

# ANTICORROSION ADDITIVES FOR COATINGS





**YOUR KEY PARTNER  
FOR ANTICORROSION**

# ABOUT US

With 25 years of experience, ASCOTEC, as an independent company, is considered as one of the major players in the anticorrosion field.

In Paints & Coatings, ASCOTEC is recognized by major manufacturers, with a complete range of innovative additives which meet all needs:

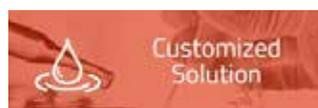
-  **ASCONIUM®**, anticorrosion additives for both solventborne and water-based metal coatings.
-  **ASCOTRAN®**, flash-rust inhibitors for metal substrate protection during the application of water-based coatings and for packaging protection.
-  **ASCOTRUST®**, rust-converting additives for direct application of water-based coatings on rusted substrates.

ASCOTEC can also handle corrosion problems in various metal machining processes, such as lubrication, stripping, degreasing, metal cleaning, storage and heat transfer fluids.

At ASCOTEC, we are dedicated to reducing our environmental impact and promoting responsible business practices. Through our sustainability initiatives, we strive to protect both the environment and the communities in which we operate, ensuring a better future for all.



More than 70  
countries covered



Customized solutions and  
a strong technical support



Approved Quality  
Management System

# ASCONIUM®

## ■ AN INNOVATIVE ORGANIC AND LIQUID TECHNOLOGY FOR ENHANCED ANTICORROSION PERFORMANCE

### **A new technology, against ever stricter regulations.**

Regulations on chemicals and VOC have changed a lot over these past few years, and are still likely to evolve. Anticorrosive coatings manufacturers, therefore, have to develop new formulations with even more eco-friendly components, which often results in tricky additions and low performance.

ASCOTEC has developed the ASCONIUM® range to take up this challenge.

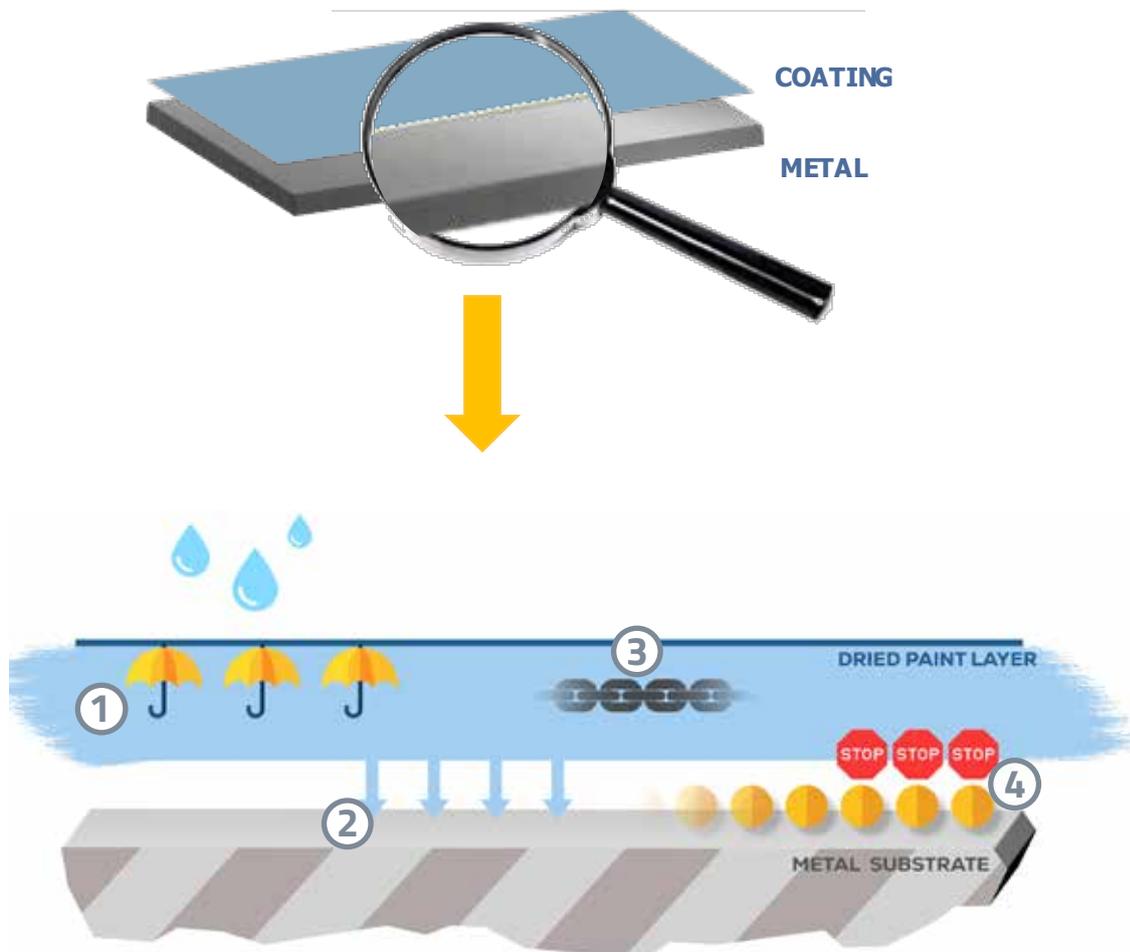
Thanks to their liquid form, ASCONIUM® products provide many benefits, both inside the coating layer and on the metal substrate.



**LIQUID ANTICORROSION  
ADDITIVES**

## ■ FOUR FUNCTIONS FOR THE HIGHEST PERFORMANCE

As ready-to-use liquids, ASCONIUM® additives can be used in WATER-BASED, as well as in SOLVENTBORNE coatings, either as single products or in combination with anticorrosion pigments.



**Their high performance is based on 4 different functions :**

- ① ENHANCEMENT OF THE COATING'S WATER-RESISTANCE
- ② IMPROVEMENT OF ADHESION BETWEEN THE COATING AND THE SUBSTRATE
- ③ REINFORCEMENT OF THE FILM STRUCTURE
- ④ STRONG CORROSION INHIBITION THROUGH ADSORPTION MECHANISMS ONTO THE SURFACE

■ ASCONIUM® KEY BENEFITS



**HEAVY-METAL FREE**



**LOW USE DOSAGE**



**IMPROVE FILM WATER-RESISTANCE**



**AVOID FILM BLISTERING**



**IMPROVE PAINT ADHESION ON METAL**



**SUITABLE FOR CLEAR-COATING**



**SUITABLE FOR VARIOUS METAL NATURE**



**SUITABLE FOR HIGH-GLOSS COATING**



THE RANGE

NEW!

			ASCONIUM-110	ASCONIUM-111	ASCONIUM-112	ASCONIUM-114	ASCONIUM-130	ASCONIUM-140	ASCONIUM-141S1	ASCONIUM-142DA	ASCONIUM-143	ASCONIUM-144DA	ASCONIUM-500
SOLVENTBORNE	ALKYD	clear	●●●	●●	●●●	●●	●●	●●	○	●●	●●●	●●	
		paint	●●	●●●	●●●	●●	●●	●●	○	●●	●●●	●●	
	2K PU	clear	●●	○	●●	●●●	●●	●●	●●	●●●	●●●	●●	
		paint	○	●●	●●	●●●	●●	●●	●●●	●●	●●●	●●	
	ACRYLIC	clear	●●	○	●●	●●●	●●	●●	○	●●●	●●●	●●	
		paint	○	●●	●●	●●●	●●	●●	●●	●●●	●●●	●●	
2K EPOXY	clear	●●	○	●●	●●	●●●	●●	●●	●●●	●●	●●		
	paint	○	●●	●●	●●	●●●	●●	●●●	●●●	●●	●●		
WATER-BASED	ACRYLIC	clear	○	○	●●	●●●	●●	●●	○	●●	●●●	●●	●●●
	STYR/ACRY	paint	○	●●	●●	●●	○	●●	●●	●●●	●●●	●●	●●●
	ALKYD	clear	○	●●	●●	●●●	○	●●	○	●●	●●●	●●	●●●
		paint	○	●●●	●●	●●●	●●	●●	●●	●●●	●●	●●	●●●
	PUD	clear	○	●●	●●	●●●	●●	●●●	○	●●●	●●	●●	●●●
		paint	○	●●	●●	●●●	●●	●●	○	●●●	●●	●●	●●●
	2K PU	clear	○	○	●●●	●●	●●	●●	○	●●●	●●●	●●	●●●
		paint	○	●●	●●●	●●	●●	●●	○	●●●	●●●	●●	●●●
2K EPOXY	clear	○	○	●●	●●	●●●	●●	●●●	●●●	●●	●●	●●●	
	paint	○	●●	●●	●●	●●●	●●	●●●	●●●	●●	●●	●●●	
Ferrous substrates			●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
Zn and alloys substrates			●●	●●	●●●	●●●	●●	●●●	●●	●●●	●●●	●●●	●●●
Alu and alloys substrates			●●	●●	●●	●●●	●●	●●●	●●	●●	●●	●●●	●●●

●●● Highly recommended | ●● Adapted | ○ Not used

TO MAKE YOUR RESEARCH EASIER :



SCAN ME

ASCONIUM® SELECTOR

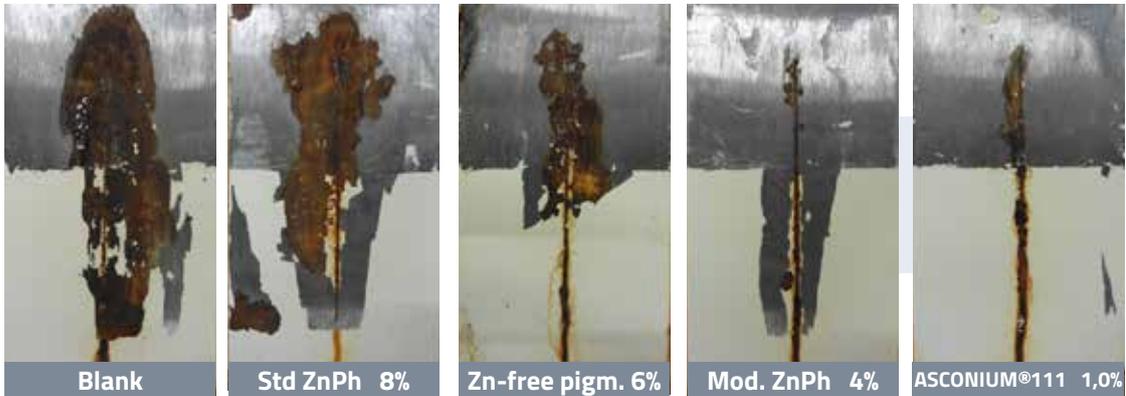
ASCONIUM®

## ANTICORROSION PERFORMANCE

**ASCONIUM®**, used as sole corrosion inhibitor into metal coatings, achieves better anticorrosion performance than usual anticorrosion pigments.

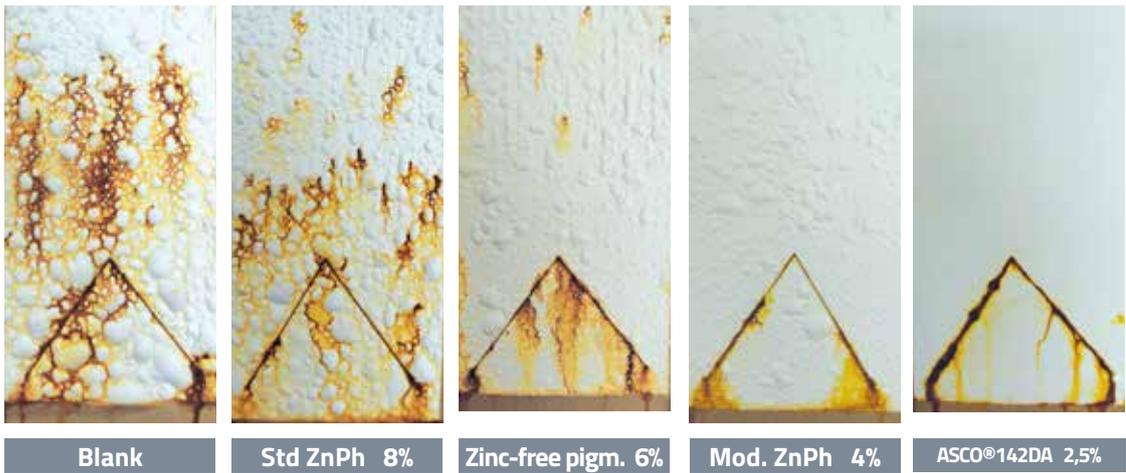
Solventborne Alkyd primer

Salt Spray ASTM B117 – 500h – DFT 60µm, CRS



Water-based Acrylic coating

Salt Spray ASTM B117 – 1000h – DFT 60µm, CRS



## NEW GRADE FOR WB METAL COATINGS : ASCONIUM® -500

NEW !

ASCOTEC has developed ASCONIUM® 500, an ultra-performing solution for water-based metal coatings that addresses multiple challenges.

- Easy to incorporate
- Lower use dosage (~1%)
- VOC-free
- Suitable for all kinds of water-based binder systems
- Usable into pigmented and clear-coatings

With ASCONIUM®-500, obtain high levels of corrosion class DTMs, with only 1 coat.

Example of C3 very high / C4 high / C5 medium\* water-based acrylic DTM



BLANK



WITH  
ASCONIUM® 500, 1%

Test method : ISO-9227  
Substrate : SB Steel SA2,5  
SST Duration : 720h  
Application : 1 layer  
DFT : 90-100 µm  
Adh. after 7 days : ISO-2409



BLANK



WITH  
ASCONIUM® 500, 1%

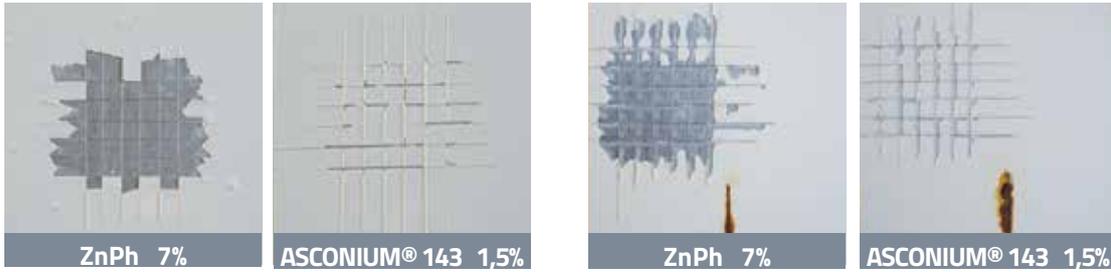
Test method : ISO-6270  
Substrate : SB Steel SA2,5  
SST Duration : 480h  
Application : 1 layer  
DFT : 90-100 µm  
Adh. after 7 days : ISO-2409

\*according to ISO12944

## ADHESION IMPROVEMENT

**ASCONIUM® provides excellent adhesion properties to the film on metal substrates, even after salt spray or humidity tests.**

Solventborne 1K Alkyd-urethane primer + Solventborne Alkyd top-coat  
DFT 125µm, CRS



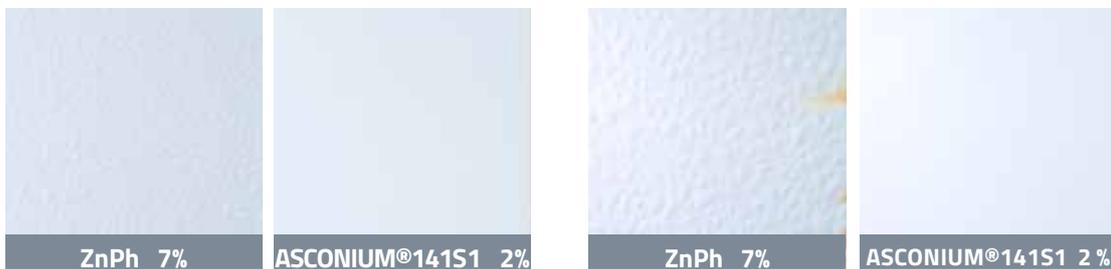
**Adhesion 2409 24h  
after 120h Humidity Test ISO6270**

**Adhesion 2409 24h  
after 250h Salt Spray Test ISO9227**

## WATER RESISTANCE IMPROVEMENT

**As hydrophobic anticorrosion agent, ASCONIUM® provides enhanced water resistance to the coating, when most usual anticorrosion agents, sensitive to hydrolysis, compromise this property.**

High Solid Monolayer solventborne 2K PU  
DFT 75µm, CRS



**54 days Humidity test 45 °C**

**54 days Bac Ford test**



## USABLE IN CLEAR-COATINGS

As clear liquid-form, ASCONIUM® can be used into non-pigmented coatings, without compromising the film appearance.



Blank



ASCONIUM®114 2,5%

Water-based  
PUD based clear-coating

Salt Spray ISO9227 400h, DFT 35-40µm,  
CRS



Blank



ASCONIUM®112 2%

Solventborne  
1K Alkyd clear-coating

Salt Spray ISO9227 820h, DFT 70µm,  
CRS

## MULTI METAL PROTECTION

ASCONIUM® is not only active on ferrous substrates, but also on aluminium, copper and zinc-based metals, used in specific fields like coil-coatings and aerospace applications.



Blank

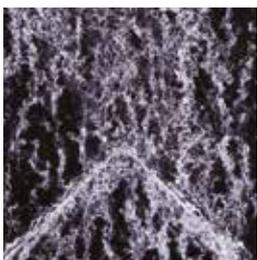


ASCONIUM®140 2%

Aluminium

Solventborne 2K  
PU primer

Salt Spray ISO9227 300h, DFT 10µm



Blank



ASCONIUM®112 2%

Galvanized steel

Solventborne Polyester coating  
Salt Spray ISO9227 1500h, DFT 20µm

# ASCOTRAN®

## ■ ELIMINATE FLASH-RUST AND PRESERVE FILM WATER-RESISTANCE

Whatever the field is, Construction, Do-it-yourself or Industry, water-based coatings are widely developed to meet new VOC and regulatory requirements.

Everytime a water-based coating is applied on metal, flash-rust phenomenon, which is immediate corrosion of metal substrates, is a matter of concern.



In order to meet this new demand, ASCOTEC has developed a complete range of flash-rust inhibitors ASCOTRAN® containing **bio-based substances**.

They are effective in many different situations, whatever the substrate that needs to be protected or the nature of the coating may be.

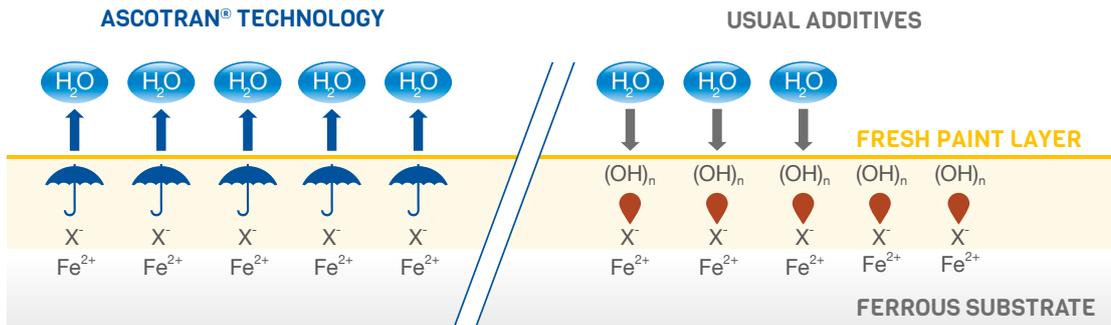
## FLASH-RUST INHIBITORS

## ■ A COMPLETE RANGE OF FLASH-RUST INHIBITORS

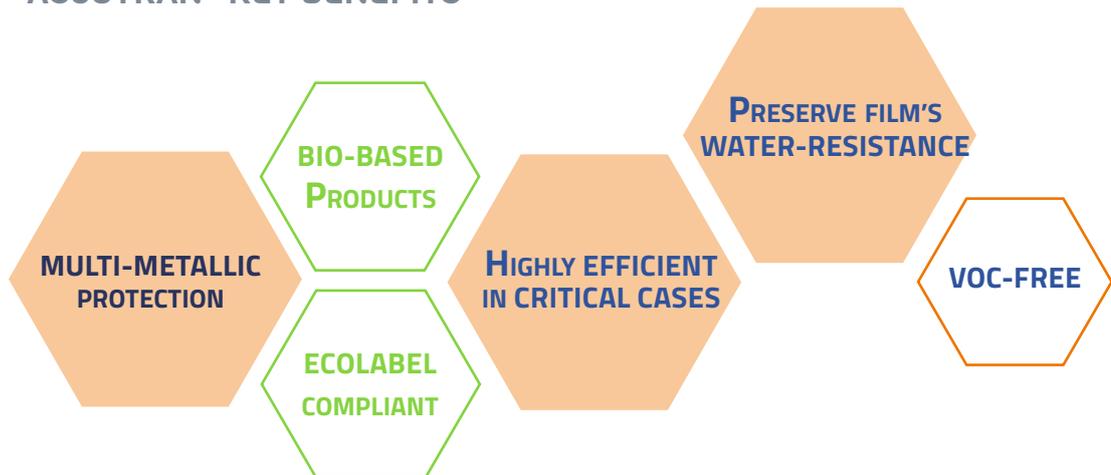
Ready-to-use liquids, ASCOTRAN® are compatible with the main resin systems used for water-based formulation.

Once the coating is applied onto the metal, ASCOTRAN® will be immediately adsorbed onto the metal surface.

Whereas usual flash-rust inhibitors reduce coatings water-resistance, the ASCOTRAN® technology combines excellent antiflash-rust performance with hydrophobic properties at low dosages.



## ■ ASCOTRAN® KEY BENEFITS



## ■ THE RANGE

	Specificities
ASCOTRAN®- H10	The most unvniversal.
ASCOTRAN®- H14	Multi-metal substrates. High water-resistance properties.
ASCOTRAN®- H30	For substrates very sensitive to flash-rust. <b>NEW !</b>
ASCOTRAN®- HW10	For critical cases (welds, sensitive alloys). <b>NEW !</b>
ASCOTRAN®- H18	High compatibility level, especially into 2K systems.
ASCOTRAN®- AL4	Multi-metal substrates. Nitrite-free.
ASCOTRAN®- HPB	Complies with most international & national standards for eco-friendly labels. Nitrite-free.

## ANTIFLASH-RUST PERFORMANCE

**ASCOTRAN® additives provide highest levels of flash-rust inhibition at low use dosages. They outperform high nitrite-containing additives or usual flash-rust inhibitors, even when film dries under severe humidity conditions.**

FLASH-RUST TEST ON SAND-BLASTED MILD STEEL  
WB STYRENE-ACRYLIC PRIMER  
DFT 60 µm  
NORMAL DRYING CONDITIONS



With **ASCOTRAN® H10**,  
0,4%



COMPETITOR  
0,4%



Without flash-rust inhibitor

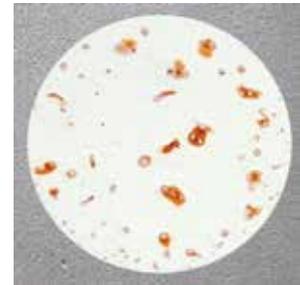
FLASH-RUST TEST GRIT BLASTED CAST-IRON  
WB ACRYLIC DTM  
TDFT 70 µm  
SEVERE DRYING CONDITIONS



**ASCOTRAN® H30**, 1%



COMPETITOR, 1%  
(Nitrite-containing)

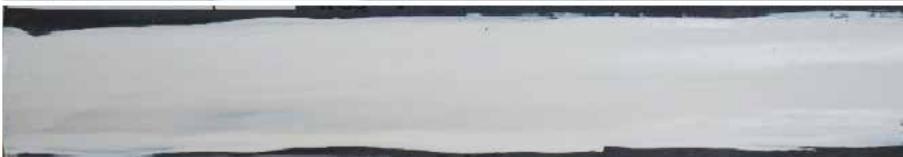


1% Sodium Nitrite, Sol. 15%

FLASH-RUST TEST ON WELDS  
WB ACRYLIC PRIMER  
DFT 50 µm  
NORMAL DRYING CONDITIONS



WITH  
COMPETITOR, 1%



With  
**ASCOTRAN® HW10**, 1%



WITHOUT  
Flash-rust inhibitor

## ■ PRESERVE FILM WATER RESISTANCE

Whereas usual flash-rust inhibitors reduce coatings water-resistance, the ASCOTRAN® technology combines excellent antiflash-rust performance with hydrophobic properties.

WB 2K EPOXY PRIMER  
 ASTM D870 (40 °C) 250H, DFT 70 µm, CRS  
 Dosage in Flash-Rust Inhibitor : 0,5%



ASCOTRAN® H14

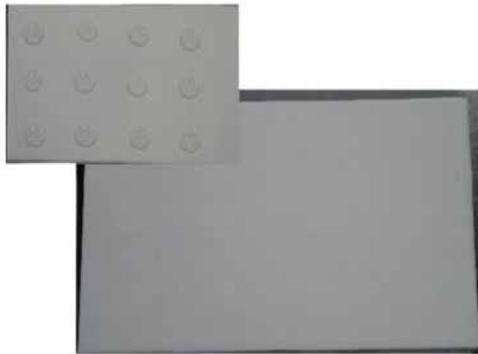


COMPETITOR  
 (Nitrite-containing)

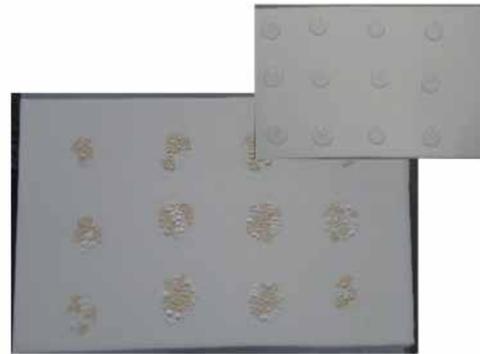


Sodium Nitrite, Sol. 15%

WB ACRYLIC PRIMER  
 DFT 35µm, COLD-ROLLED STEEL,  
 WATER DROPS APPLIED ON THE DRY-TO-TOUCH FILM



WITH  
 ASCOTRAN® HPB 0,8%



WITH  
 COMPETITOR, 0,8%

## ■ PACKAGING PROTECTION

Coatings can be highly corrosive and can cause, in most cases, corrosion of metallic cans which contain them. ASCOTRAN® flash-rust inhibitors also provide in-can protection.



Wall-paint



Waterborne wood varnish



### IN-CAN PROTECTION

Examples of corrosion tests without/with ASCOTRAN®

# ASCOTRUST®

## ■ A NEW GENERATION OF RUST-CONVERTERS

Regulations on chemicals and VOC are forcing binder manufacturers to develop performing water-based systems for Direct-To-Metal applications. Even though a metal coating shows high levels of performance, it can lose its properties once applied on rusted or poorly prepared metal surfaces.

The current techniques to get around this problem focus on rust pre-treatment methods and are not fully satisfactory:

Solventborne «oils» or pre-treatment clear-coatings

Chemical surface-treatments & mechanical treatments

Acid rust-converting coatings

ASCOTRUST® is the solution to obtain high-performance results with metal coatings directly applied on rust, or poorly prepared substrates, without using expensive methods or specific binding systems.

## RUST-CONVERTING ADDITIVES

■ A RANGE OF INNOVATIVE, LIQUID-FORM, AND TANNIC ACID-FREE RUST-CONVERTING ADDITIVES FOR WATER-BASED COATINGS

ASCOTRUST® additives provide rust-converting properties to the coating layer and enable direct applications on rust or poorly prepared substrates.

They ensure an efficient rust-blocking effect as soon as the paint is applied and form a passivation layer between the substrate and the coating layer; this helps to maintain the coating's anticorrosion performance, despite adverse substrate conditions.



■ ASCOTRUST® KEY BENEFITS



■ THE RANGE

	Specificities
ASCOTRUST®- X1	The most universal. Ideal for iron oxide - based coatings.
ASCOTRUST®- X2	Good compatibility in clear-coatings.
ASCOTRUST®- X4	High water resistance. Ideal for DTM coatings.

## ASCOTRUST® ENHANCE FILM FLASH-RUST PERFORMANCE

ASCOTRUST® completes the action of the flash-rust inhibitor on very sensitive substrates:  
sand-blasted steel, cast-iron and soldered joints.



Exemple on soldered joint

Water-based coating with flash-rust inhibitor only

Water-based coating with flash-rust inhibitor + ASCOTRUST®

## ASCOTRUST® FOR RUST-CONVERTING PRE-TREATMENTS

A water-based anticorrosion clear-coating containing ASCOTRUST® can be used as a rust-converting pre-treatment with better performance than tannic acid-based formulations or solventborne alkyd-based oils.



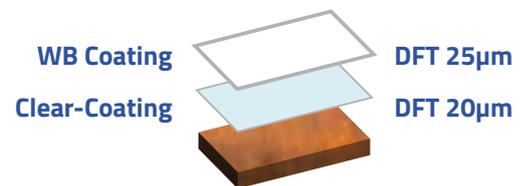
ASCOTRUST  
BASED PRETREAT



TANNIC ACID  
BASED PRETREAT



SOLVENTBORNE  
ALKYD OIL



SST (250h) on rusted steel panels



## ASCOTRUST® FOR RUST-CONVERTING PAINTS

ASCOTRUST® based water-based metal paints

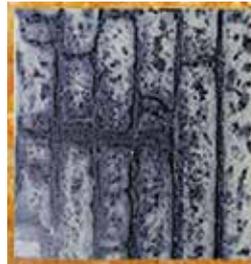
- Prevent from rust "migration" through the water-based coating, even on superficial rust.
- Preserve the coating's color.
- Avoid strong de-rusting operations before painting without loss of performance.
- Don't compromise the coating anticorrosion performance on non-rusted substrates.



Paint without  
ASCOTRUST®



Paint with  
ASCOTRUST®



Paint with tannic  
acid-based additive

WB paint applied on  
superficial rust  
with 1 layer (DFT 40 µm)



Metal paint without  
ASCOTRUST®



Metal Paint with  
ASCOTRUST®

SST (300h) on rusted  
steel panels  
with 1 layer of metal paint  
(DFT 100 µm)



Metal paint without  
ASCOTRUST®



Metal Paint with  
ASCOTRUST®

SST (300h) on rusted  
steel panels  
with 1 layer of metal paint  
(DFT 80 µm)

# TECHNICAL SUPPORT

The ASCOTEC® R&D laboratory can offer tailor-made studies for paint formulation development and/or anticorrosion pigment replacement.

ASCOTEC® R&D laboratory is equipped with the main reference testing equipments for corrosion, in accordance with ISO 12944 standards on corrosion and durability.

Testing	Standard	Evaluated Performance
Salt spray	ASTM B117 ISO 9227	Barrier effect, water-resistance, delamination resistance
Condensation	ASTM D4585 ISO 6270-1	Water-resistance (direct condensation on film layer)
Humidity	ASTM D2247	Water-resistance (high humidity exposition)
Bac ford	ASTM D870 ISO 2812-2	Water-resistance (complete immersion)
Climatic (condensation/UV)	ASTM D5894 ISO 11507	Barrier effect, water-resistance, delamination resistance
Adhesion	ASTM D3359 ISO 2409 ISO 2812-3	Adhesion on various substrates Adhesion test after chemical contact
Hardness	ASTM D4366 ISO 1522	Determination of film hardness by Persoz and König



**YOUR KEY PARTNER  
FOR ANTICORROSION**



ASCOTEC FRANCE



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