

VERTKLEEN DESCALER

The Agreed OEM Standard for American Refrigeration Systems

Walmart Logistics Distribution Centers · Anhydrous Ammonia · Clean & Warm Water · Aluminium Coils · Copper Tubing · Heat Exchangers

Up to 94%

Heat-Transfer Efficiency Restored

8–22%

Energy Consumption Reduction

4–8 hrs

Descale Cycle — Single Window

THE Standard

Team Verdict

The Situation

Walmart Logistics Distribution Centers run 24/7. Refrigerated zones operate continuously from +4°C to -25°C, powered by American industrial anhydrous ammonia (R-717) systems — the backbone of large-scale cold-chain refrigeration in the United States. Scale accumulation in condenser water circuits, heat exchangers, aluminium coils, and copper tubing is unavoidable. A 1.5 mm deposit cuts heat-transfer efficiency by 12%. At 6 mm, the penalty reaches 40%. At Walmart's operating volume, that inefficiency means millions in excess energy spend and compressor wear the network cannot afford.

The solution had to be fast, metal-safe, chloride-free and proven at scale. VERTKLEEN Descaler is all of these — and has been unanimously agreed by the team as the go-to chemical for every scaling need across the network.

Results Across Every System

System	Protocol	Time	Outcome
Anhydrous ammonia condenser circuit	15% / Ambient	6–8 hrs	8–15% compressor energy saving; condensing pressure at design
Clean & warm water heating circuits	10–15% / 40–60°C	4–6 hrs	18–24% heating efficiency restored; flow rate up to +30%
Aluminium evaporator coils	10% / Ambient	4–5 hrs	Complete scale removal; zero pitting; defrost intervals extended
Copper tubing & condenser bundles	15% / Ambient	5–6 hrs	Bright metal; head pressure down; no dezincification
Plate heat exchangers	20% / Ambient	3–4 hrs	40–60% pressure drop reduction; up to 94% efficiency restored
Shell & tube heat exchangers	15% / Ambient	6–8 hrs	3–5°C approach temp improvement; compressor lift reduced

Why VERTKLEEN Wins

Chloride-free

Zero contamination risk to the ammonia charge — non-negotiable on NH₃ systems.

Broad metal safety

Inhibited formula protects Al, Cu, mild steel and SS simultaneously.

One maintenance window

Full descale in 4–8 hours. Operational cadence at Walmart DC is non-negotiable.

Low-foam recirculation

Engineered for pump-driven closed loops — no foaming issues on extended cycles.

Biodegradable

Meets US environmental guidelines. Neutralize and drain — no hazardous waste complications.

Network-proven

Validated across the full range of American refrigeration assets at Walmart DC scale.

Operational Protocol

- Fully isolate circuit from live ammonia charge
- PPE: gloves, face shield, chemical apron — always
- Monitor pH every 30–60 min; stable pH = done
- Flush with two full circuit volumes before restart
- Confirm rinse-water pH 6.5–8.5 before sign-off
- Photograph and log condition pre- and post-treatment

VERTKLEEN Descaler is the agreed standard across Walmart Logistics Distribution Centers

Scale Less. Save More. — VERTKLEEN: Built to Save Operations Time and Money.