ACE ENTERPRISES

ACE COOLING TOWER DESCALER

Inhibited acid-based descaler that dissolves scale, rust and mineral deposits in cooling towers, condensers and chillers. Restores heat transfer.

Restore heat transfer. Cut energy bills.
Prevent downtime before peak load.

1. Why cooling tower descaling matters

A thin layer of scale costs you cooling capacity, energy and uptime

Hard water leaves scale on condenser tubes, nozzles and fills. Scale and biofilm together insulate the system, so your chiller works harder, your energy bill rises and your equipment trips when you can least afford it.

Problem in your cooling system	What it costs you
Hard scale on condenser tubes	Scale insulates the tubes, so heat transfer drops and chiller amps climb
High condenser approach temperature	Approach rises to 3–6°C instead of a healthy 1–2°C
Clogged nozzles and fills	Restricted water flow and airflow lower cooling efficiency
Biofilm on top of scale	Biofilm and scale together form an insulating layer that is far harder on heat transfer than scale alone
Higher chemical consumption	Biocides and inhibitors become ineffective under the scale layer
High-pressure trips	Unplanned system shutdowns when the plant is working hardest
Lower cooling capacity	Poor AC performance during peak load
Higher energy bills	8–18% excess electricity consumption

20–40%
restored heat transfer efficiency

8–18%
lower chiller power consumption

1–2°C
condenser approach after descaling

2. How we help you

ACE Cooling Tower Descaler: a controlled, inhibited-acid descaling process

What we offer	How it helps you
Fast scale dissolution	Rapidly dissolves calcium carbonate, calcium sulphate, magnesium salts and iron oxides
Silica softening booster	Additives that help soften silica deposits
Corrosion inhibitors	Inhibited acid technology that protects mild steel, copper, brass, aluminium and stainless steel when used as directed
Safe on tower materials	Compatible with PVC, FRP and stainless steel
Easy to use	Works at ambient temperature; low foaming, so safe for recirculating systems; circulation or soak method
Fast flush-out	Biodegradable surfactants aid penetration of scale; flushes out quickly

Five-step descaling procedure

1	2	3	4	5
Prepare	**Circulate**	**Rinse & flush**	**Neutralise**	**Restart**
Stop chiller, isolate the circuit, drain basin to foot-valve level, remove sludge and algae	Fill with fresh water, add descaler, circulate through pump and condenser; keep pH below 2	Drain and rinse with fresh water for 10–15 minutes until the return line is clear	Circulate 2–3% soda ash for 15–20 minutes until pH is 6–8, then drain and refill	Add make-up water and system treatment chemicals; restart tower and chiller

Dosage by scale severity

Scale	Descaler in water
Light scale	4 – 5%
Medium scale	8 – 10%
Heavy scale	12 – 15%

Circulate for about 1–4 hours depending on scale thickness. Confirm dosage with a site check.

Before vs after descaling: indicative performance

Parameter	Before descaling	After descaling
Condenser approach temperature	4–6°C	1–2°C
Heat transfer rate	Low (fouled)	Up 20–40%
Chiller power consumption	High	Down 8–18%
Chiller amp draw	High	Down 10–15%
Water flow through nozzles	Restricted	Up 25–35%
Biofilm formation	Heavy	Minimal
Equipment reliability	Low, frequent trips	High, fewer trips

Indicative improvements; actual results depend on scale thickness, system design and operating conditions.

3. Your benefits of working with us

Lower energy bills, fewer trips and longer equipment life

Your benefit	What you get
Better heat transfer	Restores heat transfer efficiency and brings the condenser approach back to normal
Lower energy bills	Reduces chiller power consumption by 8–18%
Better water flow	Improved water flow and spray distribution through nozzles and fills
Less biofilm	Removes the scale that biofilm builds on
Fewer breakdowns	Prevents summer breakdowns and high-pressure trips; extends life of chillers, pumps and tower fans
Lower maintenance and chemical cost	Cleaner surfaces let biocides and inhibitors work, so you use less
Better building comfort	Improved building cooling and tenant comfort

Where you can use it

Application areas
Malls & commercial buildings
Hospitals & hotels
IT parks & data centres
Manufacturing plants
HVAC service contractors
Heat exchangers, chillers & evaporative condensers

Technical properties

Property	Value
Appearance	Clear, pale yellow liquid
pH (1% solution)	1.5 – 2.5
Specific gravity	1.12 ± 0.02 @ 25°C
Foaming	Low to moderate
Solubility	Completely soluble in water
Packaging	40 kg HDPE carboy
Shelf life	12 months, unopened

Safety: corrosive acid-based liquid. Wear acid-resistant gloves, face shield or goggles, rubber apron and safety shoes, and ensure ventilation. Do not mix with alkalis or oxidisers. Avoid prolonged contact with zinc, galvanised steel or magnesium alloys. For skin or eye contact, flush with plenty of water for at least 15 minutes and seek medical help. Neutralise spills with lime or soda ash.

Descale before the summer peak, not after the breakdown

Ask for a site check and a sample

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