



Combustible Materials

What are Combustible Materials

Combustible materials are listed under Class B: Flammable and Combustible Material of the WHMIS classifications of hazardous materials. This includes solids, liquids and gases capable of catching fire in the presence of a spark or open flame under normal working conditions. Combustible materials usually need to be heated above normal temperatures before they will burn or catch fire (above 38° Celsius), but are capable doing so at temperatures below that. Common combustible materials on construction worksites include:

- **Solid Elements** - Such as wood and sawdust
- **Liquid Elements** - Such as fuels (gasoline or propane, etc.); solvents or thinners; paints and varnishes; cleaners, waxes or polishes; and adhesives.

It is important to remember that these materials are present on almost all worksites and workers must be aware of the risks associated with using combustible materials.

Dangers of Combustible Materials

Combustible liquids themselves do not burn. It is the vapours that can ignite when mixed with the air. Each combustible liquid has a different flashpoint. A flashpoint is the temperature that must be reached for the liquid to release enough vapour in the air for ignition. For example, the substance Phenol has a flashpoint of 79° Celsius. At this temperature the substances vapours could begin burning if they came into contact with an ignition source such as a flame or spark.

Vapours also have hidden properties that make them exceptionally dangerous. Most vapours are invisible making it difficult for workers to identify their presence. Vapours are

heavier than air so they stay near the ground and can gather in low places such as pits, trenches and basements. This makes ventilation essential when dealing with combustible liquids. Finally combustible liquids can leave vapour trails, that when ignited can travel back to the source of the liquid. For example, if a combustible liquid is spilled on a workers sleeve, a flame could travel along the vapour trail and burn the worker even if he or she is at a distance from the source of ignition.

Combustible materials also have other potential dangers besides their ability to burn. Some liquids can cause health problems depending on the specific material and route of exposure. Some liquids are corrosive and can cause chemical burns. Many liquids can undergo chemical reactions if they contact incompatible chemicals such as oxidizing materials or if they are stored improperly.

Safety Tips for Handling Combustible Materials

Know the materials you are working with.

Each combustible material has different properties such as flashpoint and effects of exposure. Material Safety Data Sheets (MSDS) supplier labels should tell you about the hazards for the combustible liquids you work with.

Know your environment.

Remember there are many hidden ignition sources; always assume there are ignition sources around you. Knowing your environment will help you stay out of potentially hazardous situations.

Handle with care.

The best method of safety is always prevention. Most combustible liquids will never have a chance to produce harmful vapour if handled properly. Follow the safe work procedures outlined for handling controlled products and always ensure you wear the appropriate personal protective equipment when necessary.