

45—Motorized Equipment

the eyes)

Wood-slat floor boards should be used and kept in good condition, to prevent slips and falls and to protect against electric shocks from equipment being charged

Fire doors should be installed between charging rooms and other areas where flammable liquids are handled and stored

Manufacturer's recommendations as to the charging rate for batteries of various sizes should be closely followed in order to prevent rapid generation of hydrogen. There are potential explosive quantities of oxygen and hydrogen in cells of batteries. This is particularly true if the battery is defective or if a heavy charge has been or is being applied. The lower the water in the battery, the greater the cavity for the accumulation of gas

Care should be taken to prevent arcing while batteries are being charged, tested, or handled. Tools and loose metal should not be stored in such a position that they may fall on batteries and cause a short circuit, which in turn can cause serious burns or an explosion

When manual lifting is necessary, sufficient help should be provided to prevent strains, sprains, or hernias. Hand carts for transporting batteries are commercially available or can be made in a company shop

Acid carboys should be handled with special care to prevent breakage and possible injury due to splashing of acid. Acid carboys should never be moved without their protecting boxes. They should not be stored in excessively warm locations or in the direct rays of the sun. Carboy tilters can be used. (See Chapter 24, "Materials Handling and Storage")

A summary of recommendations for charging and charging storage batteries is given in Chapter 27, "Powered Industrial Trucks," on pages 758-759

- **First aid for chemical burns** Many batteries contain an acid electrolyte, some, such as the nickel-iron battery, contain an alkali solution. Whether it be acidic or alkaline, if electrolyte gets on a person's skin, it should be washed off immediately with large quantities of running water. Neutralizing agents are so often mishandled, they often do more harm than good—only use them if first aid directions are available on labels or through

industrial plant directions. Get medical aid at once

- **First aid for burns of the eye.** Wash thoroughly with large amounts of clean water. A spray-type fountain should be located within 10 ft of the battery room. Place a sterile dressing over the eye to immobilize the lid and get medical aid at once. Well marked supplies of appropriate neutralizing agents can be kept close at hand for immediate use. Check with company physician

Gasoline handling

Handling and storing of gasoline should comply with the provisions of the National Fire Protection Association Standard No. 30, *Flammable and Combustible Liquids Code* (Fig. 45-8)

Gasoline should be prohibited for all cleaning. Solvents with higher flash points are available and are equally effective and much safer. Even when higher flash point solvents are used, if carburetor or gas line parts are cleaned, the solution should be changed regularly since the admixture of small quantities of gasoline will tend to lower the flash point, and increase the danger of fire and explosion

Grease, oil, and dirt may be removed from metal parts by nonflammable solutions, or by high-flash point solvents in special degreasing tanks with adequate ventilating facilities

Use of gasoline to remove oil and grease from garage floors should be prohibited. Nonflammable cleaning compounds are commercially available and should be used

Gasoline should not be used for removing oil and grease from hands. Soaps are available that will effectively remove greasy dirt from the skin without danger of injury. There are also protective creams and ointments which, if applied before starting work, will protect the skin from dirt and grease

In some shops, employees use gasoline to clean work clothes. This unsafe practice should be prohibited

If gasoline is spilled, it should be cleaned up immediately. If gasoline in quantity gets into the sewage system, the fire department should be notified so that the sewers can be flushed. Because gasoline vapor is heavier than air, it collects in low spots, such as basements, elevator pits, and sumps. These places