

APPENDIX C

Hazards of Chemical Stabilizers

The major hazards associated with chemical stabilizers and the precautions to take when using them are identified in this appendix. When receiving chemical stabilizers, you should also receive a Material Safety Data Sheet (MSDS) that is prepared by the manufacturer to give you more detailed information on the product. Generally, the hazard of airborne particles is reduced significantly in the open air on the construction site. In this appendix, ventilation is discussed when materials are handled in enclosed areas, such as soils laboratories. Due to differences in manufacturers, the MSDS may list hazards that are slightly different from the ones below.

PORTLAND CEMENT

Health-Hazard Data

Signs and symptoms of overexposure.

- Alkali burns.
- Irritation to the eyes and the respiratory system.
- Allergic dermatitis.

Emergency and first-aid procedures.

- Irrigate the eyes with water.
- Wash the affected areas of the body with soap and water.

Precautions for Safe Handling and Use

Procedures for cleanup of released or spilled material.

- Use dry cleanup methods that do not disperse the dust into the air.
- Avoid breathing the dust.

Control Measures

Respiratory protection. Use a National Institute of Occupational Safety and Health (NIOSH)-approved respirator.

Eye protection. Use goggles.

HYDRATED LIME

Reactivity Data

Avoid acids and fluorine.

Health-Hazard Data

Routes of entry.

- Eyes.
- Skin.
- Inhalation.
- Ingestion.

Acute reactions.

- Irritation of the eyes.
- Irritation of the skin.
- Irritation of the respiratory tract.
- Irritation and inflammation of the digestive system.

Chronic reactions.

- Corrosion of the eyes.
- Corrosion of the skin.

- Irritation of the respiratory tract.
- Irritation and inflammation of the digestive system.

Signs and symptoms of overexposure.

- Irritation of the skin and eyes.
- Irritation of the respiratory tract.
- Irritation of the digestive system.

Medical conditions aggravated by exposure.

- Respiratory disease.
- Skin conditions.

Emergency and first-aid procedures.

- If the material gets into the eyes, flush them thoroughly with large amounts of water while holding the eyelids apart.
- If the material gets on the skin, wash thoroughly with soap and water.
- If the material is inhaled, get medical attention.
- If the material is ingested, do not induce vomiting. Get medical attention.

Precautions for Safe Handling and Use

Procedures for the cleanup of spilled or released materials.

- Wipe the material up and place it in a disposal container (some manufacturers recommend using a vacuum cleaning system).
- Remove the residue with water.

Procedure for the disposal of waste material. Dispose of the waste according to local, state, and federal regulations.

Procedure for the handling and storage of material. Store the material in tightly sealed containers away from incompatible materials.

Control Measures

Respiratory protection. Use a dust-filter mask.

Ventilation. Ensure that the general mechanical ventilation meets the Threshold Limit Value (TLV) and Permissible Exposure Limit (PEL).

Protective gloves. Use leather or rubber gloves.

Eye protection. Use well-fitted goggles.

Other protective equipment. Wear long sleeves and pants.

Work hygiene. Use good hygiene practices; avoid unnecessary contact with this product.

Supplemental safety and health data. Use respiratory protection if exposure limits cannot be maintained below the TLV and PEL.

QUICKLIME

Fire- and Explosion-Hazard Data

Extinguishing media. Use a dry chemical (CO₂) (water will cause evolution of heat).

Special fire-fighting procedures. Do not use water on adjacent fires.

Unusual fire and explosion hazards. The material may burn but does not ignite readily. Some materials may ignite combustibles (wood, paper, and oil).

Reactivity Data

Conditions to avoid. Moisture.

Material to avoid. Acids and oxidizing materials.

Health-Hazard Data

Routes of entry.

- Eyes.
- Skin.
- Inhalation.
- Ingestion.

Signs and symptoms of overexposure.

- Conjunctivitis.

- Corneal ulceration.
- Iritis.
- Skin inflammation.
- Skin ulceration.
- Lung inflammation.

Emergency and first-aid procedures.

- Keep unnecessary people away.
- Stay upwind.
- Keep out of low areas.
- Isolate the hazard and deny entry.
- Wear a self-contained breathing apparatus and full protective clothing.
- Avoid contact with solid materials.
- Irrigate the eyes with water.
- Wash the contaminated areas of the body with soap and water.
- Do not induce vomiting if the material is swallowed. If the victim is conscious, have him drink milk or water.

Precautions for Safe Handling and Use

Procedures for the cleanup of released or spilled material.

- Sweep the material into a large bucket.
- Dilute it with water and neutralize it with 6M-HCl.
- Drain into an approved storage container with sufficient water.

Procedures for the disposal of waste material.

- Put the material into a large vessel containing water. Neutralize with HCl.
- Discharge into an approved disposal area with sufficient water.
- Do not allow calcium oxide (CaO) to enter water intakes; very low concentrations of it are harmful to aquatic life.

Procedures for the handling and storage of material.

- Protect containers from physical damage.
- Store in a cool, dry place.

- Separate from other storage items and protect from acids and oxidizing materials.

Precautions to take for personal safety.

- Wear chemical goggles.
- Wear a mechanical filter respirator.
- Wear rubber protective clothing.

Control Measures

Respiratory protection. Use a self-contained breathing apparatus.

Ventilation. Requires a local exhaust vent.

Protective gloves. Use rubber gloves.

Eye protection. Use chemical goggles.

Other protective equipment. Wear rubber protective clothing.

FLY ASH

Health-Hazard Data

Lethal dose (LD) 50- Lethal concentration (LC) 50 mixture. TLV 10 milligrams/cumulative

Routes of entry.

- Skin.
- Inhalation.

Acute reaction. Can cause minor skin irritation.

Chronic reaction. May cause pulmonary disease if exposed to an excessive concentration of dust for a long period of time.

Signs and symptoms of overexposure.

- Development of pulmonary disease.
- Irritation of the skin.

Precautions for Safe Handling and Use

Procedures for the cleanup of released or spilled material.

- Vacuum or sweep up the spill.
- Use a dust suppressant agent if sweeping is necessary.

- Wet down large spills and scoop them up.

Procedure for the disposal of waste material. Dump the material in landfills according to local, state, and federal regulations.

Procedures for the handling and storage of material.

- Avoid creating dust.
- Maintain good housekeeping practices.

Control Measures

Respiratory protection. Use an NIOSH-approved respiratory for protection against pneumoconiosis-producing dusts.

Ventilation. Provide local exhaust ventilation to keep below the TLV.

ASPHALT CEMENT

Fire- and Explosion-Hazard Data

Flash point. 100 degrees Fahrenheit.

Extinguishing media.

- CO₂.
- Foam.
- Dry chemicals.

Special fire-fighting procedures. Wear an NIOSH-approved respirator/full protective gear.

Unusual fire and explosion hazards. Vapors may ignite explosively.

Reactivity Data

Conditions to avoid. Heat and flames.

Hazardous decomposition products.

- CO.
- CO₂.
- Hydrocarbons.

Health-Hazard Data

Signs and symptoms of overexposure. May become dizzy, lightheaded, or have a

headache. If this occurs, remove the victim from exposure and provide him with adequate ventilation.

Emergency and first-aid procedures.

- Avoid contact with the skin.
- Do not ingest. If swallowed, do not induce vomiting. Get medical attention.

Precautions for Safe Handling and Use

Procedures for the cleanup of released or spilled material. Scrape the material into containers and dispose of it according to local, state, and federal regulations.

Procedures for the handling and storage of material.

- Store below 140 degrees Fahrenheit.
- Do not store near heat or flame.

Control Measures

Respiratory protection. None is required if ventilation is adequate.

Ventilation. Recommend a local exhaust vent.

Eye protection. Use normal precautions.

Other protective measures. Wash the hands and other areas of contact after use.

CUTBACK ASPHALT

Fire- and Explosion-Hazard Data

Flash point. 65 degrees Fahrenheit.

Extinguishing media.

- CO₂.
- Dry chemicals.
- Halogenated agents.
- Foam.
- Steam or water fog.

Health-Hazard Data

Sign of overexposure. Thermal burns to the eyes and skin from the heated material.

Emergency and first-aid procedures.

- Flush the eyes with cool water for at least 15 minutes.
- Wash the affected areas of the body with soap and water.
- Remove the victim to an uncontaminated area if adverse effects occur from inhalation. Give artificial respiration if the victim is not breathing. Get medical attention.
- Induce vomiting if a large amount was swallowed. Get medical attention.

Precautions for Safe Handling and Use

Procedures for the cleanup of released or spilled material.

- Contain and remove the material by mechanical means.
- Keep the material on an absorbent material.
- Keep the material out of sewers and waterways.

Procedure for the disposal of waste. Dispose of the material according to local, state, and federal regulations.

Procedure for the handling and storage of material. Keep the container closed.

Control Measures

Respiratory protection. Use an NIOSH-approved respirator for organic vapors if it is above the TLV.

Ventilation. Provide local exhaust ventilation to keep it below the TLV.

Protective gloves. Wear rubber gloves.

Eye protection. Use safety glasses or goggles.

Other protective equipment. Wear work clothes and gloves if prolonged or repeated contact is likely.