INTRODUCTION

Many materials used in workplaces, including chemicals, are flammable. Since the storage and use of these materials pose a certain degree of risk, appropriate and adequate safety measures must be taken. To help you understand more about flammable materials, we have compiled a list of information relevant to flammable materials:

- Basic principles of combustion
- Types and risks of flammable materials
- Basic safety measures
- Emergency preparedness

SAFETY MANAGEMENT MEASURES

Combustion requires three basic elements:

- FUEL, the material that can be burned, and includes flammable materials commonly found at workplaces.
- AIR, oxygen is the most common supporter of combustion. Air generally contains 21% oxygen.
- HEAT SOURCE, for example, sparks generated from metal welding and cutting processes.

Basic Principles of Combustion

BASIC PRINCIPLES OF COMBUSTION

FIRE

Possible Risks

SOLID

- Minute solid particles produced from work processes and powders floating in the air can mix with air to form flammable and even explosive mixtures.
- Examples of materials include: cotton dust, metal particles, dust, and sawdust.

LIQUID

- Easily ignited and results in violent combustion.
- Flammable liquids evaporate under room temperature. When the flammable vapour mixes with air and comes into contact with a heat source, it will burn. When the mixture reaches a certain proportion, it will even explode when ignited.
- Example of materials includes: petrol, turpentine, paints, and cleaning agents.

GAS

- Flammable gases are usually stored in metal gas cylinders under high pressures. Leakage of small amount of gas can quickly fill up a large area and form explosive mixtures.
- Example of materials includes: gas welding, flame cutting work, etc.

MIST

- Mist produced by the atomization of spray or mists, e.g., steam generator or sputtering machine.
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