



**■ BASF**

We create chemistry

## **EC-Lock+ Technology**

**Innovative Rain Mark Resistant  
Solution for Exterior Coatings**

Rain streak marks or snail trails is one of the main early discoloration phenomena in exterior coatings, especially in dark finishes. The uneven vertical shiny stripe marks appear on the coating's surface after rain, or due to dew formation.

BASF's new EC-Lock technology prevents water penetration and locks the excipients, which can stop them migrating to the surface. Hence, it can reduce early rain marks / snail trails and avoid formation of dirt streak marks on the coating surfaces.



# BASF's new EC-Lock Technology – without marks on the exterior walls!

BASF's Rain Marks Resistance Coatings Solution is designed to address the rain streak marks / snail trails, especially during the early stage of exterior coatings after application. Rain mark resistant is achieved by the following ways:

1

## EC-Lock Technology - High density crosslinked film

The coating consists of internal cross-linking to prevent water penetration which leads to improved coating performance

2

## Hydrophobically modified dispersing agent

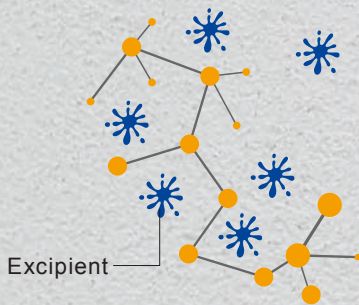
The internal cross-linking prevents water penetration, leading to improved coating performance

3

## EC-Lock+ Technology – Synergistic effect of polymer dispersion and dispersing agent

Water penetration can be reduced by interlocking excipients, stopping them migrating to the surface during the early curing of coatings

## Why is EC-Lock rain mark resistant?

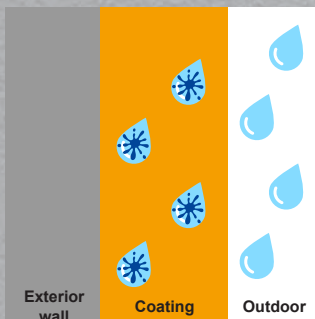


Paints consist of polymer dispersion, pigments/ fillers, additives and excipients.



When it rains...

### Conventional formulation

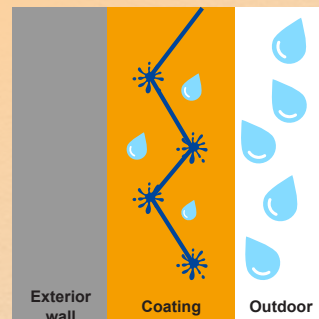


Hydrophilic compounds in conventional coatings will be dissolved and carried to the surface by water.



Water-soluble compounds are migrated to the surface and form water streak marks.

### BASF EC-Lock / EC-Lock + Technology



The EC-Lock / EC-Lock+ Technology developed by BASF reduces water penetration by interlocking excipients, stopping them migrating to the surface.



The coatings are now rain-mark-free, looking nice and neat – no matter what colors you use.




# EC-Lock

## EC-Lock Rain Marks Resistance coating solutions

### Acronal® PLUS

Acronal® PLUS functionalized polymer dispersion was developed with the latest EC-Lock Technology, effectively addresses the early rain streak marks, high durability and outstanding color retention.



 Significant reduction of rain marks!



EC-Lock Technology



Reduce rain mark streaks



Reduce water permeability



Color retention

#### Acronal® PLUS 7018

Application	Exterior coatings
MFFT (°C)	ca. 24°C
pH value	9.0–10.5
Viscosity (sp#1, 20rpm)	100–500 cps
Solid content (%)	45 +/- 1

## EC-Lock+ EC-Lock+ “Near-Zero” rain marks coating solutions



Acronal® PLUS



Dispex® CX 4231



EC-Lock+ “Near-Zero”  
Rain Mark Resistant Solution

Dispex® CX 4231 is a highly efficient ammonium salt of a carboxylic acid copolymer. Effective for dispersing of inorganic fillers and pigments in paints with a pronounced hydrophobic character. Synergistic effect with Acronal® PLUS for outstanding rain streak marks resistance and high durability.



 “Near-Zero” rain mark!



EC-Lock+ Technology



“Near-Zero” rain marks



Reduce water permeability



Excellent color retention

#### Dispex® CX4231:

Application	Rain mark resistant exterior dispersion
Solid contents (%)	30



## Formulation

Raw Materials	Dosage	Description
Water	200.0	
Natrosol® 250 HBR	4.0	
AMP95	2.0	
Dispex® Ultra FA 4480	1.0	
Dispersant	5.0-10.0	Dispersant
Foamaster® MO NXZ	2.0	Defoamer, BASF
CC 1000	80.0	Calcium carbonate
CC700	300.0	Calcium carbonate
Dispersion	290.0	

Raw Materials	Dosage	Description
Foamaster® MO NXZ	2.0	Defoamer, BASF
Acticide EPW	3.0	Fungicide
Acticide MV	1.0	Biocide
Texanol	15.0	
Propylene Glycol	10.0	
Rheovis® PU 1291	3.0	HEUR, BASF
Water	77.0 - 82.0	
Total	1000.0	

## Color matching

Added 10% blue-black mixed color paste in titanium-free white base paint to make it dark gray.

Raw Materials	Description
Titanium-free white base paint	1000.0
Mixed color paste	100.0

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