

INSTANT

RUST TRAPP®

HYDROGEN-ION RUST REMOVAL WITH INTEGRATED TRASER TECHNOLOGY

INTRODUCING //

**OXYGEN CREATES THE RUST.
HYDROGEN IONS REMOVE IT.**

Instant RustTrapp® is a concentrated industrial powder designed to remove rust and iron-oxide deposits using a proprietary hydrogen-ion, sulfamate-based chemistry. It dissolves oxide layers while helping keep released iron in solution, with integrated TRASER Technology providing a visible indication of the solution's remaining activity.

THREE STEPS: RELEASE, REMOVE, SEE

Release H⁺

The concentrated powder dissolves in water and releases the hydrogen ions required to attack and dissolve iron oxides and hydroxides.

Remove & Hold

The acidic sulfamate-based system attacks iron oxides while complexing dissolved iron to reduce re-deposition onto the cleaned surface.

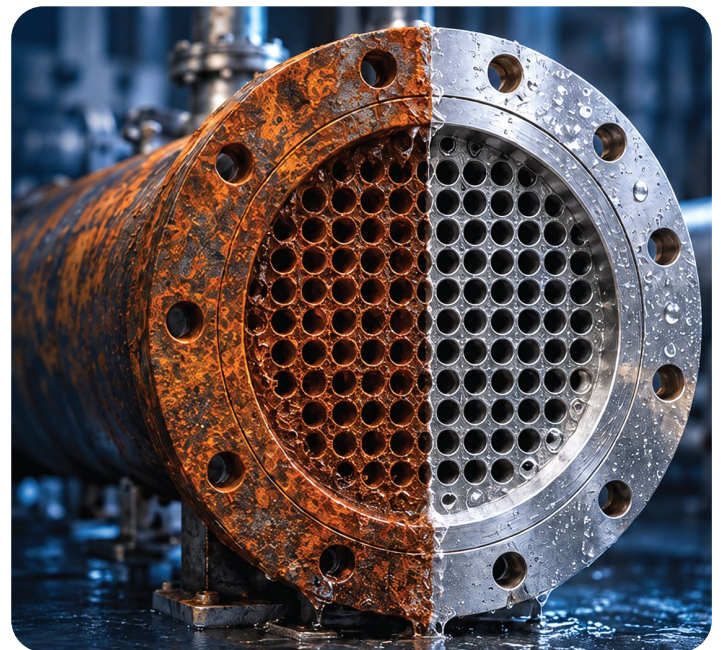
See the Endpoint

Integrated TRASER Technology changes from red through orange to yellow as the active acidity is consumed during rust removal.

RED
ACTIVE

ORANGE
WEAKENING

YELLOW ~pH 4.5
REPLACE



APPLICATIONS //



Structural
Steel



Rusted
Piping



Heat
Exchangers



Industrial
Hardware



Cast-Iron
Components



Closed-Loop
Systems



PREMIUM QUALITY
MADE IN GERMANY

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FILTERSORB

FILTRATION

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INSTANT PRODUCTS

OXY TREATMENT

SYSTEMS



WHY OXYGEN GENERATES CORROSION & RUST

CORROSION IS AN ELECTROCHEMICAL OXYGEN PROCESS

Iron does not rust because oxygen acts alone. Rust develops when iron or steel, water, dissolved oxygen, and an electrically conductive path exist together. Different points on the metal surface become anodic and cathodic sites, creating a microscopic corrosion cell.



IRON / STEEL

The metal supplies iron atoms and electrons



WATER

Moisture provides the liquid reaction path.



OXYGEN

Dissolved O₂ accepts electrons at cathodic sites.



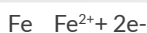
ELECTROLYTE

Salts and acidity increase conductivity.

THE ELECTROCHEMICAL CORROSION CYCLE

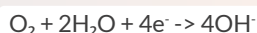
ANODIC METAL LOSS

At anodic sites, iron is oxidized and enters the water as dissolved ferrous ions while releasing electrons.



OXYGEN REDUCTION

At cathodic sites in aerated neutral water, dissolved oxygen consumes electrons and forms hydroxide.



RUST FORMATION

Iron ions react further with hydroxide, oxygen, and water to create mixtures of hydrated iron oxides and oxyhydroxides - what we call rust.

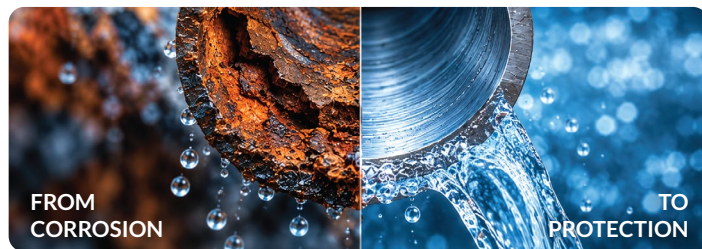
WHAT THE PRODUCT DELIVERS

ADJUSTABLE STRENGTH, MULTIPLE METHODS

- Adjustable working solutions - 5%, 10%, or 20% for light staining through heavy oxide deposits
- Immersion, controlled spray/gel, and closed-loop recirculation for components and installed equipment
- Dry-concentrate logistics - less water transported, compact storage, fresh preparation at the job site
- Built-in TRASER Technology - red means active, orange means weakening, yellow at ~pH 4.5 means replace

GERMAN ENGINEERING & PRODUCTION

TARGETED REMOVAL. PERMANENT PROTECTION.

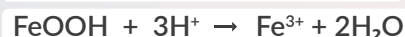


HYDROGEN-ION REMOVAL MECHANISM

WATER ACTIVATES THE POWDER CHEMISTRY

When **Instant RustTrapp[®]** is added to water, its proprietary acidic system releases hydrogen ions (H⁺). In water these exist as hydrated acidic species, but H⁺ is the practical chemical notation. The hydrogen ions protonate oxygen-containing rust structures and convert the solid oxide into dissolved iron species and water.

Representative Oxide Dissolution



Iron(III) oxide · Iron oxyhydroxide · Magnetite

WHY RUST KEEPS GROWING

Driver	Practical Result
Oxygen renewal	Corrosion continues beneath and through porous rust
Moisture	Wet/dry cycling repeatedly activates the corrosion cell
Dissolved salts	Faster attack, deeper pits, difficult residues
Porous deposits	Rust becomes layered, uneven, mechanically unstable



FOUR FUNCTIONS WORKING TOGETHER

H+ ATTACK

Hydrogen ions break oxygen-metal bonding within the oxide and hydroxide layers.

COMPLEX & HOLD

Liberated iron is held in solution to reduce re-deposition during

CONDITION

Metaphosphate chemistry supports the short rinse, dry, and coating window.

TRASER

Red shows active acidity; orange shows weakening; yellow near pH 4.5 means replace.



HYDROGEN IONS ARE CONSUMED AS THEY WORK

- Fresh solution has the highest acidity for its concentration
- Rust and alkaline contamination progressively consume the acid
- TRASER changes red orange yellow as pH rises
- At approximately pH 4.5: exhausted — drain and replace

H⁺ means hydrogen ions in solution - not to be confused with hydrogen gas (H₂), which can evolve if acid contacts exposed reactive metal. Provide ventilation and eliminate

CHEMICAL REACTION ATLAS

HOW OXYGEN BUILDS RUST - STEP BY STEP

Corrosion is an electrochemical sequence. **Real rust is a mixture of phases** - these equations summarize the overall chemical direction.

HOW OXYGEN BUILDS RUST FIVE-STEP CORROSION PATHWAY

01 | ANODIC IRON DISSOLUTION



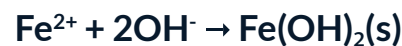
Iron atoms leave the metal lattice as soluble ferrous ions and release electrons.

02 | CATHODIC OXYGEN REDUCTION



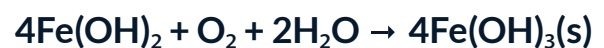
Dissolved oxygen accepts electrons at cathodic sites and produces hydroxide ions.

03 | INITIAL HYDROXIDE FORMATION



Ferrous ions and hydroxide combine to form an initial solid corrosion product.

04 | OXIDATION IN AERATED WATER



Continued oxygen exposure oxidizes ferrous hydroxide toward ferric hydrated products.

05 | AGING OF HYDRATED RUST



Loss of water and structural rearrangement produce iron oxyhydroxide phases found in rust

SIMPLIFIED OVERALL AERATED-CORROSION PATHWAY



Real rust is a mixture of phases; this equation summarizes the overall chemical direction.

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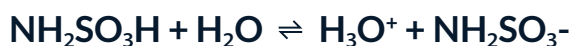


HOW INSTANT RUSTTRAPP[®] BREAKS THE CYCLE

FOUR-STEP REMOVAL PATHWAY

Freshly prepared solution supplies hydrogen ions for oxide dissolution. Metaphosphate functionality then helps complex

01 | HYDROGEN-ION GENERATION



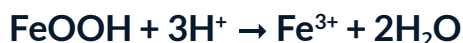
The sulfamate-based acidic system transfers a proton to water and creates hydronium acidity.

02 | RED-BROWN OXIDE DISSOLUTION



Hydrogen ions protonate oxide oxygen and convert solid iron(III) oxide into dissolved iron species.

03 | HYDRATED RUST DISSOLUTION



Iron oxyhydroxide is converted from a solid deposit into dissolved ferric species and water.

04 | BLACK OXIDE DISSOLUTION



Mixed-valence magnetite releases both ferrous and ferric ions during acid dissolution

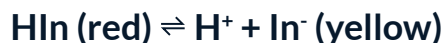
IRON CONTROL, TRASER RESPONSE & FRESH-MIX LOGIC

COMPLEX & HOLD



Polyphosphate functionality helps retain released iron in the liquid phase and limits immediate re-deposition.

VISIBLE TRASER



Methyl-orange chemistry changes across approximately pH 3.1-4.4, displaying declining acidity.

Fresh-mix logic: Polyphosphate + H₂O → shorter-chain phosphates → orthophosphate. Acidity, heat and storage time accelerate hydrolysis - dry concentrate preserves the chemistry until use.

MATERIAL COMPATIBILITY

Category	Materials
Primary use	Carbon steel, cast iron, many tool steels
Conditional	Stainless steel; aluminum and aluminum alloys
High risk	Galvanized / zinc-coated steel
Do not use	Zinc, magnesium alloys, marble, limestone, carbonate stone
Non-metallics	Plastics, rubber, seals, linings

FROM RUSTED SURFACE TO CONTROLLED CLEAN.





UNDERSTANDING THE CORROSION CHALLENGE

RUST IS NOT ONE UNIFORM MATERIAL

Industrial rust layers are usually porous, chemically mixed, and mechanically uneven. They may contain hydrated iron oxides such as FeOOH , red-brown Fe_2O_3 -rich phases, darker Fe_3O_4 -rich phases, embedded salts, oil, process residues, and compact scale. Successful cleaning therefore depends on access, wetting, oxide loading, time, solution movement, and the base-metal condition - not concentration alone.

POROUS RED-BROWN RUST

Often easier to wet and detach, but deep pits can retain oxide and dissolved salts. Mechanical pre-cleaning improves chemical access.

DENSE BLACK OXIDE

Magnetite-rich or heat-formed scale may react more slowly. Circulation, replenishment, and staged cleaning can be more effective than simply increasing concentration.

MIXED CONTAMINATION

Oil, grease, paint, carbonate scale, and process deposits can shield rust. Remove incompatible surface contamination before the acid cleaning stage.

SIX STAGES, FROM ACCESS TO PROTECTION

Stage	Technical Purpose
1. Access	Remove loose flakes, oil, grease and barriers to wetting
2. Wet	Bring fresh solution into contact with pores, pits, crevices
3. React	Convert and dissolve oxide phases into soluble species
4. Hold	Complex dissolved iron, reduce transport back to surface
5. Rinse	Remove reaction residues before they dry on the metal
6. Protect	Use the conditioning window to dry and apply final protection

Knowledge point: a stronger bath does not automatically mean a better result. The safest effective condition is the lowest validated concentration, exposure and temperature that achieves the required surface condition.

PROPRIETARY DUAL-ACTION CHEMISTRY

HOW INSTANT RUSTTRAPP® WORKS

01 | WET & PENETRATE

Freshly prepared solution enters porous layers, pits, threaded zones, weld profiles and crevices. Pre-cleaning oil and loose scale is essential.



02 | DISSOLVE & COMPLEX

The sulfamate-based system protonates and breaks down iron-oxide structures, keeping liberated iron in the liquid phase.



03 | CONDITION SURFACE

Metaphosphate-based package supports temporary conditioning; prompt rinsing and drying remain mandatory.



Controlled Function	Practical Meaning
Acidic oxide attack	Base-metal exposure must be limited by inspection
Iron complexation	Capacity is finite and declines as the bath loads
Surface conditioning	Temporary - not a permanent conversion coating
Adjustable concentration	Does not replace compatibility testing or monitoring

Watch Water® focuses on proven technical performance while protecting proprietary formulations. Claims are validated under defined conditions, and surface preparation follows a complete clean, remove, rinse, dry, inspect, and protect process.

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WORKING-SOLUTION SELECTION

THREE LEVELS, ONE PRODUCT

Level	Conc.	Yield / 25 kg	Typical Use
Light	5% (50 g/L)	500 L	Flash rust, staining, routine maintenance
Standard	10% (100 g/L)	250 L	General rust, hardware, structural steel, piping.
Heavy	20% (200 g/L)	125 L	Heavy deposits after removal of loose crust; validate carefully.

SAFE PREPARATION SEQUENCE

- Charge Water**
Clean, compatible mixing vessel; controlled agitation.
- Add Powder Slowly**
Never pour water onto a pile of dry powder.
- Mix Completely**
Continue agitation until the solution is uniform.
- Confirm Condition**
Record batch, water volume, powder mass, temperature.
- Run a Coupon Trial**
Validate on the actual alloy, coating, weld and seal materials.

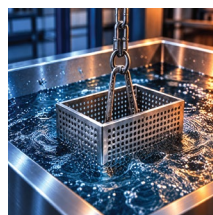


Critical Mixing Rule

Always add powder to water under agitation. Do not mix with bleach/hypochlorite, oxidizers, alkaline cleaners, sulfides, cyanides, or unconfirmed chemicals.

APPLICATION METHODS & COMPATIBILITY

CHOOSE THE METHOD AROUND THE EQUIPMENT

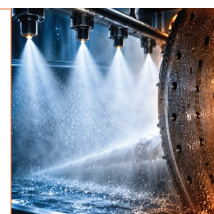


IMMERSION / DIP TANK

Removable parts and complex shapes; compatible tank with agitation and full coverage.

SPRAY / APPROVED GEL

Large or vertical surfaces; validated thickener and delivery system only.



CLOSED-LOOP CIRCULATION

Heat exchangers, pipework and jackets; isolate the asset, vent safely, circulate through a strainer.

CLOSED-LOOP ENGINEERING CHECKLIST

BEFORE STARTING

- Define the wetted metallurgy, total circuit volume, deposits, and elastomer/seal materials.
- Provide a chemically compatible temporary tank, pump, hoses, fittings, and return strainer.
- Arrange flow so trapped air can escape and every branch receives circulation.
- Keep the circuit isolated from production chemicals and from potable-water service.

DURING & AFTER CLEANING

- Monitor solution appearance, flow, temperature, reaction behavior, and metal condition at planned intervals.
- Stop when the required cleanliness is achieved or when base-metal attack, leaks, abnormal gas evolution, or heat is observed.
- Drain completely, rinse until residues are removed, dry promptly, inspect, and apply final protection where specified.
- Collect the used solution and rinse water for compliant characterization and disposal.



BATH MANAGEMENT & SAFETY

DECISION POINTS & MANDATORY DISCIPLINE

BATH STILL SERVICEABLE

Uniform circulation; predictable reaction; oxide removal continues; no abnormal heating or gas evolution; no visible precipitation or heavy carryover; test coupon remains

REVIEW / ADJUST

Removal rate falls, dissolved-metal loading rises, solids accumulate, coverage becomes uneven, or solution is diluted by rinse water. Investigate before adding more powder.

STOP & REPLACE

Cleaning no longer progresses, contamination is unknown, compatibility changes, control limits are exceeded, or unsafe reaction behavior occurs. Do not restore a spent bath by guesswork.

BREAK DOWN RUST. HOLD IRON. CONTROL THE PROCESS.

RECOMMENDED BATCH RECORD

- Product batch number; date; operator; equipment identification; water source and starting volume.
- Powder mass; calculated concentration; preparation sequence; initial appearance and temperature.
- Substrate/alloy; deposit description; pre-cleaning performed; application method and circulation conditions.
- Inspection times; observations; coupon result; endpoint decision; rinse and drying completion.

For repeat production work, Watch Water recommends establishing customer-specific control limits through laboratory titration, dissolved-metal analysis, mass-loss coupons, and documented surface acceptance criteria.

SAFETY, HANDLING & ENVIRONMENTAL CONTROL

INDUSTRIAL CHEMICAL DISCIPLINE IS MANDATORY

Instant RustTrapp® is an acidic industrial cleaning product. The Safety Data Sheet (SDS), product label, site risk assessment, and applicable law take precedence over this brochure. Only trained personnel should prepare and use the product.



PERSONAL PROTECTION

Use chemical-resistant gloves and clothing, splash goggles and face protection as required by the SDS and risk assessment. Provide clean water for emergency washing. Control powder dust and liquid spray.

VENTILATION & GAS RISK

Acid contact with reactive or bare metals can evolve hydrogen. Work with adequate ventilation, eliminate ignition sources, never seal a reacting vessel, and maintain safe venting of tanks and circuits.

CHEMICAL SEGREGATION

Keep away from bleach/hypochlorite, oxidizers, alkalis, sulfides, cyanides, and unapproved chemicals. Use dedicated, labeled equipment and prevent cross-contamination.

NEVER MIX CHEMICALS TO 'NEUTRALIZE' BY GUESSWORK

Neutralization and wastewater treatment can release heat, gas, precipitates, and metal-rich sludge. They require a designed procedure, compatible equipment, controlled dosing, and verification by competent personnel.

**FILTERSORB
FILTRATION
ADSORPTION**

INSTANT PRODUCTS

**OXY TREATMENT
SYSTEMS**



SPECIFICATION SUMMARY

TECHNICAL PRODUCT SUMMARY

Attribute	Description
Product Form	Concentrated industrial powder
Chemistry Platform	Sulfamate-based acidic + iron-complexing + metaphosphate conditioning
Working Strengths	5% / 10% / 20%, subject to validation
TRASER Technology	Red active → orange weakening → yellow ~pH 4.5 replace
Application Methods	Immersion, spray/gel, closed-loop recirculation
Primary Substrates	Carbon steel and cast iron

WHY POWDER CHEMISTRY CHANGES THE LOGISTICS

SHIP ACTIVE MATERIAL

Water is added at the point of use, reducing the need to transport and warehouse large volumes of pre-diluted cleaner.

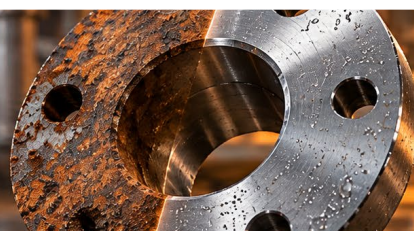
SELECT FIELD STRENGTH

One product supports different validated concentrations, helping the operator match the working solution to the cleaning challenge.

PREPARE ONLY WHAT IS NEEDED

Planned batch preparation can reduce leftover working solution while preserving product identity and process traceability.

**FROM RUSTED SURFACE TO
READY-TO-PROTECT -
ONE CONTROLLED PROCESS.**



WATCH WATER'S INDUSTRIAL PHILOSOPHY

REMOVE. HOLD. CONTROL. PROTECT.

We do not sell a bottle of diluted water. We deliver concentrated treatment technology, a defined application process, and the technical discipline required to obtain a repeatable industrial result.

Performance must be confirmed under the actual operating conditions. Product development, customer trials, and commercial claims must remain connected by evidence.



Standard Packaging

Packaging	Weight of product	Quantity/pallet	Gross Wt./pallet
Box (4 × 6 kg buckets)	24 kg	48	1250 kg
Drum	60 kg	18	1163 kg

★ Other packaging can be considered on request

