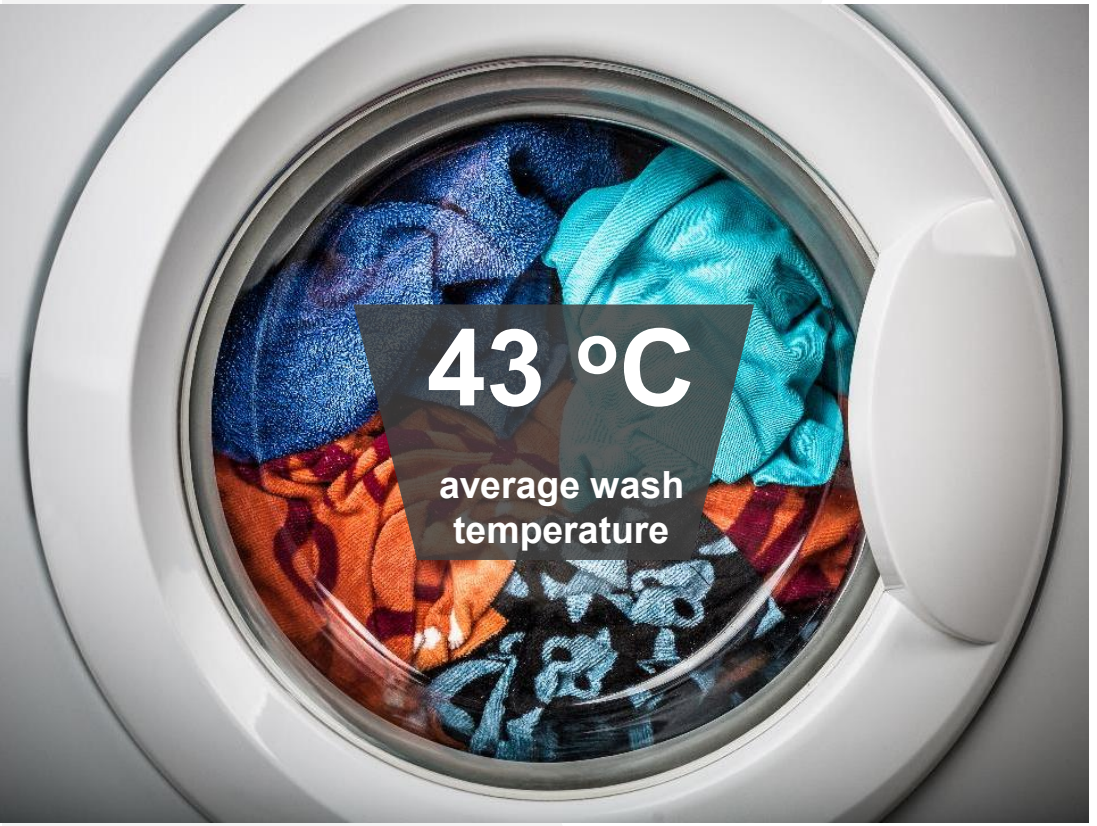
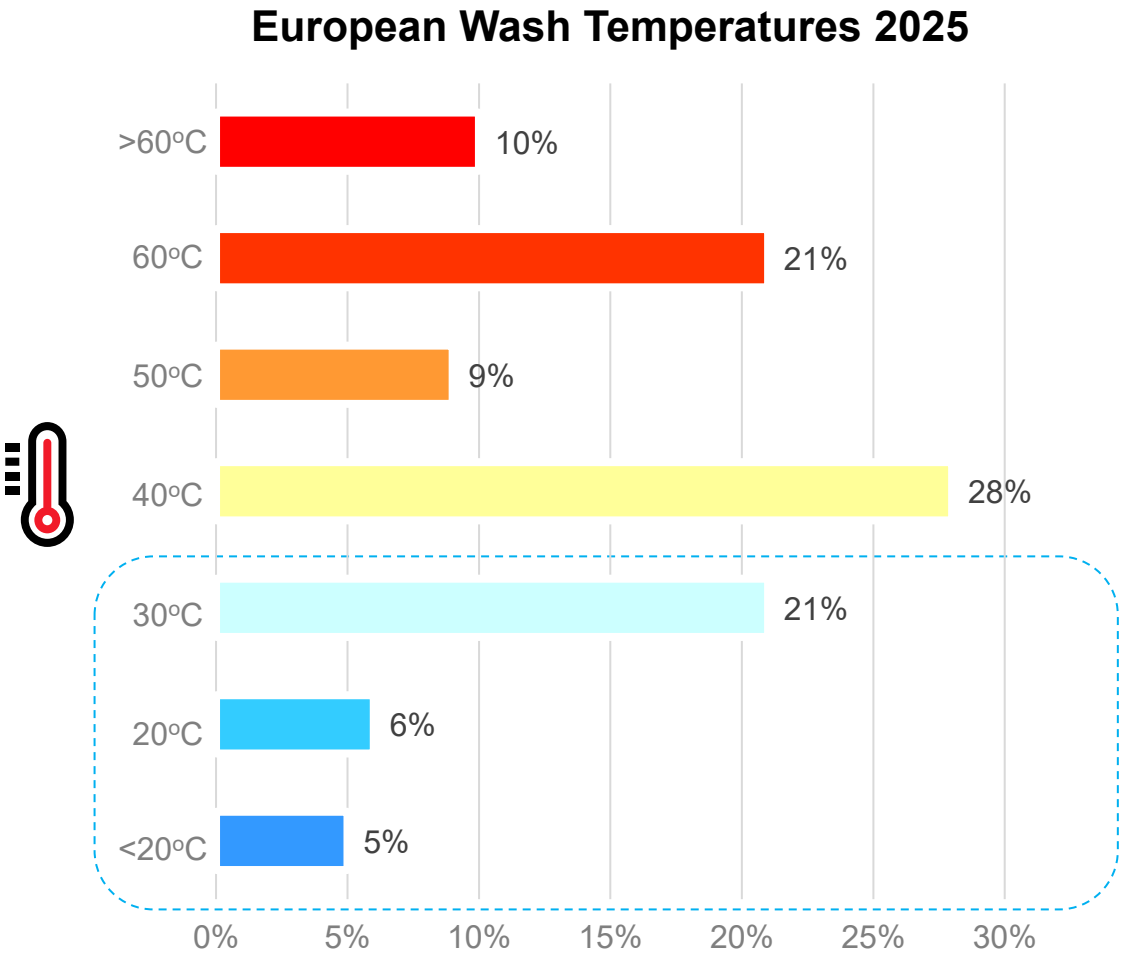


Oxone™ Monopersulfate Compound: The Next-Generation Oxidant for Low-Temperature Laundry Detergents

Dr Kelly Board | ChemUK | May 20th 2026

Consumers still wash hot





Source: A.I.S.E. 2025: A.I.S.E.'s pan-European consumer habits and perceptions research

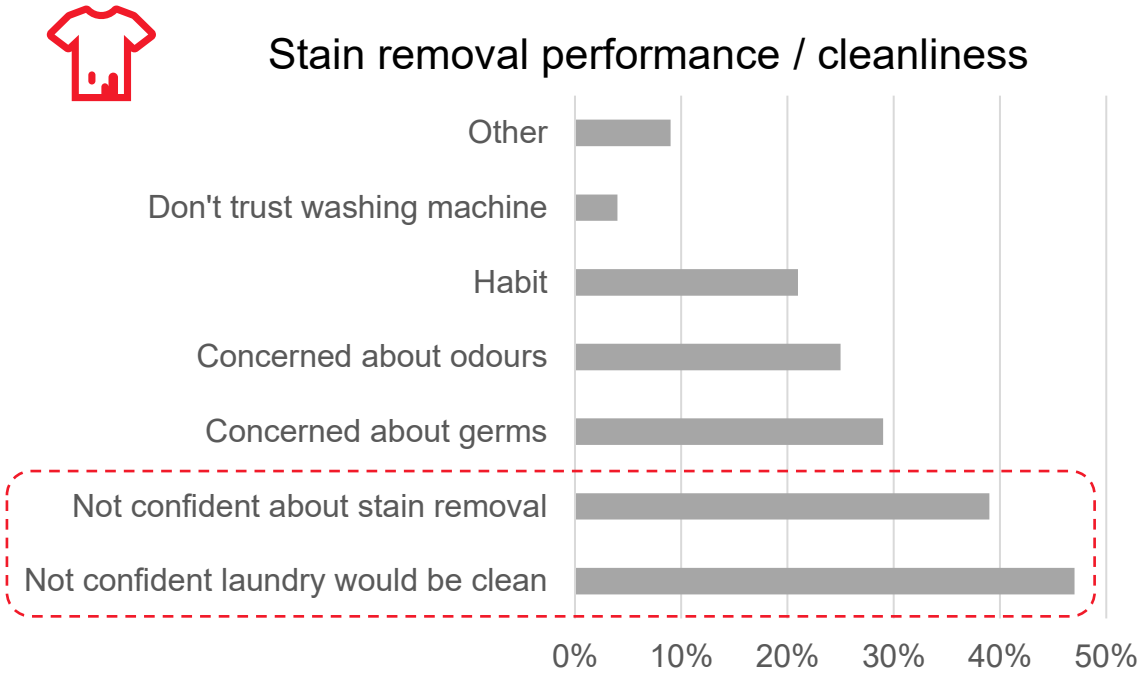
Low temperature (≤ 30 °C) washing saves energy and CO_2

But performance disappoints

Consumer / environment benefits

- Save energy (up to 60% less)
- Extend garment life
- Lower carbon footprint
- Reduce microfibre release

Consumer doubts



Sources: cleanright.eu; Electrolux 2021, “The Truth About Laundry”; A.I.S.E. 2025: A.I.S.E.’s pan-European consumer habits and perceptions research



Consumers demand sustainable cold-wash

48%

expect brands to deliver cold-wash performance for sustainability

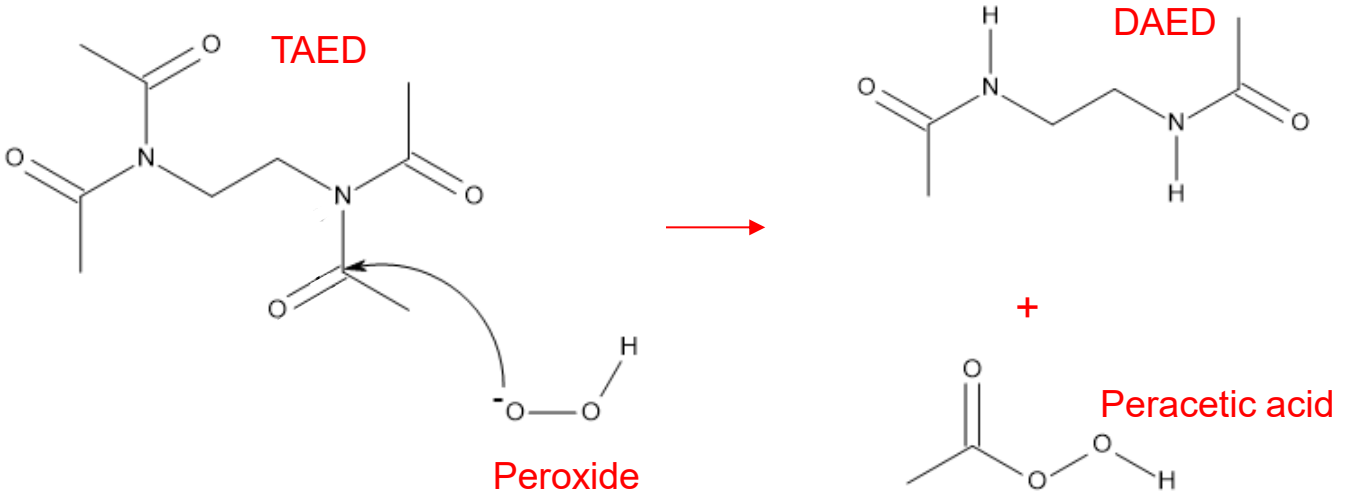
Source: A.I.S.E. 2025: A.I.S.E.'s pan-European consumer habits and perceptions research



Sodium percarbonate (SPC)

Commonly paired with bleach activator, TAED

$$2Na_2CO_3.3H_2O_2 \rightarrow 2Na_2CO_3 + 3H_2O_2$$





Sodium percarbonate (SPC) struggles at low temperature

3 intrinsic properties

Slow reaction kinetics

- Slow kinetics of H_2O_2 vs stains
- Cold water limitation

Poor solubility

- Coating reduces solubility
- Peroxide release delayed

TAED activation diminished

- Dependent on SPC dissolution
- Slow perhydrolysis at low temperatures

Oxone™ Monopersulfate Compound

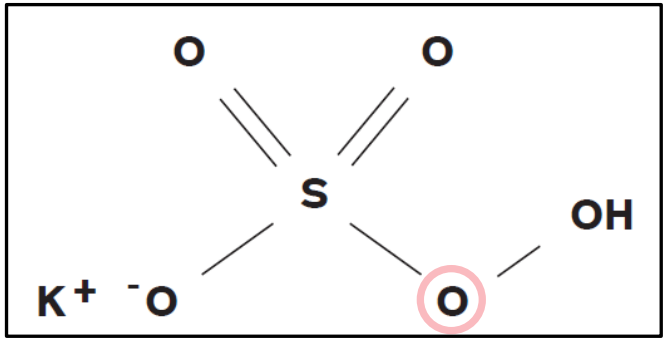
Powerful oxidising agent for low temperature stain removal

Chemistry

- Potassium monopersulfate, KMPS: **$K_5(HSO_5)_2(HSO_4)(SO_4)$**
- Crystalline, peroxygen compound
- Active oxygen ≥ 4.5% AO

Active Oxygen Source

$KHSO_5$



Attributes

- **Strong** oxidizing agent (+1.85 V)
- **Fast** reaction kinetics
- Recommended for **powder, tablet or pod** formats
- Produced **at scale** since the 1950s

Proven history across multiple industries

Oxone™ chemistry for reliable low-temperature stain removal



Dissolves instantly



Outperforms on oxidative stains



Colour safe under lab conditions

01 Solubility Profile

Contrary to sodium percarbonate,

Oxone™ particles dissolve in 10 seconds

Conditions

- **Tap water** (~380 ppm Ca.)
- **Temperature:** 20 ºC
- **Sample size:** 1g / 60 ml
- **Procedure:** Invert cylinder 15x, leave for 5 minutes

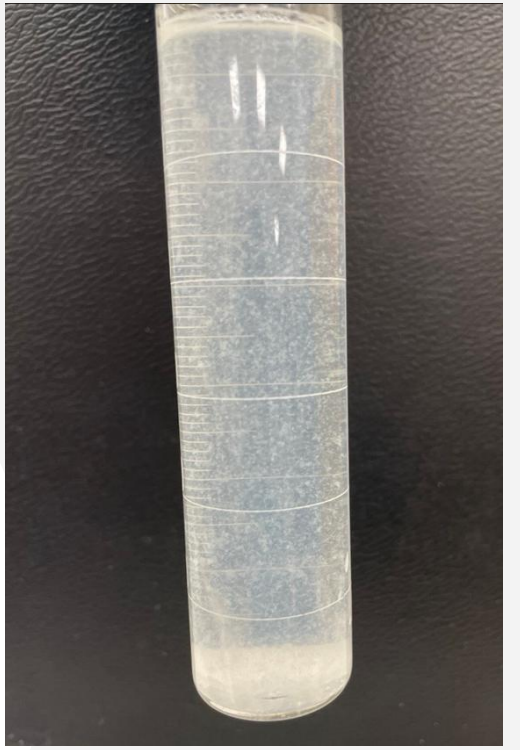
Oxone™ only



Commercial SPC formulation



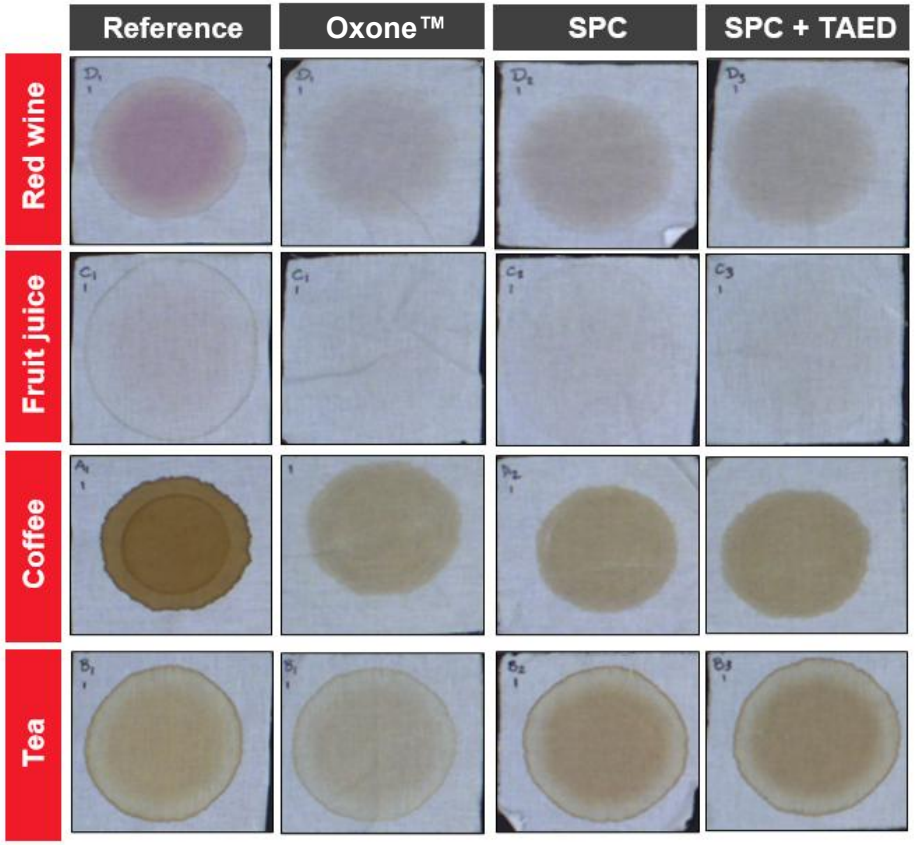
Coated SPC only

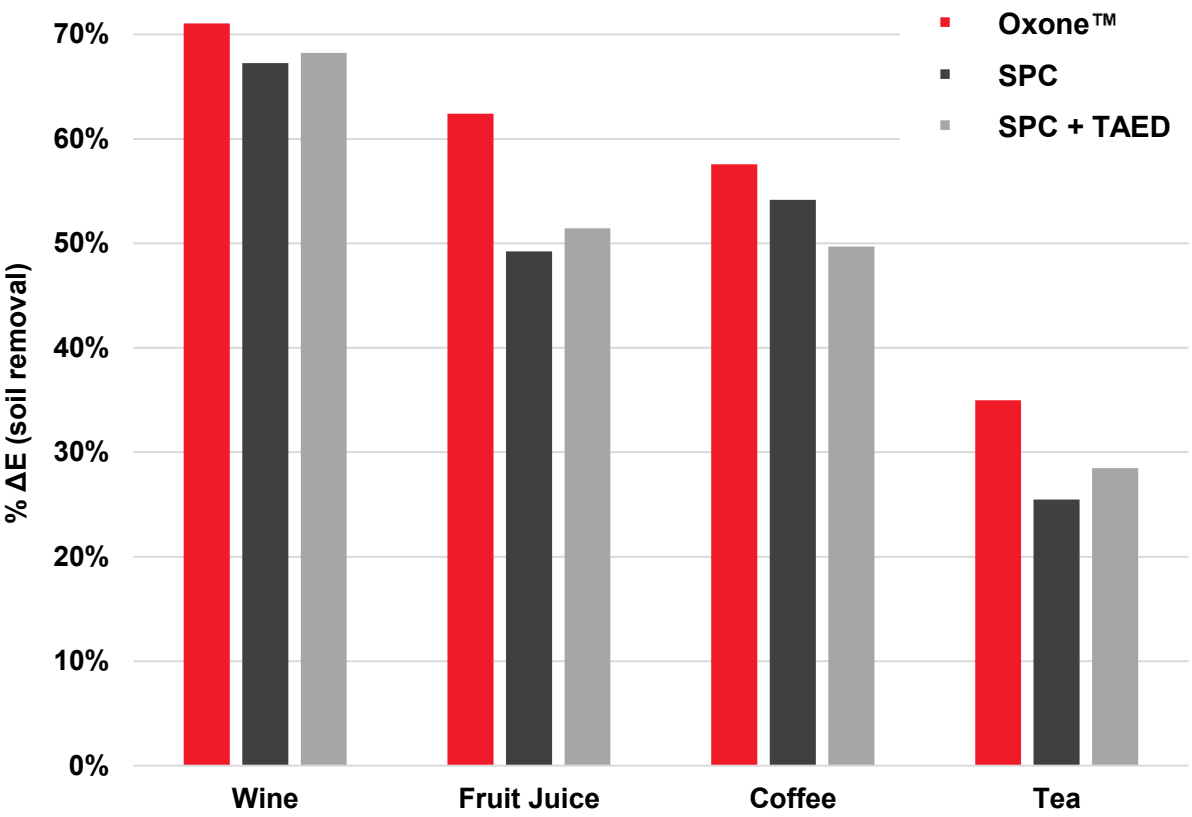


02 Oxidative Stain Removal

Oxone™ chemistry outperforms SPC and SPC+TAED on tough stains at 20 °C

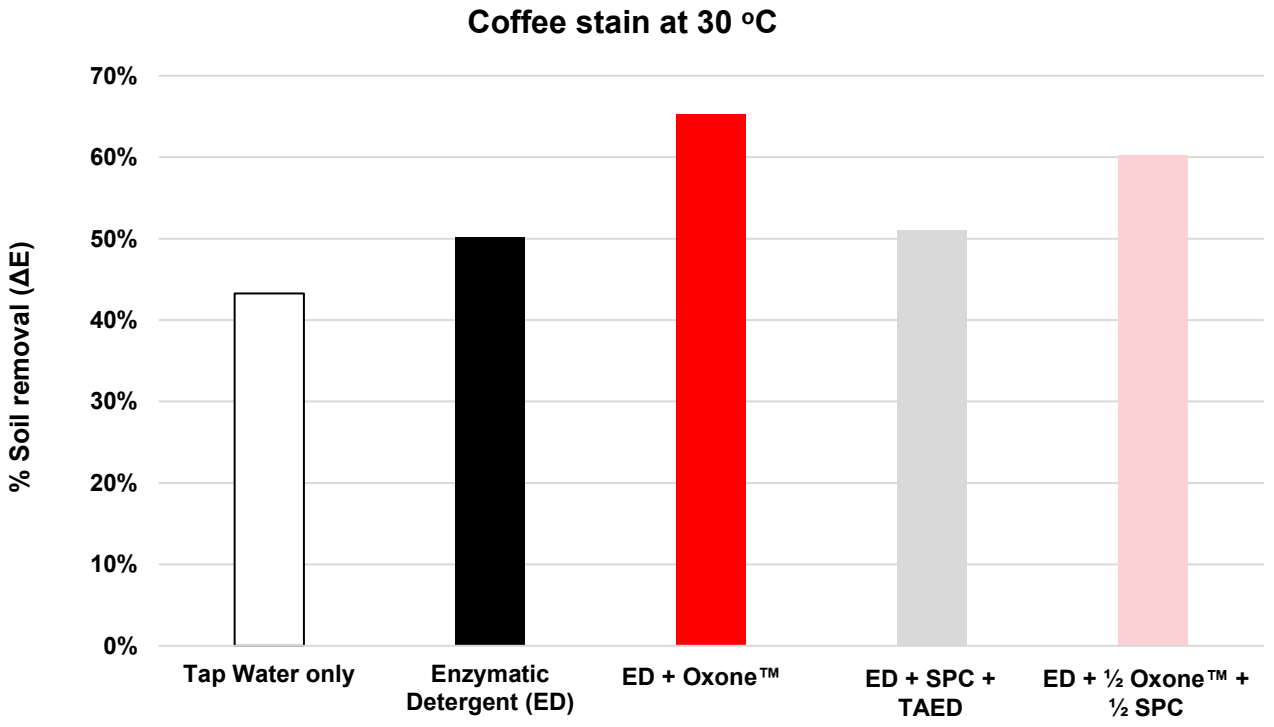
Oxidative stain removal after first wash (45 min cycle, no detergent)

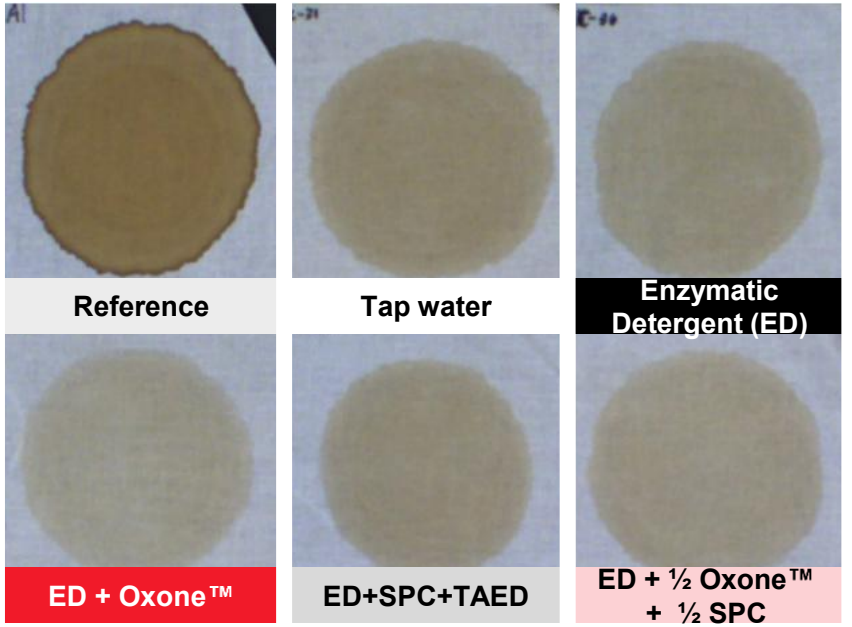




Oxone™:SPC blend outperforms SPC + TAED

Coffee stain removal after first wash (45 min cycle, detergent)





Oxone™ chemistry can boost SPC performance, without TAED

03 Colourfastness Evaluations

Oxone™ chemistry maintains colourfastness

Equal to or better than SPC

Conditions & Procedure

Temperature: 40 °C

Wash cycle: 10x 45 mins

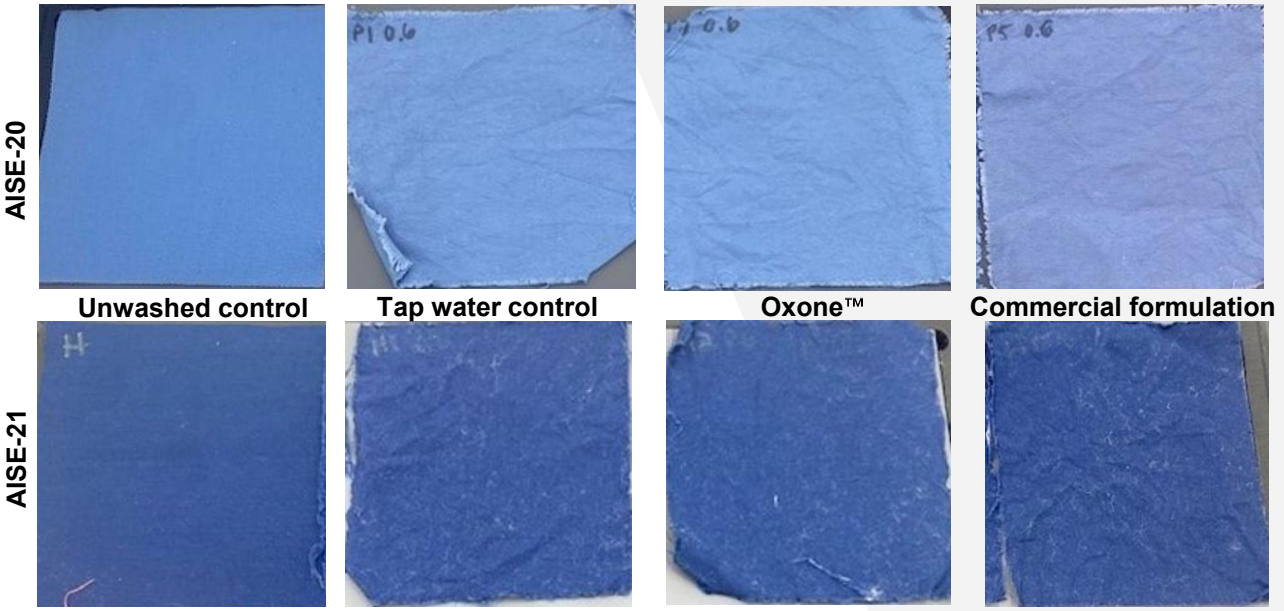
Detergent: 1 ml/l non-enzymatic

Materials:

- AISE-20 Reactive Black Pale Shade
- AISE-21 Reactive Black Heavy Shade

Treatments:

- Oxone™ Monopersulfate Compound
- Commercial SPC formulation

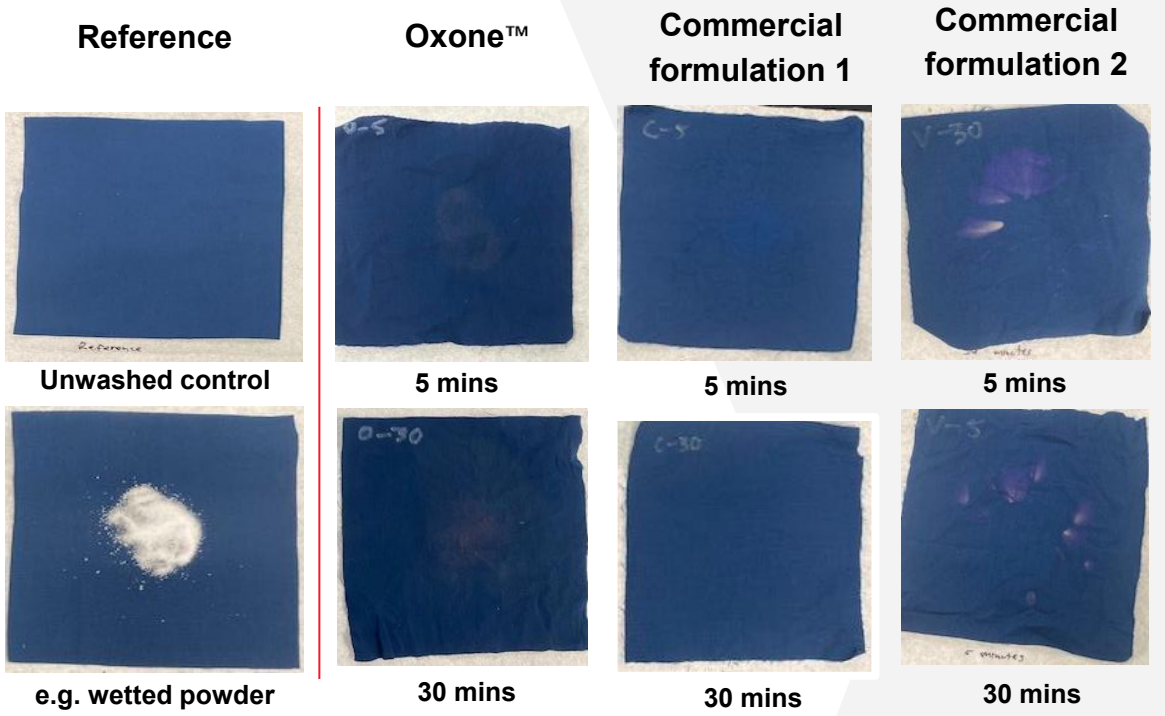


Oxone™ activity under misuse conditions

Impact on AISE-21 fabric comparable to or better than SPC formulations

Conditions & Procedure

- Powder added to swatches (AISE-21)
- Water added to powder
- Swatches rinsed to remove powder after 1, 5, 10, 15, 20, 25, 30 mins
- Swatches soaked for 5 mins & dried at 120 °C



How formulators and consumers benefit from Oxone™ Monopersulfate Compound

Fast solubility

Suitable for low temperatures

Colorfast

Under lab test conditions

Transport advantage

Class 8, not Class 5.1

Excellent oxidative performance

Consumer trust at 30 °C

Lower dosage compared to SPC

Efficiency & compaction

Positive consumer experience

Odourless, non-sensitising



Help consumers embrace low-temperature washing

Performance + Sustainability = Consumer Confidence

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All test figures should be regarded as guide values only and not as binding values. Kindly note that the results refer exclusively to the specific test conditions.

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