

CORROSION PREVENTIVE LIQUIDS



DAUBERT CROMWELL

The Leading Name in Corrosion Prevention®



TRANSIT COATINGS

RUST REMOVERS

INDOOR/ OUTDOOR PROTECTION

INTERNAL METALWORKING
PROTECTION

SPECIALTY SOLUTIONS

Daubert Cromwell offers a complete line of corrosion inhibitor liquids, oils and coatings to protect exposed metals and unpainted metal parts at all stages of their lifecycle -- during manufacture, use, storage, export, lay-up and preservation.

Whether the application calls for:

- Transit coatings
- Removing rust
- A final rinse additive
- A fogging agent to protect internal voids and cavities in large equipment
- Lubricant to protect equipment going into seasonal lay-up, mothballing and storage

...Daubert Cromwell has the product and expertise to assist you

Typical Applications:

- Closed systems (boilers, tanks, piping)
- Cleaning agent
- Unpainted metal parts
- Seasonal equipment (snowmobiles, lawnmowers, recreational equipment)
- Metal processing lubricants
- Final rinse
- Mothballing



To determine the correct product for your application, take the METFAR test:

M- Metal or plastic type, shape, surface condition or profile?

E- Exposure. Outside, indoors, under cover, hot, cold, oceanside, or inland?

T- Time. One month to five years duration of protection?

F- Film characteristic. Oily, hard, soft, color, pliable, etc.?

A- Application. How will it be applied? Dip, spray (type of spray), desired dry time, bake, force dry, etc.?

R- Removable. Will it have to be removed? If so, what is available?

Also, you may consider:

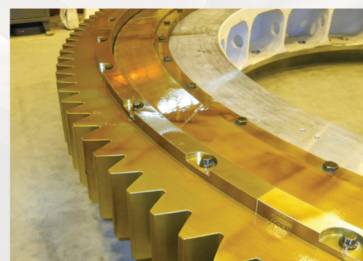
- Environmental aspects. Volatile Organic Content (VOC) limitations
- Disposal of waste, emission regulations
- Specifications. Military, corporate, desired
- Plant conditions – humidity, location, ventilation, housekeeping, workers.



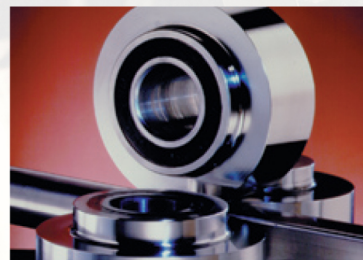
Intricate Parts Protection



Large Parts & Assemblies



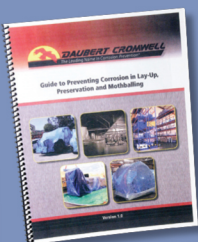
Precision Components



Closed Systems Lubrication



Metal Parts Protection



The "Guide to Preventing Corrosion in Lay-Up, Preservation and Mothballing" is a resource for choosing products and methods that prevent corrosion on typical plant equipment. It is intended as a starting point for assessing and understanding your product and installation options. The guideline will help you make comparisons that meet your preservation project needs. For a copy of the manual and application assistance, consult your Daubert Cromwell Sales Representative.

Water-based, acid-free, fast-acting rust removers

Evapo-Rust® is a biodegradable, reusable, pH neutral rust remover proven effective on all types of mild steel and iron. The water-based, non-corrosive soak solution works safely and quickly to remove rust from ferrous metals without harming vinyl, plastic, rubber, glass or wood.

Typical Applications:

- Engines
- Gears, Bearings
- Automotive
- Machine Shops
- Manufacturing
- Tools, Spare Parts

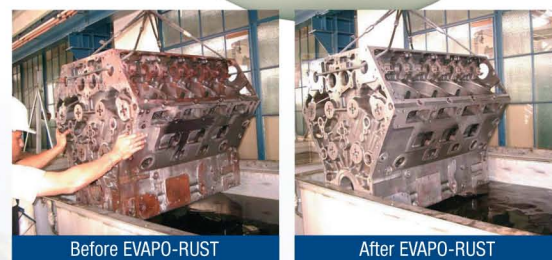
One gallon de-rusts up to 300 lbs. of moderately rusted steel

Features:

- Safe on multi surfaces
- Will not pit unrusted steel
- No VOC'S or HAP's
- No acids or bases
- Non-toxic and biodegradable
- Non-corrosive and non-flammable

Guidelines For Use

Pre-clean items to remove oil and dirt. Rinse items and immerse fully in Evapo-Rust. (Works best when the solution is at 60°F or higher.) Soak time varies with severity of rust. Light surface rust will require 5-30 minutes, moderate rust up to 4 hours, and deeply rusted parts may require overnight soaking. Once rust is removed, rinse item with water, dry. To prevent re-rusting, simply dip the item back in Evapo-Rust and allow to dry. Package the clean part with Daubert Cromwell VCI products for best results.



RUST REMOVERS				
PRODUCT	METALS PROTECTED	DESCRIPTION	RECOMMENDED FOR	APPLICATION METHOD
Evapo-Rust®	Ferrous metals.	Biodegradable, non-acidic, non-flammable, non-toxic rust remover. Water-based. Will not remove paint or chrome, specifically used on iron oxide. Works best at 60°F or higher in dip/soak application. Safe for plastic and non-ferrous metals.	Automotive parts, military spares, tools, fabricated metal parts, components and assemblies.	Immerse rusted parts into Evapo-Rust. Soak part until rust dissolves.
Nox-Rust Premium Rust Removing Gel	Ferrous metals.	Biodegradable, non-acidic, water-based, thick gel for removing rust when a dipping application is not possible. Apply by brush, roller or spray. Works quickly to loosen surface rust on ferrous surfaces, and will not harm most other surfaces.	Vertical metal surfaces, including metal lockers, partitions, hand rails, tools, vehicles, equipment that is too large or heavy to dip in Evapo-Rust.	Brush on liberally. Light rust will loosen in 15-20 minutes. Wipe or rinse clean.

Nox-Rust Premium Rust Removing Gel is a water-based, fast-acting, brush-on gel that safely and effectively restores metal surfaces. The thick, odorless and acid-free gel works without scrubbing or sandblasting. It begins to remove light rust within 15 minutes. When rust is completely dissolved, wipe or rinse gel away. The clean part is ready for next process, storage or shipment.

Typical Applications:

- Vertical surfaces that cannot be immersed in rust remover liquids.
- Large metal components, assemblies and machinery
- Automotive parts
- Tools
- Metal cabinets, walls, dividers
- Hand rails, posts, racks
- Lockers, bleachers, bathroom partitions.

Features:

- Water-based, non-hazardous.
- Safe on multi-surfaces.
- Will not harm paint or rubber.
- No VOC's or HAP's.
- No acids or bases.
- Non-toxic, biodegradable.
- Easy to use. No special handling required.



Guidelines For Use

Pre-clean item to remove dirt, debris, oil, and grease. Using a short bristle brush or roller, apply thick layer of Nox-Rust gel over rusted area. Leave surface covered for 15-20 minutes, or until rust begins to loosen. No scrubbing is necessary. De-rusting times will vary, depending on severity of rust, type of steel, and temperature. For best results, use gel in temperatures at or above 50° F. Do not leave gel on metal overnight to prevent hardening.

Nox-Rust Corrosion Inhibitor Liquids for Metals

INTERNAL METALWORKING PROTECTION

PRODUCT	METALS PROTECTED	DESCRIPTION	RECOMMENDED FOR	LENGTH OF PROTECTION	APPLICATION METHOD	REMOVAL METHOD
Nox-Rust 1100	Multi-metals	Internal combustion engine lubricating oil with a VCI compound. Intended for use as a preservative/additive for enclosed systems to provide protection above the fuel/oil level.	Fuel tanks, gear housing, storage tanks, clutch compartments, cylinders, crankcases, transmissions, hydraulic and coolant circulating systems, enclosed metal containers.	1-5 years in a sealed system. Inspect every 2 years.	Dip, spray, fog.	Not necessary.
Nox-Rust 1101	Multi-metals; steel, iron, zinc, aluminum.	Use in closed systems where a combination of metals are present, including steel, iron, zinc, brass and aluminum. Petroleum-based Nox-Rust 1101 can be used full strength in ferrous and non-ferrous metal systems. It may also be fogged into shipping cases to protect unpainted auto and truck body sections during shipment.	Fuel tanks, gear housing, storage tanks, clutch compartments, cylinders, crankcases, transmissions, hydraulic and coolant circulating systems, metal containers.	Up to 1 year.	Dip, spray, brush, fog.	Not necessary. Solvent/ alkaline, cleaners.
WATER BASED						
Nox-Rust 1200	Ferrous: iron, steel.	Environmentally safe, silica-free water solution for closed systems. Apply water-soluble Nox-Rust 1200 by fog or spray. The silica-free liquid leaves no residue. Contains no phosphates, heavy metals or nitrites. Use it to preserve equipment and piping systems that need hydrostatic testing prior to shipping or storage. It provides continuous corrosion protection for ferrous metals, and is compatible with copper and galvanized steel. The clear, odorless liquid typically does not need to be removed prior to equipment restart. Typically used for hydro-testing.	Preserves equipment and piping systems that need to undergo hydrostatic testing prior to storage or shipping. May be used in boilers, heat exchangers, piping, tubes and for lay-up preservation applications.	1-5 years in a sealed system.	Spray, fog.	Not necessary. Solvent/ alkaline, cleaners.

INDOOR/ OUTDOOR PROTECTION

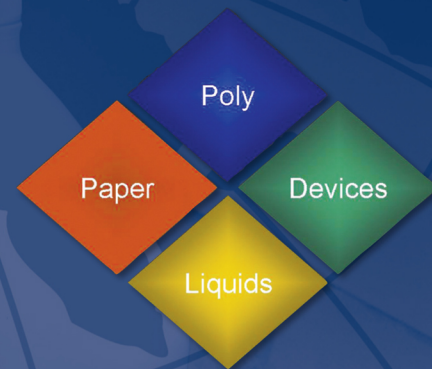
PRODUCT	METALS PROTECTED	DESCRIPTION	RECOMMENDED FOR	LENGTH OF PROTECTION	APPLICATION METHOD	REMOVAL METHOD
Nox-Rust 3100	Ferrous/active non-ferrous. Zinc, brass, cadmium, aluminum, copper compatible.	Protects metals stored outside for 5+ years. The solvent/wax/petroleum based liquid scores superior results in rigorous ASTM salt fog and relatively humidity testing. The dry film is firm, amber/translucent when applied to recommended DFT. Best choice as a transit coating to protect equipment and machinery during domestic and overseas shipments.	Protecting equipment and machinery during domestic and overseas shipping.	3-6 mo. outdoors exposed; 5+ years outdoors covered.	Dip, spray, brush.	Solvent-based thinners, vapor degreasing or hot alkaline wash.
Nox-Rust 3100G	Ferrous/active non-ferrous. Zinc, brass, cadmium, aluminum, copper compatible.	Nox-Rust 3100, in thickened version. Clings to vertical metal surfaces.	Protecting equipment and machinery during domestic and overseas shipping.	9-12 mo. outdoors; 1-5 years outdoors covered; 5+ years indoors.	Dip, spray, brush.	Solvent-based thinners, vapor degreasing or hot alkaline wash.
Nox-Rust 3400	Ferrous/active non-ferrous. Zinc, brass, cadmium, aluminum, copper compatible.	Solvent-based, dry, firm corrosion preventive for the protection of painted surfaces during domestic and overseas shipping.	Ideal choice as transit coating.	3-6 mo. outdoor exposed; 5+ years outdoor covered.	Dip, spray, brush.	Solvent-based thinners, vapor degreasing or hot alkaline wash.
Nox-Rust 4101	Ferrous, zinc, zinc galvanized; non-ferrous compatible.	A multi-metal liquid inhibitor, solvent-based, designed as edge coating for steel coils stored in acidic environments and in plating operations. It protects steel in areas where acid fumes are present, commonly found in pickling operations. The water-displacing, light oil is easy to apply, leaving a soft waxy film protection.	Zinc and zinc galvanized steel. Edge coating. Steel coils stored in acidic atmosphere, pickle oil.	6-12 mo. outside covered.	Dip, spray, flow coat or brush.	Solvent/ alkline cleaners.
Nox-Rust 5100	Ferrous: iron, steel.	A firm film, black asphaltic corrosion preventive coating. Solvent-type, dry-to-touch film. Manufactured to Mil-PRF-16173E, Grade 1, Class 1. Ideal for general metal preservation, indoor or outdoor. Use it with or without other barrier covers in domestic and export shipment and storage. It dries to a black, dry, firm film that can be handled after 3-6 hours and sets up in 12-24 hours.	Long-term protection for metal surfaces on equipment stored indoors or outdoors.	1-3 years outdoors, unprotected; 3-5 years outdoors, protected.	Dip, spray, brush.	Remove with solvent/ alkaline thinners, vapor degreasing or hot alkaline wash.
Nox-Rust 5200	Ferrous: iron, steel.	Solvent-based coating protects exposed metals and unpainted metal parts. The brown, grease-like film dries as a semi-firm coating in 12-24 hours. Compatible with non-ferrous metals. Manufactured to Mil-PRF-16173E, Grade 2, Class 1.	Machinery, instruments, bearings and steel parts.	3-6 mo. on equipment stored outdoors; up to 5 years indoors.	Dip, spray, brush.	Solvent/ alkaline, cleaners.
Nox-Rust 5300	Ferrous: iron, steel.	A brown, oily, solvent-based film that displaces water and saline solutions to keep corrosion from forming on metal surfaces inside closed systems. Completely miscible with lubricating oils. It dries as an oily film that can be handled after 3-6 hours. Manufactured to Mil-PRF-16173E, Grade 3, Class 2.	For use on ferrous and non-ferrous substrates. Designed for indoor or covered storage during shipment.	Up to 12 months.	Dip, spray, brush.	Not necessary. Solvent/ alkaline, cleaners.
Nox-Rust 5400	Multi-metal.	Nox-Rust 5400 is a liquid-based sheet metal processing lubricant and preservative. It is approved as a preservative and lubricant on sheet and coil sheet by major automotive manufacturers.	For use on coiled sheet as a pre-lubricant, blankers as a wash, and a general purpose rust preventive.	1-2 years indoors; 3-6 mos. outdoors protected.	Dip, spray, brush.	Solvent/alkaline, cleaners.

INDOOR/ OUTDOOR PROTECTION continued...

PRODUCT	METALS PROTECTED	DESCRIPTION	RECOMMENDED FOR	LENGTH OF PROTECTION	APPLICATION METHOD	REMOVAL METHOD
WATER BASED Nox-Rust 8500	Will adhere to variety of ferrous, non-ferrous and plastic substrates.	A water-based, hard acrylic emulsion film for a variety of metal surfaces including aluminum and chrome. The clear, non-removable coating is ideal for use in harsh (acidic) environments. Dries as a tack-free exterior coating that will not pick up dust or dirt. Non-staining. Eliminates water spotting caused by acidic rains or hard water. Protects against marring and scratching, protects chrome from white rust. Leaves an aesthetically pleasing finish.	Exposed metals; unpainted metal parts; automotive body panels; metal dies; tools, hinges, motors, underside assemblies, heating and cooling system components.	1-3 years covered indoors.	Dip, spray, brush.	Removal not required, but it may be removed with soap and water for up to an hour after applied.
Nox-Rust 9900	Steel and ferrous parts in enclosed systems: compatible with copper and brass.	Environmentally safe, water-based barrier coating with corrosion protection for steel equipment, assemblies and parts. This high quality, low VOC, emulsified coating contains a superior blend of inhibitors with no solvents, petroleum oils or harmful chemicals.	Exposed metals stored indoors; enclosed systems.	2+ years indoors; 3-6 mos. outdoors covered.	Dip, spray or brush.	If removal is desired, use hot alkaline or mineral spirits.

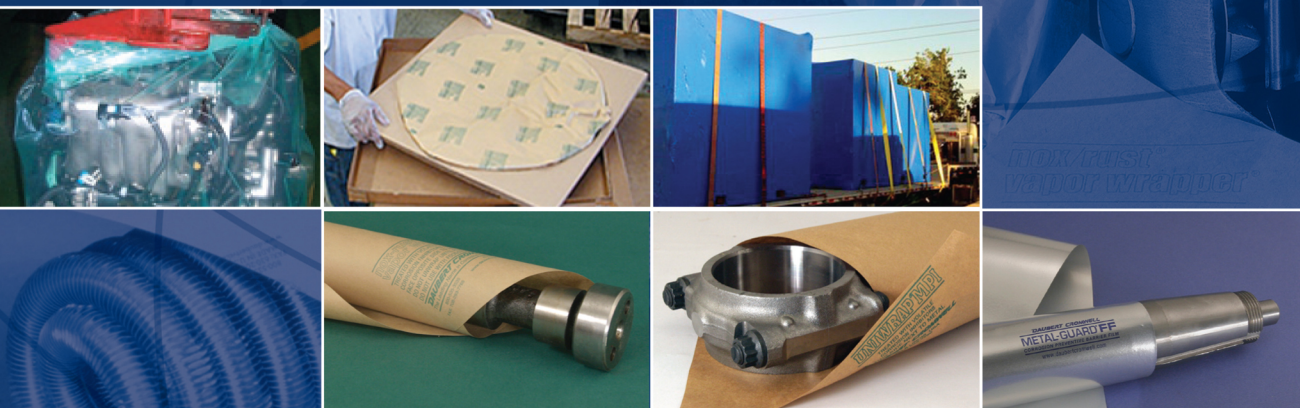
SPECIALTY SOLUTIONS

PRODUCT	METALS PROTECTED	DESCRIPTION	RECOMMENDED FOR	LENGTH OF PROTECTION	APPLICATION METHOD	REMOVAL METHOD
Nox-Rust 7100	Steel (ferrous)/zinc compatible with non-ferrous.	Nox-Rust 7100 is a light, transparent metalworking oil. It is a solvent/wax/ petroleum coating designed for use in plants with a stamping operation using water-base cutting fluids. This non-staining, non-discernible film repels water from metal surfaces. It won't emulsify in presence of alkali. Leaves a sparkling luster on treated metal.	Springs, stampings, saws, machine tools, compressors, gears, drive shafts, precision parts, watch components, taps, drills, and parts for refrigeration, aviation or transportation.	3 years on parts packaged and stored indoors; 3 mos. on covered parts outdoors.	Apply by cold dip, spray or brush.	Petroleum solvents, alkaline cleaners or vapor degreasers.
Nox-Rust 7200	Steel (ferrous)/zinc compatible with non-ferrous.	Barium-free, moisture-displacing rust preventive liquid for use in most plant operations, including after electroplating and surface conversion processes. The light, transparent metalworking oil is designed for plants with a stamping operation using water-base cutting fluids. Non-staining, non-discernible film repels water from metal surfaces. Leaves a sparkling luster on treated metal.	Springs, stampings, saws, machine tools, compressors, gears, drive shafts, precision parts, watch components, taps, drills, and parts for refrigeration, aviation or transportation.	4 years on parts packaged and stored indoors; 3 mos. on covered parts outdoors.	Apply by cold dip, spray or brush.	Petroleum solvents, alkaline cleaners or vapor degreasers.
Nox-Rust 7300	Steel, polished steel.	Water-displacing, lubricating, and penetrating solvent-based liquid for temporary protection of parts stored indoors. The ultra-light oil finish also is a powerful fingerprint suppressant. It will provide mid to short term, indoor protection for industrial parts, engines, and transportation components subjected to handling during processing. Nox-Rust 7300 has excellent humidity resistance.	Fine machined parts, aircraft assemblies, specialized components of polished steel where fingerprint suppression is essential.	12 months on stored parts.	Dip, spray or brush.	Mineral spirits, hot alkaline wash or high pressure steam.
Nox-Rust 7800	Ferrous and non-ferrous metals.	Water-displacing, solvent-based, low viscosity lubricant and corrosion preventive liquid. It creeps into tight and hard-to-reach spaces. It remains fluid at temperatures to -70°F, making it ideal for military use as a gun oil for firearms in cold climates. Ideal for transit and transportation industries, machined parts, routine maintenance shop use. No mixing or preparation required.	An all-purpose lubricant and temporary corrosion inhibitor on machine tools and equipment -- springs, bearings, blades, cutting tools, saws, stampings, sockets, gear shafts.	12 months on stored parts.	Apply by spray, dip or brush.	Mineral spirits, hot alkaline wash or high pressure steam.
WATER BASED Nox-Rust 9300	Ferrous/ non-ferrous.	An all-purpose corrosion inhibitor additive for final stage rinse. It retards corrosion during shipment and storage of machined parts, tools, treated steel and assemblies. Can be diluted with water or petroleum solvent. The light, transparent liquid dries as a thin, oily emulsion.	Use as a final rinse agent in process washers for added corrosion protection.	Protection lasts 3-9 months.	Dip, spray, brush.	Remove with alkaline cleaners/ solvents.
Nox-Rust 9700	Ferrous, compatible with copper and zinc.	Synthetic, water-based fluid designed as a final and in-process RP additive. The straw-colored, clear, aqueous solution removes dirt and debris from steel before mill oils are applied. Add to cutting fluids, metal working fluids, or final stage rinse. The water-displacing liquid dries as a thin, soft film. Contains no oil or oil-based material. No flash point.	Coiled steel, coated steel products, steel converting machine parts.	1-12 weeks indoors (primarily flash rust protection).	Dip, spray or brush, or use as additive to cutting fluids and final stage rinse.	Water, alkaline cleaners.
Nox-Rust 9800	Steel, iron, zinc and aluminum.	Water-soluble Nox-Rust 9800 can be sprayed or fogged into closed spaces such as turbines, pipes, and tanks. The clear, amber liquid is moisture-absorbing, fingerprint removing, and ready to use. Provides continuous protection against corrosion and oxidation.	Power plants, gas and steam turbines, piping systems, heating and cooling systems, boilers.	1-2 years, indoor covered.	Apply by dip, spray or brush.	Not required.
Safecote A	Ferrous/ non-ferrous.	A blend of inhibitors, surfactants and emulsifiers. When cured, the water-based emulsion leaves a grease-like amber colored film. Provides excellent humidity and salt fog protection.	Indoor and outdoor protection on engine blocks, valves, gears, tool and dies, bushings, pipe and other metals.	1-5 years, indoors or outdoors covered.	Apply by dip spray or brush.	Hot alkaline cleaner or petroleum solvent.
Safecote D	Ferrous/ non-ferrous.	Safecote D is a water-based, ready-to-use clear film coating for protecting metals in high humidity and harsh environments. It is a blend of inhibitors, surfactants and emulsifiers designed to deposit a firm, waxy film from a water base emulsion. Non-flammable, easy to use, removable.	Indoor and outdoor protection on engine blocks, valves, gears, tool and dies, bushings, pipe and other metals.	1-5 years indoors or outdoors covered	Dip, spray, brush, or flow coating	Hot alkaline cleaners or petroleum solvents.
BIO-BASED EV9	Ferrous/ non-ferrous.	A vegetable base (soybean), biodegradable protective coating engineered to protect metals stored or shipped in extreme environmental conditions. The water-displacing coating is made with edible, food grade soybean oil which has been bleached and deodorized to resist spoiling. Stays oily to the touch. Safe for employees to handle.	Piping, tubing, engineered parts, fabricated metals transportation equipment where environmental concerns are a factor.	6-18 months indoors; 3-6 mos. Outdoors covered.	Apply by dip, brush or spray.	High pressure steam or hot alkaline wash.



Quality manufacturers have relied on Daubert Cromwell products for 75 years to protect their valuable metal parts against corrosion and tarnish.

- TRANSIT COATINGS
- RUST REMOVERS
- INDOOR/ OUTDOOR PROTECTION
- INTERNAL METALWORKING PROTECTION
- SPECIALTY SOLUTIONS



PRODUCT • PERFORMANCE • QUALITY



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