

# LimeCure

## Q1: What is **LimeCure**?

**LimeCure** is a low molecular weight polyacrylic polymer.

## Q2: What are the soft savings from using **LimeCure**?

There are numerous non-monetary benefits including:

- **Safety**
- **Employee morale**
- **Employee utilization**

## Q3: What type of maintenance benefits can be expected?

'**LimeCured** slurry' dramatically reduces manhours for manual or chemical cleaning of lime slurry feed lines, feed pumps, and storage tanks.

## Q4: Where has the product been used?

There are dozens of satisfied **LimeCure** users - references can be provided upon request.

## Q5: Is a COA provided with deliveries?

Yes, ASI provides a detailed COA with every delivery upon request.

## Q6: How fast does it work?

**LimeCure** starts to work immediately. The time it takes to see the performance impact is determined by the volume of lime slurry in inventory and the slurry consumption rate.

## Q7: What is the property of **LimeCure** that is key to its success?

**LimeCure** is added in the lime slaking process to produce a '**LimeCured** slurry' comprised of lime particles that resist agglomeration and are easily dispersed - thus providing more surface area, speeding the kinetics of the lime reaction.

## Q8: What are the direct cost savings of **LimeCure**? How does **LimeCure** pay for itself?

Although each lime user is different - **LimeCure** has proven to have an enormous financial impact for many lime users by lowering Total Cost of Operation (TCO):

- **Lower Lime Costs**
- **Eliminate lime scale**
- **No water added**
- **Reduce energy costs**
- **Reduce waste disposal costs**
- **Improve reliability**
- **Better control**
- **Reduce flue gas emissions**

## Q9: Is **LimeCure** NSF and FDA approved?

Yes, all **LimeCure** products are NSF certified for use in treating lime slurries in drinking water applications. The FDA approves products based on their chemical name and the specific use as listed in 21 CFR. Sodium polyacrylate are found in most all uses where the product comes in direct contact with food and are recognized as GRAS.

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Q10: How do I use **LimeCure**? Do I need special feed equipment?

**LimeCure** is dosed into the slaking water supply prior to the slaking equipment. The equipment needed is no different than that used for other specialty chemicals. We will assist in recommending and setting up the proper feed equipment and locating the best point of addition.

Q11: How many **LimeCure** products do you have and how do they compare?

There are 3 products. **LimeCure** 50 is the highest active but most viscous. In cooler environments we recommend either heat tracing lines or the use of lower viscosity **LimeCure** 40 or **LimeCure** 25.

Q12: Is it ecologically toxic?

**LimeCure** has extremely low aquatic ecotoxicity - with **LimeCure** 50 EC50 values >100 mg/L in water. For more detail see section 12 of the SDS.

Q13: What are the patents covering this technology?

**Patent Numbers 7,718,085, 7,897,062 and 9,309,151.**

Q14: Does the use of **LimeCure** cause any problems I should be aware of?

**LimeCure** softens and removes existing lime scale. Therefore, during the initial dosing period and until the system has been cleaned - it is not uncommon to see slugs of viscous lime slurry. This is lime scale that has been removed from walls of the slaker, tanks, pipes, pumps, etc. Don't be alarmed by this - but do take precautions to avoid loss of lime slurry flow during this period.

Q15: What is the recommended dose and will the dose vary?

The dose of **LimeCure** is directly proportional to the pebble lime feed rate into the slaker.

- **LimeCure** 50: 14 - 18lbs/ton of CaO, nominal 16
- **LimeCure** 40: 18 - 22lbs/ton of CaO, nominal 20
- **LimeCure** 25: 28 - 36lbs/ton of CaO, nominal 32

Q16: What is the fate of **LimeCure** in the process?

**LimeCure** goes with and remains with the  $\text{Ca(OH)}_2$  solids. **LimeCure** has a very strong affinity for  $\text{Ca(OH)}_2$  - rendering it irreversibly integrated into the resulting  $\text{Ca(OH)}_2$  particles. Analyses of clarifier overflow water have been completed in various systems and as expected NO **LimeCure** polymer residual has been detected in the resulting water (20 ppb is the lower limit of the test).