

noverox® Universal Rust-Stop (noverox Ax)

Fight rust und prime in a one-step operation

- Non-polluting as there is no lead, zinc chromate or mineral acid content.
- Inactivates rust by forming organometallic complexes.
- Forms a rust-inhibiting protective layer which can be topcoated.
- Cost saving thanks to efficient and easy application.
- Fights rust optimally as verified by patents and test certificates.
- Easy to apply.

Product characteristics

It is a single-component synthetic resin emulsion which combines with rust and iron to form an organometallic protective layer. This keeps corrosive media away from iron for a long time, guaranteeing excellent rustproofing in this way.

The three-way action of noverox universal rust-stop (Ax)

- Inactivates rust formation.
The noverox process is based on the reduction of unstable ferric hydroxide with reducing active components of noverox. In this way, a stable organometallic complex is formed.
- It forms a passivating protective layer.
The organometallic complex in conjunction with the new resistant binder system provides protection against corrosion.
- It acts as a primer.
The black organometallic protective layer is an optimal primer for further coats of paint.

Fields of application

Steel construction, machinery, tools, general maintenance in industry and handicraft, vehicles, ship repair, cold water pipe systems, air-conditioning piping etc.

Special Features

Contains no lead, mineral acids or toxic substances. Does not attack existing coats of paint or zinc plating. Does not pollute the environment, is non toxic and not detrimental to health. Can be applied to damp rust. Has no detrimental effect when welding. Is not flammable. Has a pleasant odour.

Technical Notes for Users

1. Substrates

- All surfaces of steel and cast iron which are still bare or have already begun to rust.
- Parts of or entire structures which are made of iron, steel or castings.
- Painted or galvanized steel components which have corroded parts or rusted areas of large size.
- Dry or damp rusted surfaces.

2. Preparation of Substrates

- Wash away dust or dirt and brush or wash off loose rust. Remove dust from rust using a jet of air. Scrape away old paint or galvanizing which has rusted underneath until the well-adhering layers appear.
- The degree of cleanliness as per DIN EN ISO 12994 is St 2 or Sa 2 for wet blasting (depth of surface: 20-40 μm /0.8-1.6 mils).
- Neutralize acid or alkaline layers of rust, e.g. from vapours in stables, cowsheds etc. with clean water (if necessary use a 5% ammonia solution).
- Remove any oil or grease from bare metal with thinner.

3. Amount to Use

This depends on the surface roughness. The following figures can be taken as a guide: Apply a fluid weight of 150-200 g/m^2 (0.5-0.66 oz. /sq.ft.) for a dry film thickness of approx. 50-60 microns (2.0-2.4 mils) to rusty surfaces.

noverox® Universal Rust-Stop (*noverox Ax*)

4. Application of noverox Universal Rust-Stop (Ax)

- Shake and stir noverox well before use.
- noverox Universal Rust-Stop (Ax) is suitable for application by brush, spraying (airless or compressed air) or dipping.
- It is ideal for use at temperatures between +10 and +25° C (+ 50° F and + 80° F).
- Steel surfaces which are warmer than 35° C (95° F), e.g. cladding and roofing in summer, need to be cooled with clean water first.
- Cold surfaces below 5° C (41 ° F) makes noverox difficult to brush and impairs its effectiveness.
- Two coats should be applied when brushing.
- A sealing coat is obtained in one operation when spraying.
- Drying may be delayed if the applied coat is too thick.
- Wait about one hour before applying the second coat.
- When spraying, use an air pressure of 3.5-4.0 bar and a nozzle size from 0.8-1.8 mm (32-72 mils).
- When spraying airless, the nozzle should be from 0,3 to 0,45 mm (12 to 18 mils).
- Transfer the necessary quantity of noverox universal Rust-Stop (Ax) by pouring it into a beaker (made of plastic, glass or porcelain) - never pour it into metal containers! Excess material which has already been in contact with rust (e.g. on brushes) must not be poured back into the original container.

5. Thinner

noverox Universal Rust-Stop (Ax) can be diluted by adding noverox Tx special thinner. An addition of no more than 5% is advisable.

Caution: On adding thinner, the reactive substances are dispersed in a greater volume so that their effectiveness is reduced. Consequently, noverox Universal Rust-Stop (Ax) should be used undiluted whenever possible.

6. Priming

On applying noverox Universal Rust-Stop (Ax), further coats of primer are no longer needed in most cases. If paint systems which coat only thinly are applied, the use of an intermediate primer or surfacer is recommended. Allow to dry for at least twenty-four hours before applying.

7. Filler

Surface irregularities can be smoothed with fillers to obtain optimal paint finishes. Above all, the use of noverox Px car repair mastic or another epoxy filler is recommended. Apply several thin coats of the filler, if it is required.

Caution: noverox Universal Rust-Stop (Ax) should not be sanded or ground away. Polyester filler is not suitable.

8. Compatibility und Re-Coatability

A suitable topcoat, for example alkyd or acrylic-based synthetic resin enamel paint, should be put on the noverox layer on surfaces subjected to mechanical stress or chemical action. The noverox protective layer should be allowed to dry for at least twenty-four hours before the topcoat is applied. The nominal layer thicknesses depend on the specified requirements and kind of topcoat system used, **for example in steel construction (exposure to weather):**

- 2 x noverox Universal Rust-Stop (Ax) for 60-80 microns (2.4-3.1 mils)
- 2 x mica paint on synthetic resin basis for total thickness of 160 microns (6.3 mils)

Steel components in the ground:

- 2 x noverox Universal Rust-Stop (Ax) for 60-80 microns (2.4-3.1 mils)
- 2-3 x bitumen coating for total thickness of 180-200 microns (7.0-7.9 mils)

Service vehicles, e.g. chassis:

- 1-2 x noverox Universal Rust-Stop (Ax) for 60-80 microns (2.4-3.1 mils)
- 1-2 x chassis paint

Special Notes

Experience has been gained with the following types of lacquer:

Synthetic resin lacquer :	good compatibility
Enamel lacquer :	good compatibility
Alkyd resin lacquer :	good compatibility
Acrylic lacquer :	good compatibility
Hematite-based lacquer :	good compatibility
Armouring lacquer :	good compatibility
Epoxy resin lacquer :	good compatibility
Nitro-based lacquer :	good compatibility, when sprayed
Water based industrial emulsions (for metals):	compatible as a rule, metal can shine through; two coats of emulsion or synthetic resin intermediate primer prevents this.

noverox® Universal Rust-Stop (*noverox Ax*)

Observe the respective paint manufacturers' recommendations regarding coating thicknesses and drying times. The following paint types can give rise to possible problems:

- Oily alkyd resin lacquers: drying times can be excessively long. Solution: apply one intermediate coat of alkyd base paint.
- Chlorinated rubber lacquers: some types exhibit long drying times and possible adhesion problems. Solution: apply first coat very thinly. - Application of 2-component Epoxy grip primer.
Polyurethane and 2-component coaltar epoxy lacquers: these can give rise to adhesion and through-hardening problems. Solution: apply a 2-component Epoxy grip primer.

9. Cleaning the Equipment

Use water for preliminary cleaning. Use nitrothinner or a lacquer solvent for final cleaning.

10. Shelf Life

This is approx. 18 months at 20° C (68° F) in sealed containers. Afterwards, it thickens slightly but this does not impair its reactive capacity. (See point 5, Thinner.)

- Certain ambient conditions are required for correct reaction. When working in cellars, tanks etc. high air humidity and low temperatures can delay drying (hardening). Warm air and air circulation accelerate this process.
- If the noverox protective layer is burned by welding (the gases are not toxic), the welds should be neutralized with clear water before they are treated with noverox again.
- noverox contains no toxic, inorganic materials and is consequently non-polluting. Under no circumstances may the protective layer be washed down after applying noverox, as is the practice with acid rust converters (so-called rust killers).

Short-term Testing of noverox Universal Rust-Stop (Ax)

Due to the formation of complexes and a new binding agent system, noverox gives an extremely good rustproofing performance under conditions in actual practice. As known generally among specialists, shorttime testing only allows restricted conclusions to be drawn about the suitability of paints. This also applies, in particular, to a new technology such as that represented by noverox Universal Rust-Stop (Ax). Ask for the leaflets on laboratory testing.

Test Certificates for noverox

noverox is an industrial product of optimal effectiveness to fight and prevent rust.

Test reports from many scientific laboratories at home and abroad as well as references from industry confirm the great effectiveness of noverox. Among them are:

- Bureau Veritas, Paris
- Dr. Mang - acceptance for foodstuffs
- Federal Institute for Materials Testing, Berlin
- Statens Provningsanstalt, Stockholm
- Austrian Plastics Institute, Vienna
- Hungarian Institute for Quality Control in Construction, Budapest
- Krupp Research Institute, Essen, Germany
- TÜV Technical Supervisory Association, Hessen, Germany (approval mark)
- DVGW Research Station, Karlsruhe, Germany
- Patents in Germany, France, Spain, Belgium, England, Luxemburg, The Netherlands, Austria, Sweden, Switzerland/Liechtenstein, Australia, Brazil, Japan, USA, Denmark, Finland, Italy, Canada, Norway, Israel, South Korea.

The given Information can only be of a general nature. Working conditions beyond our control and the wide variety of materials exclude any liability resulting from this Information. In case of doubt, we recommend that you carry out sufficient tests of your own. SFS guarantees, however, the continuing high quality of the product.

noverox® Universal Rust-Stop (noverox Ax)
Technical Data

<ul style="list-style-type: none"> • Appearance: off-white emulsion, after drying of the film: black (caused by conversion) 	<ul style="list-style-type: none"> • Adhesion (square-cut adhesion test as per DIN EN ISO 2409, 50 my (2.0 mils) after 3 weeks drying on St 37 (St 2) steel : GT 0
<ul style="list-style-type: none"> • Odour: mild 	<ul style="list-style-type: none"> • Adhesion as per ASTM D 3359, measuring adhesion by tape test, method B-cross cut tape test: Grade 5B; edges of the cuts are completely smooth.
<ul style="list-style-type: none"> • Density: 1,0 g/cm³ • Solids content: 39 % 	
<ul style="list-style-type: none"> • pH value (acidity): 3.0 (Ford beaker No. 4, 68° F) 	<ul style="list-style-type: none"> • Elasticity as per Erichsen, DIN 53156 (ASTM D 3281), after 3 weeks drying: over 6 mm (240 mils)
<ul style="list-style-type: none"> • Viscosity as per DIN 53221 (DIN beaker with nozzle of 4 mm/160 mils): approx. 35-45 seconds (after shaking, stirring) 	
<ul style="list-style-type: none"> • Dust-free: no pick-up after approx. 1 hour 	<ul style="list-style-type: none"> • Rod bending test as per DIN EN ISO 1519: 3 mm (120 mils), no cracks
<ul style="list-style-type: none"> • Recoating with noverox Universal Rust-Stop: after approx. 1 hour 	<ul style="list-style-type: none"> • Chemical resistance: the noverox Universal Rust-Stop (Ax) protective layer displays good resistance to non-aggressive weak acids, caustic solutions and non-aggressive oils
<ul style="list-style-type: none"> • Coating with paint systems: after 24 hours 	
<ul style="list-style-type: none"> • Application methods: by brush or roller, airless or compressed air spray gun 	<ul style="list-style-type: none"> • Resistance to sustained heat: 175° C (350° F)
<ul style="list-style-type: none"> • Application techniques: compressed air spraying at 3-4,5 bar with nozzle of 0.8-1.8 mm (32-72 mils); airless at 80-150 bar with nozzle of 0,3-0,45 mm (12-18 mils) 	<ul style="list-style-type: none"> • Resistance to temporary heat: 230° C (450° F)
<ul style="list-style-type: none"> • Application viscosity: 35-45 seconds, consistency delivered through nozzle of 4 mm (160 mils) 	<ul style="list-style-type: none"> • Salt spray test as per DIN 50021 (ASTM B 117): 500 h
<ul style="list-style-type: none"> • Thinner: noverox Tx special thinner, ideal admix max. 5% 	<ul style="list-style-type: none"> • Kesternich test as per DIN 50018/0,25: 500 h (S02)
<ul style="list-style-type: none"> • Cleaner: universal thinner or nitrothinner 	<ul style="list-style-type: none"> • Flash point (as per Markuson): 73° C (154° F)
<ul style="list-style-type: none"> • Consumption: 150-200 g/m² (0,5-0,66 oz./sq.ft.) for 50 microns (2 mils) 	<ul style="list-style-type: none"> • Shelf life: 18 months at 20° C (68° F) in sealed containers
<ul style="list-style-type: none"> • Application temperatures: +10 to 30° C (+50° to 90° F); at more than 80% relative humidity, drying is retarded. 	<ul style="list-style-type: none"> • Container sizes in litres and US gallons: 750 ml (0,200 gal.), 2,5 ltrs (0.661 gal.), 5 ltrs (1.32 gal.), 25 ltrs (6.6 gal.), 200 ltrs (52.84 gal.).

This leaflet supersedes technical notice E 50-1-2 about noverox Ax anti-corrosion primer.

Further noverox® rust protection systems: - noverox Carrossier Rust-Stop
 - noverox Spray Rust-Stopp

As suitable topcoat Systems in combination with noverox universal rust-stop (Ax), we can deliver:

LS 700 Mica Paint: high-quality alkyd-resin based anticorrosion finishing paint, available in 5 different colour shades.
 LN 850 Bitumen Paint: phenol-free one-component coating, primarily used for steel Parts which are in contact with drinking water.

noverox® Universal Rust-Stop (*noverox Ax*)

2c-Epoxy Mica Paint: for surfaces subjected to stresses caused by water, humidity and all kinds of corrosive influences. (on High-Solid Basis)