

**CRS-45™**



# CRS-45 Development

Since 1960, Chemical Lime Company has manufactured easy-to-use calcium hydroxide slurry for industrial, municipal, and environmental applications. Today, CLC manufactures slurry products for a wide variety of customer applications. As the variety of applications expanded, so did

customer expectations. In response to the growing and changing market, our research and development team developed CRS-45, a premium quality, reagent grade high solids calcium hydroxide slurry that exhibits consistent physical and chemical characteristics, shipment after shipment.

## Easy-To-Use Product

### Ease of Use

Storage and feed systems are simple. An agitated tank is all that is required for storage. Feeding CRS-45 is simple and reliable—no more problems with bridged silos, plugged feed lines, or fugitive dust.

### Safe Handling

CRS-45 provides several environmental and safety advantages. Unlike caustic soda, CRS-45 is non-hazardous, thereby simplifying transportation, storage, and handling. Fugitive dust is eliminated, so there is no need for an air permit. The potential for injuries associated with handling dry chemicals is eliminated with CRS-45. However, as with all chemicals, caution should be used when handling.

### Reduced Capital Cost and Price Stability

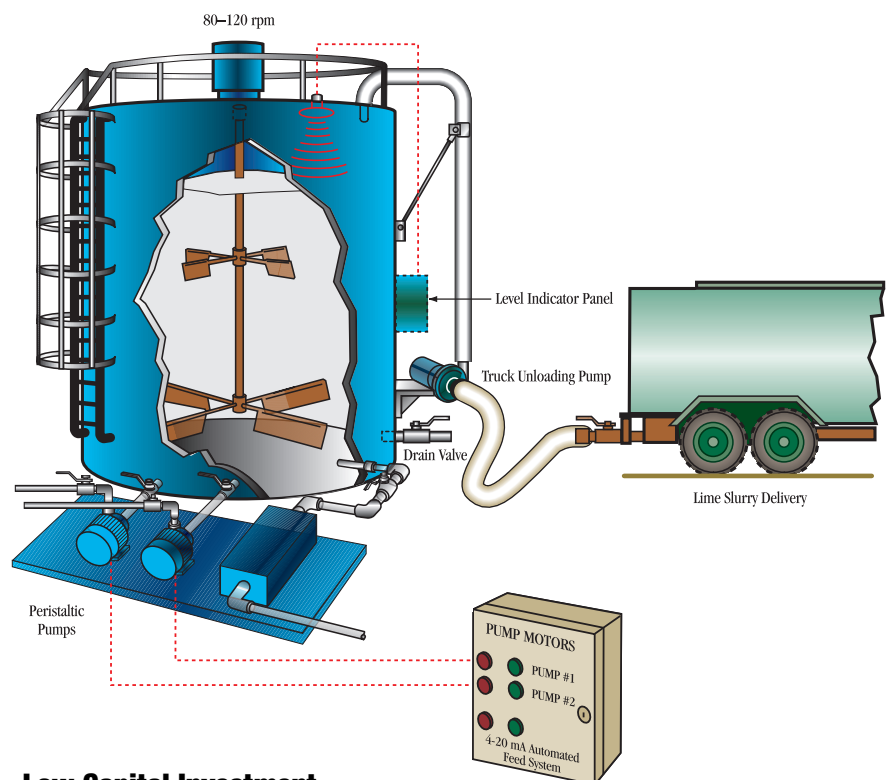
The minimal equipment requirement for CRS-45 means lower capital costs—no silo, heating elements or expensive material handling equipment required—and reduced maintenance expenses when compared to other dry chemicals. Furthermore, the simplicity of operation reduces labor costs.

Associated maintenance expenses, manpower, and processing time are significantly reduced—lowering overall costs and improving efficiency.

Lime has a proven track record of stable pricing over time. Price stability

means that customers can confidently establish and manage operating budgets—both short-term and long-term.

All together, the savings realized in labor, equipment, maintenance, and processing makes CRS-45 an excellent solution.



### Low Capital Investment

*Simple system design — an agitated tank with an appropriate feed pump.*

# Unparalleled Versatility with a Safe Alkaline Solution

## Performance Advantages

A highly effective source of hydroxide alkalinity, CRS-45 has a number of advantages over competitive products, including:

- quicker reacting than magnesium hydroxide
- safer to use than caustic soda
- consistent physical and chemical characteristics
- low viscosity, less than 900 cps
- high solids content, 45%

## Technical Comparison of Neutralization Agents

Neutralizing Agent	Equivalent Basicity Factor*
CRS-45 $\text{Ca}(\text{OH})_2$	1.00
Hydrated Lime $\text{Ca}(\text{OH})_2$	1.00
High Calcium Quicklime $\text{CaO}$	0.76
Limestone $\text{CaCO}_3$	1.36
Sodium Hydroxide $\text{NaOH}$	1.08
Magnesium Hydroxide $\text{Mg}(\text{OH})_2$	0.78
Soda Ash $\text{Na}_2\text{CO}_3$	1.43

*\*Comparing all neutralizing agents to high calcium hydrated lime. Thus, 1.00 pound of hydrated lime has equal neutralization capacity of 0.76 pounds of high calcium quicklime. Calculations are based on dry tons and assumes all reagents are 100% pure.*

## Applications

CRS-45 is used in a wide variety of applications including:

- pH adjustment and control
- acid neutralization
- metals precipitation
- lime softening
- coagulation
- odor control
- sludge stabilization
- corrosion control
- other processes requiring calcium or hydroxide ions

CRS-45 is manufactured from ANSI/NSF Standard 60 certified raw materials, ensuring acceptability for the treatment of drinking water.

CRS-45 is a low-cost replacement for a number of alkaline materials like:

- caustic soda
- magnesium hydroxide
- soda ash

## More Than a Product...

CLC's research and development, technical services, and engineering teams can provide support for your specific needs. Whether you require a chemical compatibility study, material handling suggestions, or system design support, we can help.



*CRS-45 manufacturing and distribution facility.*



*Tanker truck being loaded with 5,000 gallons of product.*



*Wastestream treatment application at a petroleum refinery.*

## Properties

### Appearance:

white, free-flowing liquid

### Solids Content:

45% in liquid suspension

### Density:

11.2 lbs/gallon

### Specific Gravity:

1.35 g/cc

### Brookfield Viscosity:

less than 900 cps (at 100 rpm)

### Particle Size:

95% (min) passing #100 mesh

### Freezing Point:

32° F

### pH:

approximately 12.5, buffered

## Typical Chemical Composition

Ca(OH) <sub>2</sub>	93.5%
SiO <sub>2</sub>	0.65%
CaCO <sub>3</sub>	≤ 1.9%
Fe <sub>2</sub> O <sub>3</sub>	0.35 %
Al <sub>2</sub> O <sub>3</sub>	0.25%
SO <sub>3</sub>	0.35%
SO <sub>3</sub>	0.35%
Other	≤ 3.0%

## Availability

Product is available in truckload quantity (approximately 5,000 gallons) or in less-than-truckload volumes through distributors.

## Chemical Lime Company

Our innovative spirit has propelled us into a leadership position in today's market. Employing technical specialists in the fields we serve is one way Chemical Lime meets customer needs in many industries.

We provide customized solutions with lime-based products to varied markets including water and wastewater

treatment, steel manufacturing, building construction, road and highway construction, hot mix asphalt, mine reclamation, paper production, copper, gold, and alumina processing, and flue gas desulfurization. Headquartered in Fort Worth, Texas, Chemical Lime Company has 40 locations in North America.



### For more information

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