



Worksite: _____ Instructor: _____ Date/Time: _____

Topic C540: Acrylamide

Introduction: Acrylamide is an odorless, free-flowing white crystalline used as an intermediate in the production of polyacrylamides. It's classified as a carcinogen by the EPA. It may affect the reproductive system. Polyacrylamides are used as additives for:

- water treatment
- enhanced oil recovery
- flocculants
- thickeners
- soil conditioning agents,
- dam foundations, tunnels, and sewers.
- sewage and waste treatment
- ore processing

Chemical properties: Acrylamide is soluble in water, methanol, ethanol, dimethyl ether, and acetone. It is insoluble in benzene and heptane. Solid acrylamide is stable at room temperature, but may polymerize violently when melted or contacting oxidizing agents such as peroxides, acids, and alkalis. When heated to decomposition, acrylamide emits a poisonous gas, acrid fumes, and NOx. If heated to high temperatures, acrylamide can explode.

Skin/eye absorption: May cause irritation and redness and causing systemic poisoning. Symptoms may parallel inhalation.

Ingestion/Inhalation: Can cause drowsiness, tingling sensations, fatigue, weakness, stumbling, slurred speech, shaking, and irritation to the respiratory tract. Exposure may cause central and peripheral nervous system damage.

Chronic Exposure: Prolonged or repeated exposure through any route may cause muscular weakness, incoordination, skin rashes, excessive sweating of hands and feet, cold hands, peeling of the skin, numbness, abnormal skin or muscle sensations, fatigue, and cause central and peripheral nervous system damage.

Handling and Storage: Keep in a tightly closed container in a cool, dry, ventilated area and out of direct sunlight. Protect against physical damage. Wash all exposed body areas when exiting restricted areas. At the end of the day, shower; dispose of outer clothing and change to clean garments. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in the workplace. Containers of this material are hazardous when empty since they retain product residues.

Exposure Controls/PPE: Wear special protective equipment where exposures may exceed established exposure levels.

Ventilation System: An exhaust system is recommended to keep employee exposures below the Airborne Exposure Limits.

Personal Respirators: If exposure limits are exceeded and engineering controls are not feasible, respirators with vapor cartridges and particulate filters (NIOSH type N95 or better filter) may be worn for up to ten times the exposure limit. A full-face piece respirator (NIOSH type N100 filter) may be worn up to 50 times the exposure limit. If oil particles are present, use a NIOSH type R100, or P 100 filter. When exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. This compound can exist in both particulate and vapor phases so a gas/vapor cartridge should be used in addition to the particulate filter. If the vapor concentration alone exceeds the exposure limits, use a supplied air respirator.

- Skin Protection: Use rubber/ neoprene gloves, impervious boots, and apron/coveralls as needed in areas of exposure.
- Eye Protection: Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in the work area.
- First Aid Measures: Because of the toxic and highly absorptive nature of acrylamide, quickly providing first aid helps to minimize health effects.
- Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
- Ingestion: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.
- Skin Contact: Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
- Eye Contact: Flush eyes with water for at least 15 minutes, lifting lower and upper eyelids. Get medical attention ASAP.

Conclusion: Acrylamide should be considered a hazardous material. All appropriate protective equipment should be used and safety procedures followed when working with it. It is important to be familiar with the exposure symptoms of and treatment for acrylamide exposure.

Employee Attendance: (Names or signatures of personnel who are attending this meeting)

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_____	_____	_____
_____	_____	_____
_____	_____	_____
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These guidelines do not supersede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.