container, as well as the Material Safety Data Sheet (MSDS) for the product.

6.11 Compliance with the Confined Space Manual guidelines and the standard for the identification of dangers shall be required, where applicable.

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6.12 Use of flammable, solvent, or combustible liquids in closed-in or confined spaces require compliance with ACP special guidelines and procedures. An Industrial Hygienist or a CP-IV shall review the site BEFORE the work is initiated.

7.0 TRAINING

7.1 All workers exposed to the use and handling of liquids: flammable, solvent or combustible, shall be trained on the hazards and measures to be taken in the event of an emergency.

7.2 Contractor shall provide training for their own employees

8.0 RESPONSIBILITIES

The responsibilities to ensure compliance with this standard are described in the ACP Safety and Occupational Health Management Standard 2600SEG101.

9.0 INQUIRIES

Any information or clarification of the content or application of this Standard must be requested in writing to the Safety and Industrial Hygiene Unit (RHSH).

10.0 EXCEPTIONS

Any requests for changes or temporary exceptions to this Standard must be made in writing to the Safety and Industrial Hygiene Unit (RHSH).

11.0 TERM

This Standard shall remain in force until amended or revised.

12.0 REFERENCES

12.1 Safety and Occupational Health Manual. Panama Canal Authority. Revision January of 2000.

12.2 Code No. 30 of the United States National Fire Protection Association (NFPA). Revision 2000

12.3 ACP Confined Space Manual

12.4 2600SEG201 HAZARDOUS MATERIAL INFORMATION STANDARD