**Section 370.560 Safety**

a) Adequate provision shall be made to effectively protect the operator and visitors from hazards. The following shall be provided to fulfill the particular needs of each plant:

1) Enclosure of the plant site with a fence designed to discourage the entrance of unauthorized persons and animals.

2) Installation of hand rails and guards around all tanks, pits, stairwells, and other hazardous structures.

3) Provision of first aid equipment at marked locations.

4) Posting of "No Smoking" signs in hazardous areas.

5) Protective clothing and equipment such as air packs, goggles, gloves, hard hats, safety harnesses and hearing protection.

6) Provision of portable blower and sufficient hose.

7) Portable lighting equipment that complies with the National Electrical Code.

8) Appropriately placed warning signs for slippery areas, non-potable water fixtures, low head clearance areas, open service manhole, hazardous chemical storage areas, flammable fuel storage areas, etc.

9) Smoke and fire detectors, fire extinguishers, and appropriate waste receptacles.

10) Provisions for confined space entry in accordance with the requirements of the Occupational Safety and Health Act and any other applicable regulatory requirements.

b) Hazardous Chemical Handling

1) Containment Materials

The materials utilized for storage, piping, valves, pumping, metering, splash guards, etc., shall be specially selected considering the physical and chemical characteristics of each hazardous or corrosive chemical.

2) Secondary Containment and Storage

A) Wet and Dry Chemicals

Chemical storage areas shall be enclosed in dikes or curbs which will contain the stored volume until it can be safely transferred to alternate storage or released to the wastewater at controlled rates which will not damage facilities, inhibit the treatment processes, or contribute to stream pollution. Liquid polymer should be similarly contained to reduce areas with slippery floors, especially to protect travelways. Non-slip floor surfaces are desirable in polymer handling areas.

B) Liquified Gas Chemicals

Chlorine and sulfur dioxide cylinder and container storage shall meet the requirements of Sections 370.1020 and 370.1040. Ammonia gas cylinder isolation shall be provided. Gas cylinder storage facilities shall be equipped with appropriate alarm system and emergency repair equipment and control system.

3) Eye Wash Fountains and Safety Showers

A) Eye wash fountains and safety showers utilizing potable water shall be provided in the laboratory and on each floor level or work location involving hazardous or corrosive chemical storage, mixing (or slaking), pumping, metering, or transportation unloading. These facilities are to be as close as practical to possible chemical exposure sites and are to be fully useful during all weather conditions. The eye wash fountains shall be supplied with water of moderate temperature (50º – 90º Fahrenheit (F)), separate from the hot water supply, suitable to provide 15 minutes to 30 minutes of continuous irrigation of the eyes.

B) The emergency showers shall be capable of discharging 30 to 50 gallons per minute (gpm) of water at moderate (50º – 90º F) temperature at pressures of 20 to 50 pounds per square inch (psi). The eye wash fountains and showers shall be no more than 25 feet from points of caustic exposure.

4) Splash Guards

All pumps or feeders for hazardous or corrosive chemicals shall have guards which will effectively prevent spray of chemicals into space occupied by personnel. The splash guards are in addition to guards to prevent injury from moving or rotating machinery parts.

5) Piping, Labeling, Coupling Guards, Location

A) All piping containing or transporting corrosive or hazardous chemicals shall be identified with labels every ten feet and with at least two labels in each room, closet, or pipe chase. Color coding may also be used, but is not an adequate substitute for labeling.

B) All connections (flanged or other type), except adjacent to storage or feeder areas, shall have guards which will direct any leakage away from space occupied by personnel. Pipes containing hazardous or corrosive chemicals should not be located above shoulder level except where continuous drip collection trays and coupling guards will eliminate chemical spray or dripping onto personnel.

6) Protective Clothing and Equipment

The following items of protective clothing or equipment shall be available and utilized for all operations or procedures where their use will minimize injury hazard to personnel:

A) Air pack breathing apparatus for protection against chlorine and other toxic gases.

B) Chemical workers' goggles or other suitable goggles. (Safety glasses are insufficient.)

C) Face masks or shields for use over goggles.

D) Dust masks to protect the lungs in dry chemical areas.

E) Rubber gloves.

F) Rubber aprons with leg straps.

G) Rubber boots (leather and wool clothing should be avoided near caustics).

H) Safety harness and line.

7) Warning Systems and Signs

A) Facilities shall be provided for automatic shutdown of pumps and sounding of alarms when failure occurs in a pressurized chemical discharge line.

B) Warning signs requiring use of goggles and dust masks shall be located near chemical unloading stations, pumps, and other points of frequent hazard.

8) Dust Collection

Dust collection equipment shall be provided where dry chemicals are stored or used to protect personnel from dusts injurious to the lungs or skin and to prevent polymer dust from settling on walkways which become slick when wet.

9) Container Identification

The identification and hazard warning data included on shipping containers, when received, shall appear on all containers (regardless of size or type) used to store, carry, or use a hazardous substance. Sewage and sludge sample containers should be adequately labeled. Below is a suitable label to identify a sewage sample as a hazardous substance:

Raw Sewage

Sample Point No. \_\_\_\_\_

Contains Harmful Bacteria.

May contain hazardous or

toxic material.

Do not drink or swallow.

Avoid contact with openings

or breaks in the skin.

(Source: Amended at 21 Ill. Reg. 12444, effective August 28, 1997)