Styrene Odor Awareness

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Styrene Monomer

- **CIPP process uses Polyester Resins**
  - Styrene is a main component of the resin used for over 33 years
  - The monomer has a distinct odor at a very low threshold of 0.1 ppm. The odor is sensitive to the nose and noticeable, similar to a onion or garlic
- **Exposure Limits:**
  - TWA: 50 STEL: 100 (ppm)

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Workers exposed to styrene?

- In the United States strict regulations are in place to protect worker health. In 1989, the U.S. Occupational Safety and Health Administration (OSHA) established a safe exposure standard for styrene of 50 parts per million (ppm) over an eight-hour day. Typically, the actual exposure levels in styrene manufacturing plants are 20 to 50 times below this safety level. In years past, before effective monitoring systems were available, worker exposure to styrene (as well as other materials) often was greater than current exposure levels.

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Workers exposed to styrene (cont'd)?

- The health of workers in plants making or using styrene has been monitored for many years. Studies looking for long-term health effects related to styrene exposure have examined health records of over 50,000 workers exposed to styrene, going back more than 50 years. These studies have not shown any statistically significant increases in long-term health problems of any kind attributable to styrene exposure in these workers.

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What about the scent of styrene around manufacturing plants?

- Styrene's distinctive odor can be detected even when styrene is present at extremely low levels. People living near facilities that make or use styrene sometimes may notice a slight scent in the air.

What happens to styrene released into the environment?

- Extensive research shows that styrene exists only briefly in the environment; it is destroyed rapidly in the air and disappears quickly from soils and surface waters.

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Consumer/General Public Exposure:

- Foods such as coffee, strawberries and cinnamon naturally contain styrene. Small amounts of styrene are also produced naturally by plants, bacteria, and fungi.
- Styrene is also present in combustion products such as cigarette smoke and automobile exhaust.
- Consumers use polymers containing styrene and are exposed to very small amounts of residual monomer daily

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Uses & Applications

- Some examples of these uses include:
  - Packaging
  - Toys/Recreational Equipment
  - Consumer Electronics
  - Construction
  - Transportation
  - Medical Supplies

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Odors in House

- Open windows to ventilate smell
- Fumes typically enter a dwelling through drain with a dry trap.
  - Pour water down all drains
  - Damaged traps that will not hold water is a safety concern because sewer gases could also enter the dwelling.
  - If odor persists contact the office for instructions
  - **REMEMBER:** Styrene odors are detectable by smell at very low non-hazardous levels

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Project Setup

- Where are the steam exhaust, boiler fumes, etc. going???
- Be aware of…
  - Air intakes
  - Open doors and windows
  - Wind direction

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