

## Liquid Lime

### INFORMATION GUIDE

Liquid Lime is a slurried form of calcium hydroxide ( $\text{Ca}(\text{OH})_2$ ). It is most commonly used as a fifty percent (50%) slurry of fine calcium hydroxide in water, although other slurry blends are available. The primary use of Liquid Lime is for the lime stabilization of wastewater sludge.

#### ADVANTAGES

Liquid Lime has many advantages over bagged calcium hydroxide, bulk calcium oxide or pebble lime. Ordinary bagged calcium hydroxide is always a problem to work with. Dust, safety equipment, respiration equipment, work place cleanliness, worker comfort, and physical labor associated with the dumping of bag after bag of calcium hydroxide is costly, messy and potentially dangerous.

Calcium oxide (pebble lime) is costly, requires expensive slaking equipment (capital costs and operational costs), is potentially very hazardous, requires experienced operators, requires extensive safety equipment, is highly exothermic (releases large amounts of heat when slaked), and requires elaborate loading and unloading procedures. When calcium oxide is slaked you end up using slurried calcium hydroxide for lime stabilization.

Liquid Lime provides all of the chemical properties necessary for proper lime stabilization without the hazards, expense, and personnel requirements of either bagged calcium hydroxide or slaking calcium oxide.

With Liquid Lime the advantages are:

- \* No dust problem.
- \* No bags to handle.
- \* No special breathing equipment required for workers.
- \* No special permits or licensing.
- \* Requires no expensive slaking equipment.
- \* Stabilizes sludge without the danger and hazards of ordinary liming materials and provides a safer, healthier work place.
- \* Costs less to use Liquid Lime for lime stabilization than ordinary liming materials.
- \* Liquid Lime provides a complete, simple lime stabilization system with a consistent product.

## USE

Liquid Lime is used to lime stabilize wastewater sludge simply and effectively. A storage tank equipped with mixers and a metering pump is used to homogenize and introduce Liquid Lime to the wastewater sludge. The metering pump can be set to run for a set period of time for a given volume of sludge. Simply start the mixing system, set the time which corresponds to the volume of sludge to be stabilized, and start the metering pump.

## DELIVERY

Liquid Lime is delivered to the site in sealed, watertight tankers. Tankers are capable of unloading via gravity or through a self contained pumping system into a small Liquid Lime storage tank. There is no need for any physical labor from plant employees, no fork lift equipment, no lime silos or bag house dust collectors. The Liquid Lime storage tank will take up less room than bagged hydrated lime.

## AVAILABILITY

Liquid Lime is backed by an almost inexhaustible inventory of over three million tons. Delivery can be arranged on an on-call or scheduled basis to insure a constant supply of Liquid Lime for your lime stabilization needs.

### TECHNICAL DATA - LIQUID LIME

Constituent	Liquid Lime		Commercial Hydrates	
	Slurry	Dry	Smp#1	Smp#2
Calcium hydroxide-Ca(OH) <sub>2</sub>	92.50	90.60	94.30	91.60
Available Calcium oxide - CaO	70.01	68.60	71.40	69.40
Calcium carbonate - CaCO <sub>3</sub>	1.85	2.20	2.13	4.01
Silica - SiO <sub>2</sub>	1.50	1.76	0.81	1.30
Iron and alumina oxides - R <sub>2</sub> O <sub>3</sub>	1.60	1.73	0.38	0.90
Magnesium oxides - MgO	0.07	0.07	0.57	1.25
Sulfur - S	0.15	0.15	0.03	0.10
Phosphorus -P	0.01	0.01	0.01	0.01
Free carbon	0.25	0.42	-----	-----
Free water	-----	09.4	0.42	0.31
Not analyzed	2.07	2.00	1.30	0.25

\* All data in percent (%)