

## Corrosion Inhibitor

### GENERAL INFORMATION

NALZIN® FA 379 is a very effective liquid corrosion inhibitor for waterborne coatings; it counteracts both flash and early rusting.

The product is nitrite-free but still performs excellently as a permanent corrosion inhibitor in coatings.

### PHYSICAL PROPERTIES

Appearance	clear liquid
pH, 10% solution in water	8.0 - 10.0
Flash point, (ASTM D 6450)	52° C
Viscosity, 20°C (ASTM D 2196)	approx. 200 mPa.s
Density, 20°C (ISO 2811-2)	approx. 1040 kg/m <sup>3</sup>
Solubility	soluble in glycol ether, insoluble in white spirit, emulsifiable in water

### APPLICATION AND PROPERTIES

NALZIN® FA 379 is a specially formulated film-forming inhibitor based on an organic zinc complex and a nitrogen compound.

Feature	Consequence
<ul style="list-style-type: none"> <li>Based on an organic zinc complex with a low nitrite addition</li> </ul>	<ul style="list-style-type: none"> <li>Shows strong affinity to iron substrates to prevent flash-rusting</li> <li>formation of a mono molecular layer</li> </ul>
<ul style="list-style-type: none"> <li>Although waterdispesible, changes during the drying stage to a non- water dispersible, in soluble zinc compound</li> </ul>	<ul style="list-style-type: none"> <li>decreased water sensitivity</li> <li>forms an anionic passivated layer that inhibition after the film has dried</li> <li>can be utilized as an in-can rust inhibitor</li> <li>improved weathering</li> </ul>
<ul style="list-style-type: none"> <li>Nitrite-free</li> </ul>	<ul style="list-style-type: none"> <li>environmentally safe</li> </ul>

The strong affinity of the NALZIN® FA 379 molecules with iron substrates guarantees an immediate corrosion inhibition action as soon as the paint is applied.

Flash-rusting which occurs during the drying phase of waterborne paint applied to a ferrous substrate, is strongly inhibited by NALZIN® FA 379.

The formation of metal complexes during the drying process of the paint results in a reduction of the water solubility of NALZIN® FA 379.

Under usual conditions most of the NALZIN® FA 379 will be changed on drying into a water insoluble complex. This complex remains active as a permanent corrosion inhibitor. Furthermore, unlike inorganic water-soluble flash-rust inhibitors, this insoluble complex will not influence the water sensitivity of the dried paint layer.

NALZIN® FA 379 is applied in aqueous coatings to fight rusting:

- during manufacture
- during storage
- as the paint is applied
- for permanent corrosion inhibition of the coating

The main use is in waterborne primers. However, NALZIN® FA 379 is also successfully used in finishes for protection during manufacture and application and to limit corrosion and blooming problems when these paints are applied on metal surfaces (e.g. nailheads, screws, iron linings, pipes etc.)

NALZIN® FA 379 may be used in most aqueous coatings including traditional dispersion paints, aqueous industrial primers, water-dilutable epoxies, acrylics, alkyds and stoving enamels, etc. As the composition of the coatings can vary enormously it is strongly recommended to check the applicability in each case individually.

(continued)

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## INCORPORATION

Generally, a concentration between 0.1 - 0.6% NALZIN® FA 379, calculated on the total amount of the paint, will give good results.

In order to guarantee a good distribution of the product, NALZIN® FA 379 should be added during the milling process. However, in most cases excellent results are even obtained if it is added during the letdown stage.

The exact concentration to be used and method of incorporation depends on the individual conditions and should be determined experimentally.

## HEALTH AND SAFETY DATA

Before using this product please consult our Material Safety Data Sheet (MSDS) for information on safe handling and storage. MSDS' can be found on the company website at [www.elementis-specialties.com](http://www.elementis-specialties.com).

## SHELF LIFE

NALZIN® FA 379 has a shelf life of 3 (three) years from date of manufacture.

## QUALITY ASSURANCE

Since 1992 the company is a holder of the ISO 9001 / ISO 9002 certificates, which guarantees that all operations are conducted according to the stipulated standards.

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