



Innovative Cleaning for the Food and Beverage Industry

- Scaleva® by Arkema is a powerful new generation acid for efficient descaling and derusting applications.
- Scaleva® acid is a sustainable solution for cleaning and descaling food-contact equipment surfaces in food and beverage processing; it is especially effective on the tough calcium scales targeted by cleaning formulations in the dairy industry.
- In CIP and blast-in-place (BIP) systems, Scaleva® acid helps reduce cleaning time and waste treatment costs.
- For industrial and institutional applications, Scaleva® efficiently cleans cooling towers, evaporative coolers, hot water boilers, and processing equipment.
- Scaleva® contains no phosphorus and nitrogen, two water pollutants that cause eutrophication (dense growth of aquatic plants leading to the death of animal life from lack of oxygen) in rivers, lakes and other bodies of water.

CUSTOMER BENEFITS OF USING SCALEVA® ACID

- **Strong acidity**
Promotes rapid attack on carbonate and oxide scales
- **High solubility of Scaleva® acid salts**
Faster dissolution and removal of salts – potential for reduction in rinse water volume
- **Non-foaming and slightly hydrotropic**
Readily formulated with various surfactants
- **Stable with strong oxidizing agents**
Safely and easily formulated with hydrogen peroxide or peracetic acid
- **Non-oxidizing**
Minimized degradation of components in the formulation
- **Low corrosivity compared to other cleaning acids**
Less damaging to pipes, fixtures and vessels
- **Low toxicity and eco-toxicity**
Biodegradable. Dilute solutions are safe for discharge to water treatment facilities*
*Using recommended disposal methods



ELEMENTS OF PERFORMANCE

Descaling applications include cooling towers, evaporative coolers, hot water boilers, processing equipment and more.

Scaleva® by Arkema efficiently removes scale and rust similar to HCl, but is less corrosive to carbon steel, stainless steels and aluminum. Scaleva® acid can extend equipment life.

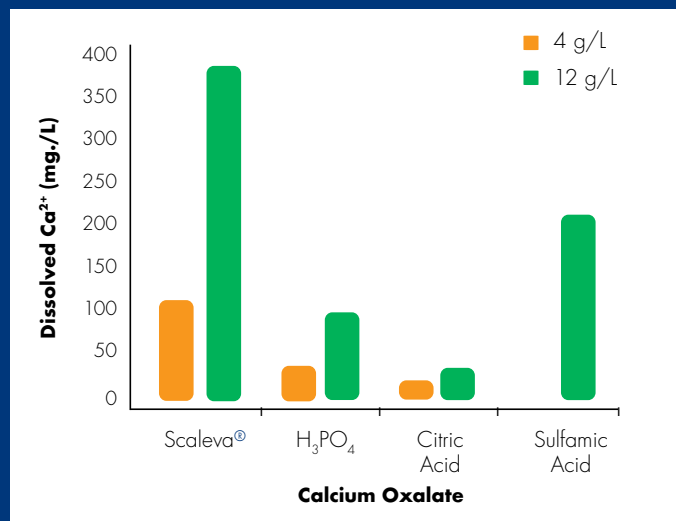
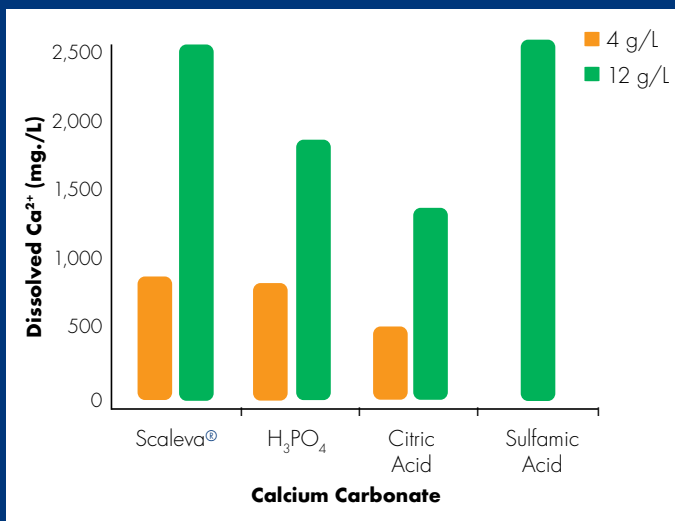
Scaleva® acid in descaling offers an outstanding chance to enhance sustainability goals by lowering the phosphates and nitrates in effluent water, reducing the presence of pollutants that cause eutrophication of local surface waters.

Scaleva® can be formulated with a number of products to further augment its intrinsic high efficiency. This capability helps reduce the number of cleaning steps and time required, and potentially the amount of water used.

Arkema's sulfonyls team is ready to support your development of Scaleva® acid-based formulations.

ARKEMA'S SCALEVA® ACID VS. PHOSPHORIC, CITRIC, AND SULFAMIC ACID

Scaleva® by Arkema outperforms phosphoric acid and citric acid on calcium carbonate and dissolves these scales as well as sulfamic acid. On calcium oxalate scales, sulfamic, citric and phosphoric acids are no match for the dissolution efficacy of Scaleva® acid.



Test conditions: A cube of calcium carbonate (1 cm³), or powdered calcium oxalate (6 g) was immersed in 100 g of acid solution (4 g/L or 12 g/L = 0.5 or 1.5 oz/gal) for 24 hours at 70°C (158°F).

CORROSIVITY OF ACIDS TO STAINLESS STEELS EFFECT OF TEMPERATURE (µM/YEAR)

ACID	STAINLESS STEEL	TEMPERATURE (°C)	CONCENTRATION (g/L ⁻¹)	CORROSION RATE (µm/year)
Scaleva®	304L	60	10	0 - 2
Phosphoric	304L	60	10	5 - 11
Sulfuric	304L	60	10	approx. 70
Scaleva®	316L	90	10	10 - 16
Sulfuric	316L	90	10	66 - 173
Scaleva®	316L	90	100	42 - 79

Test conditions: Steel coupons immersed for 8 days, static conditions, 100 mL closed reactor, per ASTM methods (G31). Concentrations given as grams pure acid per Liter. Unit conversion: 25.4 µm = 1Mil = 0.001 inches. In chemical processing equipment, corrosion rates less than 100 µm/year are generally regarded as acceptable.

FOR MORE INFORMATION

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