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## 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 savings 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 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 surfaces.
- Has no detrimental effect when welding.
- Is not flammable.
- Has a pleasant odour.

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### 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 bloom 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-T4 is St2 / PSt2, or Sa2 for wet blasting respectively (depth of surface: 20-40 µm).
- 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. Surfaces that have been extensively exposed to a heavy sulphate or chlorine environment must be cleaned with special care.

#### 3. Amount to Use

This depends on the surface roughness. The following figures can be taken as a guide: Apply a fluid weight of 140-180 g/m<sup>2</sup> for a dry film thickness of approx. 50-60 µm to rusty surfaces.

#### 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°C. and +25°C.
- Steel surfaces which are warmer than +35°C., e.g. cladding and roofing in summer, need to be cooled with clean water first.
- Cold surfaces below 5°C. make 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 two hours before applying the second coat.
- When spraying, use an air pressure of 3.5-4.0 bar and a nozzle size from 0.8 to 1.8 mm.
- When spraying airless, the nozzle size should be from 0.3 to 0.45 mm.
- The total curing depends on layer thickness and prevailing drying conditions. The mechanical stress has to be surveyed individually.
- 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.

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### 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)	60-80 my
2 x	mica paint on synthetic resin basis	80-100 my
	Total layer thickness:	160 my

#### for example on pipe systems in industrial environment:

2 x	noverox® Universal Rust-Stop (Ax)	80 my
2-3 x	noverox® EG2 Epoxy-Mica (or similar 2-comp. epoxy systems)	160 my
	Total layer thickness:	240 my

#### for example Service vehicles; e.g. chassis:

1-2 x	noverox® Universal Rust-Stop (Ax)	60-80 my
1-2 x	chassis paint	

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### 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.

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. Apply a 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 nitro-thinner or a lacquer solvent for final cleaning.

### 10. Shelf Life

Approximately 2 years at 20°C. in sealed containers. Afterwards, it thickens slightly but this does not impair its reactive capacity (see point 5. Thinner).

### Special explanatory notes

- 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 welding seams 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).

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### 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® Universal Rust-Stop (Ax)

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 the industry confirm the great effectiveness of noverox®.

Among them are:

- Bureau Veritas, Paris
- Dr. Mang, Official Foodstuffs Control, Frankfurt
- Federal Institute for Material Testing, Berlin
- Statens Provningsanstalt, Stockholm
- Austrian Plastics Institute, Vienna
- Hungarian Institute for Quality Control in Construction, Budapest
- Krupp Research Institute, Essen
- TÜV Technical Supervisory Association, Munich (Approval mark)
- DVGW Research Station, Karlsruhe

### **Important:**

*It is essential that the applicator (user) follows both the instructions for use and the technical leaflet. These can be obtained from the retailer or the SFS unimarket AG. The manufacturer assumes no liability for incorrect use.*

### **Liability exemptions**

*The following details are in accordance with our latest experience; they demand however no general validity. In every case we recommend you try repeatedly yourself. No warranty applies in this case. Every liability in the details mentioned, are exempt by law. The responsibility for the safety, the application, the construction supervision, the compliance with the processing guidelines and that the recognised technical rules are observed, lies solely with the processor. This also applies when our company personnel are present during the processing. Conditionally through technical development there could be changes made to the product. Valid is however the most recent version of this information.*

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## Technical Data

<b>Appearance:</b>	off-white emulsion, after drying of the film: black (caused by conversion)
<b>Odour:</b>	mild
<b>Density as per DIN EN ISO 2811:</b>	1.04 g/cm <sup>3</sup>
<b>Solids content:</b>	44%
<b>pH value (Acidity):</b>	~3.0
<b>Viscosity as per DIN EN ISO 2431:</b>	approx. 90-120 seconds
<b>Dust-free:</b>	no pick-up after approx. 1 hour
<b>Recoating with itself:</b>	after approx. 1-2 hours
<b>Coating with paint systems:</b>	after 24 hours
<b>Application methods:</b>	by brush or roller, airless or compressed air spray gun
<b>Application techniques:</b>	compressed air spraying at 3-4.5 bar, with nozzle size of 0.8-1.8mm; airless at 80 - 150 bar, with nozzle size of 0.3-0.45 mm
<b>Application viscosity:</b>	Ready to use
<b>Thinner:</b>	noverox® Tx special thinner, ideal admix max. 5%
<b>Cleaner:</b>	universal thinner or nitro thinner, to rinse afterwards with water
<b>Consumption:</b>	~230 g/m <sup>2</sup> for a dry film thickness of 80 my
<b>Application temperature:</b>	+10°C. to +30°C.; at more than 80% relative humidity, drying is retarded
<b>Adhesion (square-cut adhesion test as per DIN EN ISO 2409) 50 my, after 3 weeks drying on St37 (St2) steel:</b>	GT 0
<b>Elasticity as per Erichsen, DIN 53256, after 3 weeks of drying:</b>	over 6 mm
<b>Rod bending test as per SNV 37105:</b>	3 mm, no cracks
<b>Chemical resistance:</b>	the noverox® Universal Rust-Stop (Ax) protective layer displays good resistance to non-aggressive weak acids, caustic solutions and non-aggressive oils
<b>Resistance to sustained heat:</b>	175°C.
<b>Resistance to temporary heat:</b>	230°C.
<b>Salt spray test as per DIN EN ISO 7253</b>	500 hours
<b>Kesternich test as per DIN 50018</b>	500 hours
<b>Flash point (as per Marcusson)</b>	+73°C.
<b>Shelf life:</b>	2 years at +20°C. in sealed containers
<b>Container sizes</b>	100 ml, 250 ml, 750 ml, 2.5 lt, 5 lt, 25 lt, 200 lt

Further noverox® Rust-Stop qualities: - noverox® Carrossier Rust-Stop  
- noverox® Spray Rust-Stop

As suitable topcoat systems in combination with noverox® Universal Rust-Stop (Ax), we can deliver:

noverox® DS-1 Mica Paint: High-quality alkyd-resin based anticorrosion finishing paint.  
noverox® EG-2 Epoxy Mica Paint: For surfaces subjected to stresses caused by water, humidity and all kinds of corrosive influences.