



Lime Sulfur reacts to form deadly Hydrogen Sulfide Gas

An orchard worker was sent to a bulk chemical distributor to obtain a load of NPK 5-10-10 fertilizer. Two approximately 325-gallon poly tanks, owned by the bulk distributor, were placed on the back of the worker's flatbed truck. The orchard worker and an employee from the bulk chemical distributor went to fill up the tanks. The orchard worker held the hose into the tank while the worker for the chemical company operated the controls. The orchard worker made note of the fact that there was a small amount, approximately 30 gallons, of lime-sulfur in the bottom of the tank. He mentioned this to the chemical company worker who stated to go ahead and fill the tank. As the tank reached approximately half full the orchard worker heard gas escaping and stated to the other worker, this doesn't smell right, and could no longer breathe. The other worker told him to switch places and jumped up on the truck to hold the hose. When he reached the hose connection, he realized the orchard worker had passed out in a sitting position. The chemical worker wedged the hose, jumped down, shut off the pump and carried the worker away from the truck. He laid the orchard worker down and ran to summon emergency medical services. Upon their arrival, the orchard worker was in convulsions. The orchard worker was transported to the hospital where he was admitted into intensive care with respiratory failure, life-threatening metabolic acidosis, coma and hematuria.

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 material safety data sheets (MSDS) available for employees and a **Hazard Communication** program in place. Contact the distributor for a MSDS.

Oregon
OSHA

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

DEPARTMENT OF
CONSUMER
& BUSINESS
SERVICES

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

Hazard alerts provide information on unusual safety or health hazards or unusual or hazardous materials or practices. For more information contact the Oregon OSHA Standard and Technical Resources Section at 503-378-3272, toll free at 800-922-2689 or visit our Web site at www.orosha.org.

OR-OSHA 2993 (R-6/08)



DO NOT MIX { LIME SULFUR
SOIL MEND
SOIL MEND PLUS

WITH ACIDS OR PHOSPHATE FERTILIZER PRODUCTS.

DEADLY HYDROGEN SULFIDE (H₂S) 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.