SUPRA PERFECTA

WATER TREATMENT ·

SPT95™ in Water Treatment

One high-purity hypochlorous acid, dosed across the entire water value chain, replacing a stack of hazardous incumbent chemicals at lower applied dose.

32,000 ppm	24+ months	80–120×	Zero
high-purity HOCl	proven shelf life	vs sodium hypochlorite	chlorinated by-products

THE OPPORTUNITY

Water disinfection is a large, regulated, recurring spend built on flawed chemistry

1

Structural, not cyclical

Every drinking-water, wastewater, industrial-process, cooling, agricultural and recreational system needs continuous disinfection. Demand is non-discretionary and recurring.

2

Incumbent chemistry is failing three tests at once

Chlorine gas, hypochlorite, chlorine dioxide, chloramine and bromine treat bulk water but barely penetrate the biofilm that shields pathogens, and bring corrosivity, handling hazard, disinfection by-products and fast decay, forcing continuous over-dosing.

3

Regulation is tightening the screws

Rising pressure on THMs, HAAs, AOX, chlorate and effluent consents, plus ESG and audit scrutiny, is turning treatment chemistry into an operational and reputational risk.

SPT95™: high-purity HOCl that outperforms incumbents

What it is

- **Chemistry:** 3.2% HOCl in ultra-pure water; >95% HOCl purity vs ~25% for typical ECA-generated product
- **Concentration:** 32,000 ppm high-purity concentrate, dosed to ~1 ppm at the point of use
- **Stability:** >24 months proven ambient shelf life, no on-cycle decay
- **Classification:** Not classified under GB-CLP at supply concentration; no Class-8 freight, no PPE in normal use

Why it wins in water

- **High purity and concentration.** 32,000 ppm at >95% HOCl purity puts more active oxidant per litre into the water, with a cleaner profile than dilute or on-site-generated product.
- **No toxic by-products.** No THMs, HAAs or chlorate, and biodegrades to water, easing discharge consent and ESG pressure at the point of use.
- **More effective than incumbents.** Neutral-charge HOCl penetrates the biofilm that shields pathogens and kills faster at lower applied dose, not just the bulk water (slide 2).
- **Low corrosivity, pH-agnostic.** Near-neutral to 304/316 steel and polymers, and pH-agnostic across a wide pH range, removing the pH-correction chemistry hypochlorite needs.

One product spans the entire water value chain

Six application verticals served by the same concentrate, with no on-site generators or auxiliary pH chemistry.

Drinking water

Primary disinfection and residual; DWI Reg. 31 and NSF/ANSI 60 compliant, zero regulated by-products.

Wastewater

Final-stage disinfection ahead of outfall; biofilm, H_2S and odour control across rising mains.

Industrial process

Cooling towers, boilers, desalination and data-centre loops; MIC and Legionella control.

Agricultural & amenity

Livestock drinking water, irrigation and amenity systems; no residue on crops or soil.

Recreational

Pools and spas at low free-available chlorine, with no skin or eye irritation and no chloramine off-gas.

Emergency & portable

Concentrated deployment for disaster, military and off-grid use; minimal transport weight, long shelf life.

Spotlight: data centres and cooling towers

Cooling water is on the critical path for data centres. Rising rack densities, tighter water targets and MIC risk make the incumbent biocide rotation a liability, and the AI build-out is scaling the demand. SPT95 replaces the rotation with one active across every aqueous loop.

Open evaporative towers

Largest water and chemical demand, highest Legionella exposure. Dosed at make-up, continuously into recirculation, and as a periodic basin shock.

Closed-loop + adiabatic

Biofilm in the sealed loop and the wetted adiabatic media, the main Legionella route. Dosed to the closed loop and the adiabatic spray water.

Liquid cooling, AI racks

Biofilm fouls micro-channel cold plates. Dosed to the technical cooling water, facility loop and heat-rejection circuit.

Biofilm & Legionella control

Cleaner blowdown, easier reuse

Low corrosivity, polymer-safe

One active, not a rotation

Cooling-water microbial control is product-type 11 under GB BPR, for which SPT95 holds authorisation.

Structurally better than the incumbent stack

Biofilm removal	Penetrates and clears biofilm, not just the bulk water
Biocidal efficacy	80–120× the biocidal rate of OCl^-; log-6 kill in <15 s
No toxic by-products	No THMs, HAAs, AOX or chlorate; 95–99% lower DBPs
Corrosivity & asset life	Low corrosivity; 2–3× elastomer, 1.5–2× PVC pipe life
pH agnostic	Effective across a wide pH range; no pH-correction dosing
Stability & logistics	≥24 months vs <1 month; up to 24× fewer tanker movements

NaOCl used as the numerical comparator; the same structural advantages apply against ClO_2, chloramine, $Ca(OCl)_2$, chlorine gas, peracetic acid and bromine.

SPT95 vs sodium hypochlorite, by the numbers

Substituting SPT95 for 10% NaOCl. The same structural gains repeat against ClO_2, chloramine, $Ca(OCl)_2$, chlorine gas, peracetic acid and bromine.

Plant & materials

2–3× longer
Elastomer seal & diaphragm life

1.5–2× longer
PVC / CPVC pipe & fittings life

90–100% less
Scaling at the injection point

Biocidal efficacy, pH 7–8

80–120×
HOCl vs OCl^- intrinsic rate

~100% vs ~52%
Active HOCl delivered at the quill

6–12×
Legionella kill-rate, pH 7 vs 8

Discharge & environment

95–99% less
THM and HAA5 formation

30.9 → 0 g/L
Sodium loading to effluent

10–100×
Biofilm penetration rate

Safety & handling

Not regulated vs Class 8
Transport classification (UN 1791)

Not classified vs 1B
GHS / CLP skin corrosion

Water-rinse vs Level B
Spill response tier

Regulatory burden

Not triggered
Major-accident (COMAH) scope

Eliminated
Hazardous-inventory reporting

One fewer
Hazard-labelled SDS on register

Stability & logistics

≥24 mo vs <1 mo
Proven unopened shelf life

Up to 24× fewer
Tanker deliveries per campaign

Eliminated
Weekly iodometric strength assays

Comparator is 10% NaOCl; multipliers reflect HOCl/OCl^- speciation at pH 7–8. Figures per SPT water-treatment collateral; site results vary.

Independently validated and certified

Efficacy

- UKAS-accredited EN suite: EN 1276, EN 13624, EN 13727, EN 14476, EN 16777, EN 17126
- Field-validated against Legionella, Pseudomonas, E. coli, coliforms, norovirus and Giardia
- Bactericidal, fungicidal, virucidal and sporicidal activity confirmed

Certification

- NSF/ANSI 60 for drinking-water treatment
- DWI Regulation 31 (UK drinking water)
- ISO 9001, ISO 14001 and ISO 45001 operational systems

Materials & stability

- Independent corrosion review: no corrosion of 304/316 stainless at 5,000 ppm where hypochlorite showed attack
- Real-time stability report, four batches aged 8–22 months, all within 32,000 ppm ±5%
- Supports the assigned 24-month shelf life

Real deployments, not just lab tests

Independent testing has confirmed biofilm removal and up to 100% pathogen eradication across live sites, with a municipal wastewater pilot now running in China.

International airport

Two years of Legionella issues cleared by a four-day shock-dose; use extended across the airport network.

Hotel, spa & golf estate

Borehole biofilm and algae; independent tests confirmed biofilm removal and 100% Legionella, E. coli and coliform kill.

Food & drink manufacturer

Legionella in domestic water and biofilm in the coffee-plant pipework; 100% eradication in six days.

China municipal wastewater

Wenjiang plant, Chengdu: replacing NaOCl at ~half the applied dose, targeting fecal coliform 24,000 → <1,000 MPN/L.

Case studies from SPT water-treatment collateral (SPT95 / Abulox); China figures per the Wenjiang trial protocol. Results are site-specific.

Dosing on a Free Available Chlorine basis

SPT95 is dosed on a Free Available Chlorine (FAC) basis, so it drops straight into existing chlorine practice and models like-for-like against the incumbent.

FAC equivalence. 32,000 ppm HOCl = 43,252 mg/L FAC (× 1.3516), directly comparable to 10% NaOCl at 100,000 mg/L FAC.

Applied FAC = residual + demand. Dose is sized so applied FAC meets the target residual plus the water's chlorine demand (bioload, DOC, ammonia, Fe/Mn).

Why it takes less oxidant. At pH 7–8 SPT95 is ~100% pre-formed HOCl vs ~52% for NaOCl, and HOCl is 80–120× more biocidal than OCl^-, so the same kill needs less FAC.

Model-backed per site. Each dose is set from SPT's companion dosing model and confirmed by a Phase 0 jar test.

Typical SPT95 dose

Application	mL / m^3
Drinking water	7 – 18
Process water	12 – 35
Effluent	14 – 42
Cooling tower	23 – 81
Tank shock	230 – 2,310

THE COMMERCIAL HOOK

SPT95 turns a safety chemical into a savings engine

Legionella control normally forces hot-water systems to run at 60°C. Continuous SPT95 disinfection holds the microbial risk at a far lower temperature, so operators can drop the set point and cut the gas bill without adding Legionella exposure.

1 Dose

SPT95 dosed to ~1 ppm across the hot-water loop for continuous disinfection

2 Lower

Set point reduced from 60°C to 40°C, a 20°C reduction in delivered temperature

3 Save

Gas energy, carbon and cost fall, net of a modest HOCl dosing cost

Worked example on the next slide uses SPT's own heat and money saving calculator, applied to a 1,000-room hotel.

WORKED EXAMPLE · 1,000-ROOM HOTEL

£190k net saving a year, per site

Basis: 400 m^3/day hot water (145,600 m^3/yr) · gas at £0.083/kWh · 60°C → 40°C set point · SPT95 dosing cost ~£91k/yr

£281k

Gross energy saving / yr

£190k

Net saving after HOCl / yr

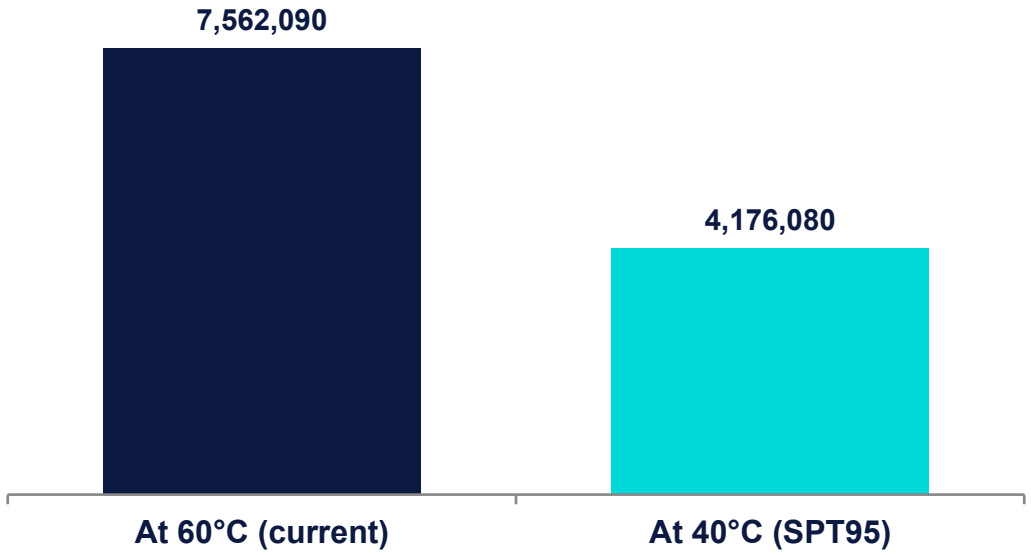
30%

Reduction in hot-water gas bill

626 t

CO_2 avoided / yr

Annual hot-water gas energy (kWh)



A 3.39 million kWh cut, 45% less hot-water gas energy per year.

WORKED EXAMPLE · MUNICIPAL WASTEWATER

Same kill, roughly half the oxidant

Basis: Wenjiang Yongsheng WWTP, Chengdu · secondary effluent at pH 7–8 · iso-biocidal HOCl dose at pH 7.5 · trial design, to be confirmed in the 6-phase pilot

0.89 mg/L

SPT95 applied FAC, iso-biocidal (vs 1.69 for NaOCl)

~47% less

Oxidant loading for the same kill

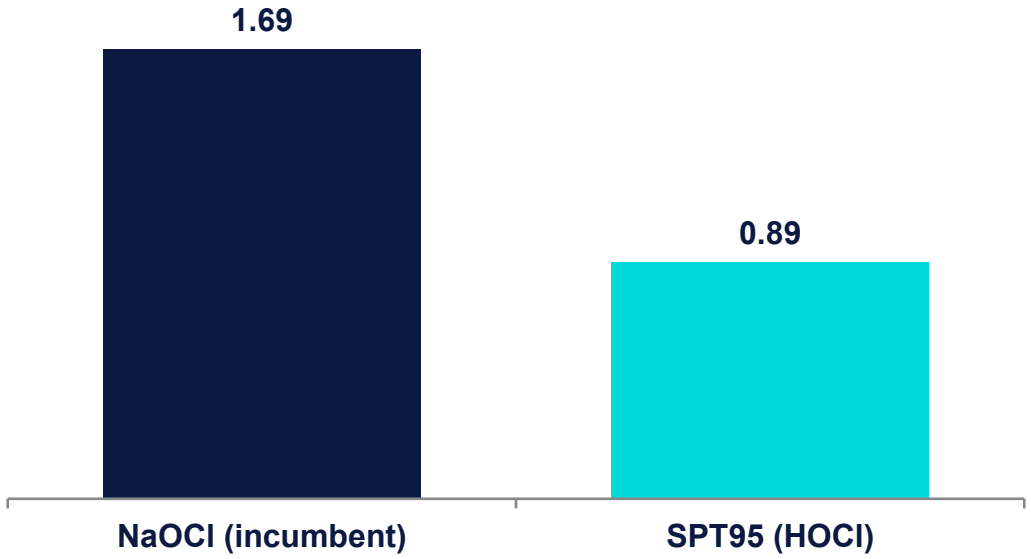
24,000 → <1,000

Fecal coliform target (MPN/L)

Zero

Sodium added to the effluent

Applied FAC for matched disinfection (mg/L)



Lower oxidant per m^3 means less chemical, fewer deliveries and no sodium load, on top of the safety and stability gains.

Why water is a core pillar of the SPT story

Recurring & sticky

Disinfection is continuous, non-discretionary spend. Once dosed into a customer's loops, SPT95 becomes embedded infrastructure with high switching friction.

Value-based pricing

The hotel case alone frees ~£190k/yr per site. Low cost of goods against quantified customer savings supports premium, margin-rich pricing rather than commodity pricing.

One product, many markets

The same concentrate addresses six verticals, so each new plant and approval compounds the addressable base without a new product line.

Scales with the build-out

Water demand underwrites throughput for the Rotherham HQ and the five-plant global expansion, spreading fixed cost across a growing recurring book.

Approvals held, and the position we are extending

Approvals held

- GB Biocidal Products Regulation (BPR) product authorisation, PT11
- Article 95 active-substance listing
- NSF/ANSI 60 for drinking-water treatment
- DWI Regulation 31 (UK drinking water)
- ISO 9001, 14001 and 45001 management systems
- UKAS-accredited EN efficacy suite on file

Extending the position

- Extending authorisation and registration into the expansion markets: South Africa, UAE, USA, South America and Asia
- Broadening authorised product-types and applications from the water-treatment base
- Every deployment backed by the EN test suite and site-trial data

This slide is a factual regulatory summary, not legal or regulatory advice.

SUPRA PERFECTA

The global standard in disinfection

A single high-purity HOCl active for the whole water estate: proven, certified and ready to deploy.

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