

Passivation Metal Descaler

Mild Acid Chemistry · Mild Acid Chemistry · with Non-Abrasive Formula, 1:4 Dilution + Passivation Action

KEY BENEFITS

— Mild acid chemistry	dissolves calcium carbonate, hard-water scale, and surface oxidation through targeted chemical reaction — no abrasive action, no micro-scratching, no polished surface damage.
— Non-abrasive formulation	preserves the passive chromium oxide layer on stainless steel that provides corrosion resistance — aggressive abrasive cleaning destroys this layer, accelerating long-term metal degradation.
— 1:4 dilution — 5L yields 20 litres	cost-effective for large-area metal maintenance across institutional kitchen equipment inventories and architectural metalwork.
— Compatible with FSSAI food safety requirements	rinse protocol after application on food-contact metal surfaces supports kitchen hygiene compliance in institutional catering environments.
— Institutional substrate range	stainless steel, chrome, and treated aluminium — the core metal surface types in healthcare, industrial, and educational catering facilities.
— Dilution	250 ml of concentrate per litre of water (1:4 ratio). Apply with a soft cloth or spray bottle — do not use abrasive pads or steel wool.

AT A GLANCE

pH	Mild acidic (3.5–5.5)
Dilution	250 ml per litre of water (1:4)
Fragrance	Neutral
Pack size	5 Litres concentrate
Shelf life	24 months from date of manufacture, unopened
Safe on	Stainless steel, chrome, treated aluminium, architectural metalwork
Rinse after use	Mandatory on food-contact surfaces — thorough water rinse

HOW TO USE

- 1 Dilution**
250 ml of concentrate per litre of water (1:4 ratio). Apply with a soft cloth or spray bottle — do not use abrasive pads or steel wool.
- 2 Application**
apply in the direction of the metal grain on brushed stainless steel to avoid cross-grain residue lines.
- 3 Contact time**
allow 1–2 minutes for moderate hard-water deposits and light oxidation. Allow up to 5 minutes for heavy scale or persistent discolouration.
- 4 Agitation**
light wiping with a soft cloth during contact time accelerates deposit dissolution. Do not scrub with abrasive materials.
- 5 Rinsing**
rinse thoroughly with clean water after application — mandatory on food-contact surfaces (FSSAI kitchen compliance requirement). Test on inconspicuous area for non-standard alloys.

WHY IT WORKS

Why does mild acid restore stainless steel brightness, and what is the passive layer that makes this possible? Stainless steel's corrosion resistance depends on a passive layer — a microscopically thin (2–5 nm) film of chromium oxide (Cr₂O₃) that forms spontaneously on the steel surface when exposed to oxygen. This layer is chemically inert to most substances at ambient temperature and physically separates the steel substrate from the corrosive environment. When stainless steel appears dull, discoloured, or scaled, it is because mineral deposits and surface oxidation products have accumulated on top of this passive layer — not within it. Mild acid cleaning removes these surface deposits by dissolving them: calcium carbonate reacts with the acid to form soluble calcium salts and carbon dioxide; iron oxides (rust-like discolouration) react to form soluble iron salts; silicate and sulphate scale is partially dissolved and partially loosened for mechanical removal. The mild acid — at carefully controlled concentration — does not dissolve the chromium oxide passive layer itself, because chromium oxide has higher acid resistance than the calcium and iron compounds being targeted. This is the chemical selectivity that makes mild acid metal cleaning restorative rather than damaging. The distinction from abrasive cleaning is fundamental: abrasive pads and powders physically scrape the surface, removing deposits and the passive layer simultaneously. The passive layer then requires time to reform, during which the steel surface is more susceptible to staining and corrosion. Repeated abrasive cleaning thins the passive layer progressively, reducing the stainless steel's long-term corrosion performance. Acid cleaning preserves the passive layer by removing deposits through chemistry rather than mechanical force.

DID YOU KNOW

Fact Stainless steel doesn't rust in the traditional sense — it maintains a thin chromium oxide layer that protects the steel beneath. When you see discolouration or dullness, it is mineral deposits sitting on top of that protective layer. Mild acid removes the deposits without disturbing the chromium oxide — which is why the shine returns without damaging the metal.

WHAT YOU GET FROM ONE PACK

250 ml per litre.

One 5-litre pack. 20 litres of working metal cleaner. At 1:4 dilution, a single 5L concentrate produces 20 litres of working solution. For a hospital dietary department with 50 sq metres of stainless steel kitchen equipment surfaces cleaned weekly, one 5L pack covers approximately 3–4 months of regular metal maintenance. The surface condition improvement from converting abrasive to acid-clean protocol is cumulative — polished surfaces maintained without abrasive damage retain their passive layer and resist future staining, reducing cleaning frequency requirement over time.

FULL PRODUCT SPECIFICATIONS

Active system	Mild inorganic acid + surfactant — mineral deposit dissolution
pH	Mild acidic (3.5–5.5)
Specific gravity	1.02–1.05 at 25°C
Formulation type	Aqueous concentrate
Appearance	Clear to slightly amber liquid
Fragrance	Neutral
Dilution	250 ml per litre of water (1:4)
Application	Soft cloth or spray — direction of metal grain
Safe on	Stainless steel, chrome, treated aluminium, architectural metalwork
Avoid on	Copper, brass, reactive metals — test before use
Rinse after use	Mandatory on food-contact surfaces — thorough water rinse
PPE	Gloves recommended
Shelf life	24 months from date of manufacture, unopened
Pack size	5 Litres concentrate
MSDS / TDS	QR code on label · Available on request

CAUTION & STORAGE

Handle with care.

For professional and institutional use. Mild acid — avoid prolonged skin contact and eye contact. Wear chemical-resistant gloves during application. In case of eye contact, rinse immediately with copious water for 15 minutes and seek medical advice. Do not use on copper, brass, or reactive metals without prior testing — acid contact with reactive metals may cause surface discolouration or damage. Do not mix with alkaline cleaners or bleach. Store in original sealed container below 30°C, away from metal storage equipment, alkaline materials, and heat sources. Keep container tightly closed when not in use — acid vapours can corrode surrounding metals. Shelf life 24 months from manufacture date, unopened. In case of spillage, neutralise with sodium bicarbonate solution.

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BEFORE YOU START — PPE REQUIRED

- ✓ Chemical-resistant gloves (nitrile)
- ✓ Safety goggles / eye protection

QUICK REFERENCE

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HAZARD ! MODERATE

DO

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- ✓ Wear chemical-resistant gloves during application.
- ✓ In case of eye contact, rinse immediately with copious water for 15 minutes and seek medical advice.
- ✓ Store in original sealed container below 30°C, away from metal storage equipment, alkaline materials, and heat sources.

DON'T

- ✗ Mild acid — avoid prolonged skin contact and eye contact.
- ✗ Do not use on copper, brass, or reactive metals without prior testing — acid contact with reactive metals may cause surface discolouration or damage.
- ✗ Do not mix with alkaline cleaners or bleach.

Emergency / questions: care@allesclinx.com · allesclinx.com · National Poison Control (India): 1800-116-117