## Benzene Awareness

1. **Purpose**

The purpose of this program is to inform personnel of the dangers of benzene exposure, benzene permissible exposure limits, regulated areas, exposure monitoring, medical surveillance, personal protection, and basic emergency preparedness procedures

1. **Responsibility**

* Senior management will provide the resources, guidance, equipment, and enforcement necessary to protect personnel from exposure to benzene and ensure compliance with this policy.
* All personnel will comply with all elements of this program to prevent benzene exposure.
* Environmental, Health and Safety (EHS) Department will assist supervisors, managers, and other employees to implement and maintain the elements of this policy.

1. **Exposure Limits**

OSHA Permissible Exposure Limit (PEL), Subpart Z Tables Z-1-A

* 8-hour Time-Weighted Average **1 ppm**
* 12-hour Time-Weighted Average **0.67 ppm**
* Short-Term Exposure Limit (STEL) **5 ppm**
* Action Level **0.5 ppm**

1. **Regulated Areas**

Regulated area shall be established wherever the airborne concentration of benzene exceeds or can reasonably be expected to exceed the PEL or STEL. Access to regulated areas shall be limited to authorized persons.

1. **Physical and Chemical Characteristics of Benzene**

* Benzene can be found in locations such as petroleum refining sites, tank gauging, field maintenance, paint storage area, and areas where paint is being used and in the fuel storage area.
* Benzene is clear, colorless liquid with a distinctive sweet odor. Benzene is a flammable liquid. Its vapors can form explosive mixtures.
* Benzene vapors are heavier than air; thus the vapors may travel along the ground and be ignited by open flames or sparks at locations remote from the site at which benzene is handled.
* A concentration exceeding 3,250 ppm is considered a potential fire explosion hazard.

1. **Health Effects of Benzene**

Short term effects of overexposure may include irritation of eyes, nose and skin, breathlessness, irritability, euphoria, headache, dizziness, or nausea. Long term effects may result in blood disorders such as leukemia and anemia.

1. **Exposure Monitoring**

Each workplace with the potential for benzene exposure shall be monitored. Workplace exposure to benzene above the Action Level shall be carefully evaluated by the Environmental, Safety and Health Department to determine proper engineering controls, administrative controls, and PPE selection. Employees shall be notified of the monitoring results within 15 working days.

1. **Medical Surveillance**

A medical surveillance program shall be made available for employees who are or may be exposed to benzene at or above the action level 30 or more days per year; for employees who are or may be exposed to benzene at or above the PELs 10 or more days per year. If an employee refuses to take a medical examination, the employee will sign a release affirming that he or she had been offered the benefits and refused to participate.

1. **Methods of Compliance**

Engineering controls, work practices controls, shall be used to minimize employee exposure to or below the PELs. Wherever feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PELs, it shall be documented why such types of controls are not feasible to reduce employee exposures.

The following are minimal work practices for protection from benzene exposure:

* Use only the amount needed for your work. Excessive chemicals produce increased risk to the work place.
* Store benzene in a vented flammable storage cabinet.
* Wear proper PPE: Respiratory, eye and face, boots, gloves and apron protection.
* Use only approved containers.
* Cleanup spills as quickly as possible.
* All ignition sources must be controlled when benzene is used, handled or stored.
* No smoking in work areas.
* Fire extinguishers must be readily available in work areas.

1. **Protective Clothing and Equipment**

The selection of PPE will be based upon the working conditions, amount and duration of exposure, and other environmental factors. Selection of PPE for protection from benzene will be conducted by the Environmental, Safety and Health Department or on-site safety professional.

1. **Communication of Benzene Hazards**

Signs, labels, and verbal (briefings, training) shall be used to communicate benzene hazards to employees. As part of the benzene communication strategy, material safety data sheets (MSDS) for benzene are available to employees. Benzene awareness training is provided annually to employees.

* Signs will be posted at entrances to regulated areas. The sign shall bear the legend:

**DANGER BENZENE CANCER HAZARD FLAMMABLE – NO SMOKING AUTHORIZED PERSONNEL ONLY RESPIRATOR REQUIRED**

* Labels for containers will have the following wording, as a minimum:

**DANGER CONTAINS BENZENE CANCER HAZARD FLAMMABLE**

1. **Recordkeeping**

In compliance with the OSHA benzene standard, records shall be maintained for employee exposure, medical surveillance, monitoring and sampling results, exposure levels and respiratory devices to be worn. Exposure records are kept for 30 years after employee termination or after the completion of the job or project.

Exposure and medical monitoring records are made available to the affected employees or their representatives and OSHA upon their request. Any transfer of the records will require written approval of the Environmental, Safety and Health Department.

1. **Site Specific Contingency and Emergency Plans**

All employees will be made aware of any Emergency or Contingency plans at off-site locations. In addition all employees will be made aware of any benzene that is located at a host facility and where specifically the benzene is located and used at the host facility. All employees must be made aware of any additional safety rules and requirements while at a host facility.