Lime Sulfur reacts to form deadly Hydrogen Sulfide Gas

An orchard worker was admitted to the hospital after attempting to fill a 325-gallon poly tank, which had approximately 30 gallons of lime sulfur in the bottom, with NPK 5-10-10 fertilizer. The worker noticed an odor and had difficulty breathing as he filled the tank. Before the tank was half full, the worker had passed out, and when emergency medical services arrived, he was in convulsions. He was admitted to the intensive care unit with respiratory failure, life-threatening metabolic acidosis, coma, and hematuria.

The tank was owned by the bulk chemical distributer and the orchard worker was filling the tank on the distributer's property while the distributer's employee operated the controls. The orchard worker mentioned the presence of lime sulfur in the tank, but the distributer's employee disregarded his concern and they proceeded to fill the tank. If the hospital hadn't been just down the street, the worker would have most likely died.

The cause of this accident was found to be hydrogen sulfide poisoning as a result of mixing lime sulfur with a phosphate-containing fertilizer. At high enough concentrations, hydrogen sulfide can kill in only one breath. At lower concentrations, hydrogen sulfide is detectable as the strong odor of rotten eggs. At higher levels the odor will not be noticeable because one's sense of smell is overcome which gives the gas very poor warning properties. Brief exposures to hydrogen sulfide at high concentrations have commonly caused inflammation and irritation of the eyes, and at very high concentrations unconsciousness, respiratory paralysis and death. The immediately dangerous to life or health (IDLH) level for hydrogen sulfide is 100 parts per million. Based on the symptoms experienced, the level present at the time of the accident was estimated to be between 600 and 1,000 parts per million.

Employers must have safety data sheets (SDS) available for employees and a Hazard Communication program in place. Contact the distributor for an SDS.

Oregon OSHA

Oregon OSHA
www.orosha.org
800-922-2689

The following page contains a DANGER sign about the chemical reaction of certain chemicals that should not be mixed.

OR-OSHA 2993-19 (R-4/14)

DEPARTMENT OF CONSUMER & BUSINESS SERVICES

DO NOT MIX { **LIME SULFUR**
SOIL MEND
SOIL MEND PLUS

WITH ACIDS OR PHOSPHATE FERTILIZER PRODUCTS.

DEADLY HYDROGEN SULFIDE (H_2S) GAS

MAY BE EMITTED.

PELIGRO

NO MEZCLE { **LIME SULFUR**
SOIL MEND
SOIL MEND PLUS

PRODUCTOS FERTILIZANTES CON FOSFATO

O ACIDO. GAS MORTAL DE HIDROGENO SULFURICO

PUEDE SER EMITIDO.