

MASEST VertKleen™

The Zero-Hazard Water Treatment Standard

Same engineering performance. None of the hazardous chemistry.

0-0-0

HEALTH · FLAMMABILITY · REACTIVITY

The performance of a legacy program — without the acid fumes, the evacuations, or the hazmat drums.

For decades, cooling-tower water treatment has meant hydrochloric acid for cleaning, bromine and bleach for biocide, glutaraldehyde, and inhibitors carrying zinc, molybdate, or chromate. Effective — and hazardous. **VertKleen delivers the same scale control, corrosion protection, and Legionella-risk management using chemistry rated HMIS 0-0-0.** Equivalent protection, engineered to be safe on an occupied campus.

Function-by-function: traditional vs. VertKleen 0-0-0

Function	Traditional / legacy	HMIS	VertKleen equivalent	HMIS
Scale & corrosion inhibitor	Phosphate / zinc / molybdate blends	1-2	WaterSafe60 — NSF/ANSI 60, no heavy metals	0-0-0
Oxidizing biocide	Stabilized bromine / sodium hypochlorite	3-0-1	Purgo — FIFRA 25(b) minimum-risk	0-0-0
Non-oxidizing biocide	Glutaraldehyde 50% (flammable, toxic)	3-2-0	DBNPA tablet — controlled-release, one tab/qtr*	low
Acid clean / passivation	Hydrochloric / inhibited acids	3-0-1	VertKleen HCR — biodegradable acid replacement	0-0-0
pH adjustment / caustic	Caustic soda / sodium hydroxide	3-0-1	VertKleen CR — NSF/ANSI 60 caustic replacement & pH adjuster	0-0-0
Degreaser / cleaner	Caustic / solvent degreasers (high pH, flammable)	2-1	VertKleen Neutral — the world's only neutral pH-7 degreaser	0-0-0

*DBNPA (EPA-registered, general-use) is the program's one mild-hazard product, used as a low-dose controlled-release tablet to satisfy the non-oxidizing biocide rotation. Every other VertKleen product is HMIS 0-0-0.

THE DIFFERENCE: No acid fumes. No campus evacuations during cleaning or passivation. No flammable biocides. No chromate, zinc, or molybdate. No hazardous drums stored where people work and learn. **Equivalent protection — zero hazard.**

Why it wins

Safer sites

Clean, passivate, and service with the building occupied — no evacuation, no exposure, lighter PPE.

Less compliance drag

No DOT hazmat freight, no flammable/acid cabinets, simpler SDS, fewer OSHA/HazCom triggers.

Lower liability & TCO

No chromate/zinc/moly, no neutralizer waste stream, NSF/ANSI 60 inhibitor, full ASHRAE 188 documentation.

Built for partners in the field

- **No licensing barrier in Florida** — every VertKleen biocide is general-use or FIFRA 25(b); none are restricted-use, so no FDACS applicator license is required to apply them.
- **Turnkey supply** — MASEST provides the chemistry, controllers, feed equipment, and startup/passivation support; your team delivers the field service.
- **Single accountable source** — one program for scale, corrosion, and microbiological control, engineered and documented end to end.

Your customers want their equipment protected *and* their people safe. VertKleen is the only program that refuses to make them choose. Let's put a safer chemistry standard on every tower you service.