



# ALCAMIZER®

HEAT STABILIZER  
FOR PVC



# UNBEATABLE NON-TOXIC HEAT STABILIZATION FOR PVC

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## NON-TOXIC HEAT STABILIZATION FOR PVC

ALCAMIZER® is the brand name for our range of hydrotalcite products specifically designed for PVC. These environmentally friendly materials are halogen scavengers in heavy metal-free stabilizer systems for PVC. ALCAMIZER® products are generally considered to be the best of their kind.

## THE INVENTORS OF SYNTHETIC HYDROTALCITE

Kyowa Chemical Industry was the first company in the world to succeed in the industrial synthesis of hydrotalcite, introduced as an antacid for the pharmaceutical industry in 1966. Since then, Kyowa and its subsidiary Kisuma Chemicals have continuously worked on product optimization and development to ensure that our quality and expertise are still unrivalled in the market today

## PRODUCT DESCRIPTION

Hydrotalcites are layered double hydroxides that contain positively charged hydroxide layers and charge balancing anions located in the interlayer region. The hydrotalcites produced by

our proprietary and unique technology are highly pure compounds of magnesium and aluminium with optional zinc. The substantial anion-exchange capacity of our hydrotalcites make them excellent halogen scavengers in many polymer systems.

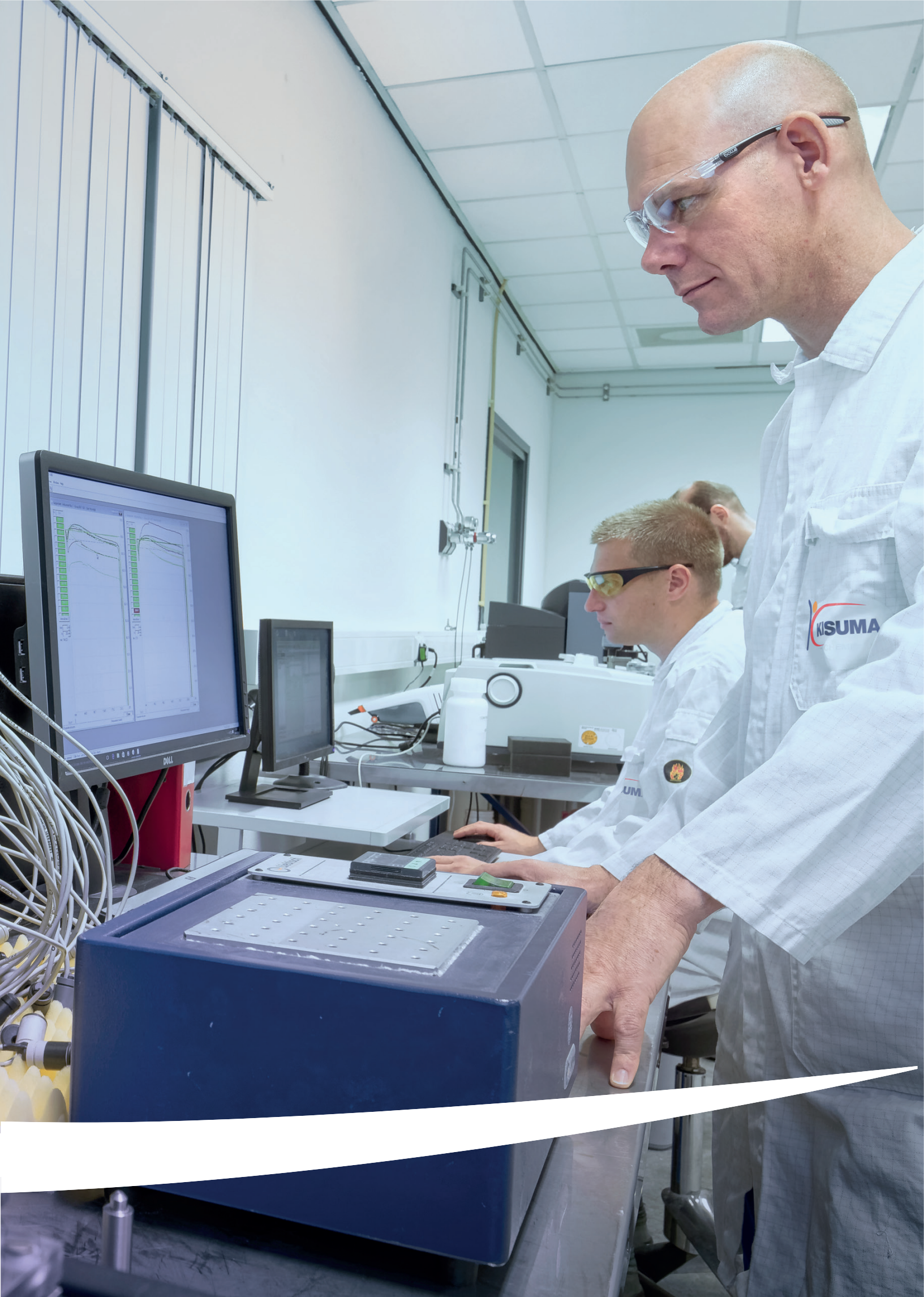
## MODERN FACTORY IN THE NETHERLANDS

Our factory was built in 1999, but expansion work practically never stopped. Today, we produce up to 30,000 tonnes of magnesium compounds per year. The plant is strategically located near raw material suppliers and logistic infrastructure, allowing us to transport our products efficiently all over the world.

## THE WORLD'S LOCAL SUPPLIER

We are a financially secure and reliable business partner that can supply products anywhere in the world, at any time and in any quantity. Most of our products are readily available, because we choose to supply from stock. This allows us to provide optimal support and flexibility to our customers.





Throughout the European PVC Industry's voluntary commitment to non-heavy metal heat stabilization systems, we have pioneered the development of optimized halogen scavenging hydrotalcites for use in lead-free systems. Our state-of-the-art factory in the Netherlands is the single largest production facility for synthetic hydrotalcites in the world. All products coming from this fully automated manufacturing plant are of the highest available quality.

#### DESIGNED FOR PERFORMANCE

The exceptional stabilizing effect of ALCAMIZER® in PVC originates from its capability to effectively scavenge chloride ions that are released during thermal degradation of the polymer. ALCAMIZER® will exchange the carbonate in its crystal structure for available chloride ions. Since chloride ions bind strongly to the inorganic host, they are rendered harmless, preventing further acceleration of PVC degradation.

#### ADVANTAGES OF ALCAMIZER®

- + ALCAMIZER® can be used in both Calcium Organic and Tin stabilizing systems for PVC
- + ALCAMIZER® promotes excellent thermal stability and color hold for PVC applications
- + ALCAMIZER® complies with all standard requirements for safety and handling
- + ALCAMIZER® has outstanding properties for transparency because its refractive index is similar to that of PVC
- + ALCAMIZER® has superior characteristics for dispersion, weatherability and compounding with high dosage levels
- + ALCAMIZER® is suitable for all types of PVC resin including suspension, emulsion, co-polymers and mixed polymers

#### PEACE OF MIND INCLUDED

The performance properties of hydrotalcites depend mainly on their chemical composition, so precise process control over Mg, Al and Zn content, crystallization and removal of residual moisture are vital to ensure consistently high quality. ALCAMIZER® products are produced using automated processes that are carefully monitored by our quality control system to ensure your products retain superior heat stability and transparency. In addition, we always have sufficient ALCAMIZER® in stock to guarantee continuity and reliability for our customers around the world.

#### AVAILABLE PRODUCT GRADES

Many years of fruitful collaborations with industry leaders has resulted in our current portfolio of ALCAMIZER® products. We are sure that we have a solution for your specific needs.

- + ALCAMIZER® 1: The industry standard
- + ALCAMIZER® Plus: Improved heat stability
- + ALCAMIZER® P93: Improved early coloring and weatherability due to implemented zinc in the hydrotalcite structure
- + ALCAMIZER® WP: Special grade for window profile applications
- + ALCAMIZER® 2: Suitable for higher processing temperatures (e.g. CPVC)

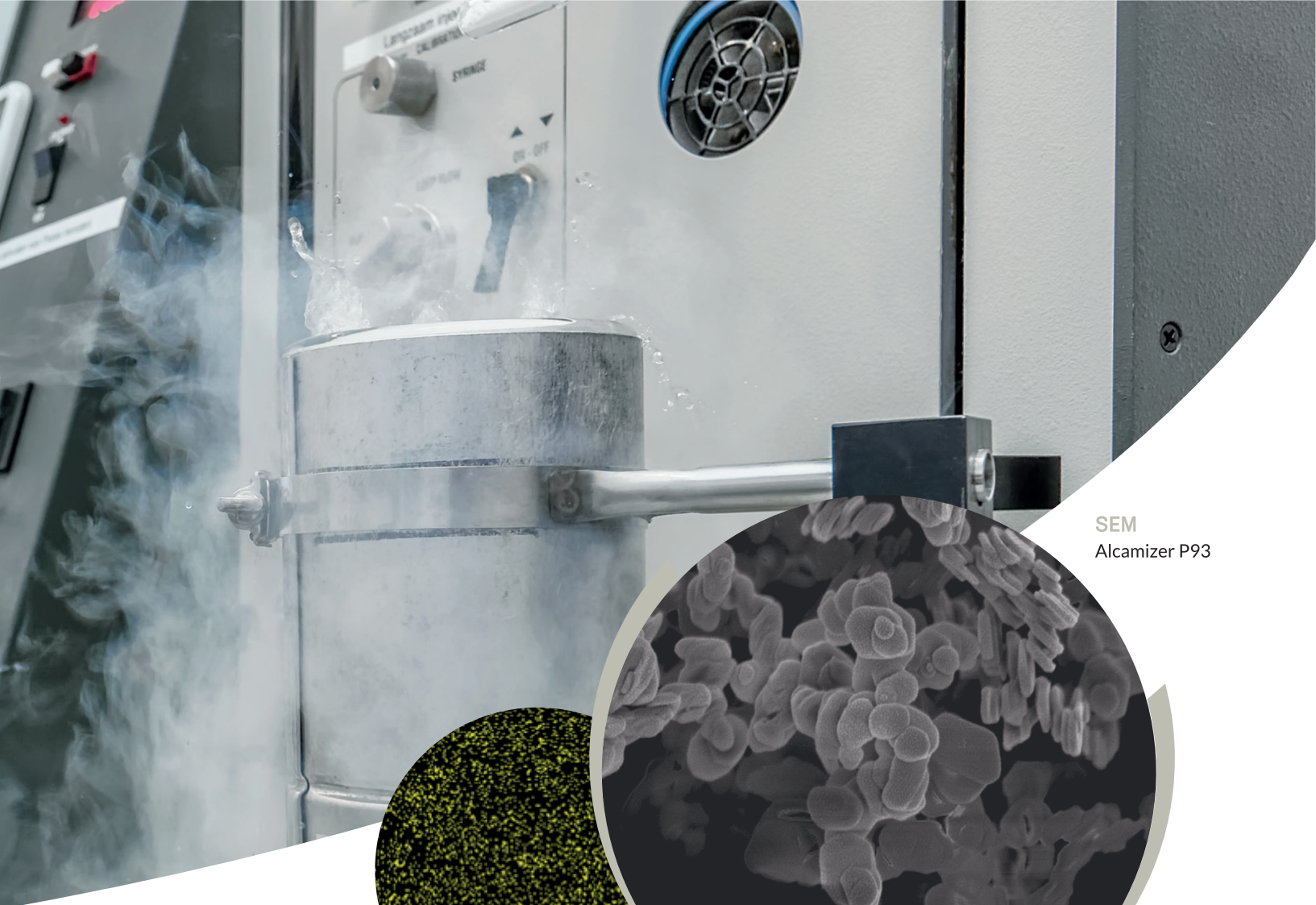
# ENVIRONMENTALLY FRIENDLY HEAT STABILIZERS





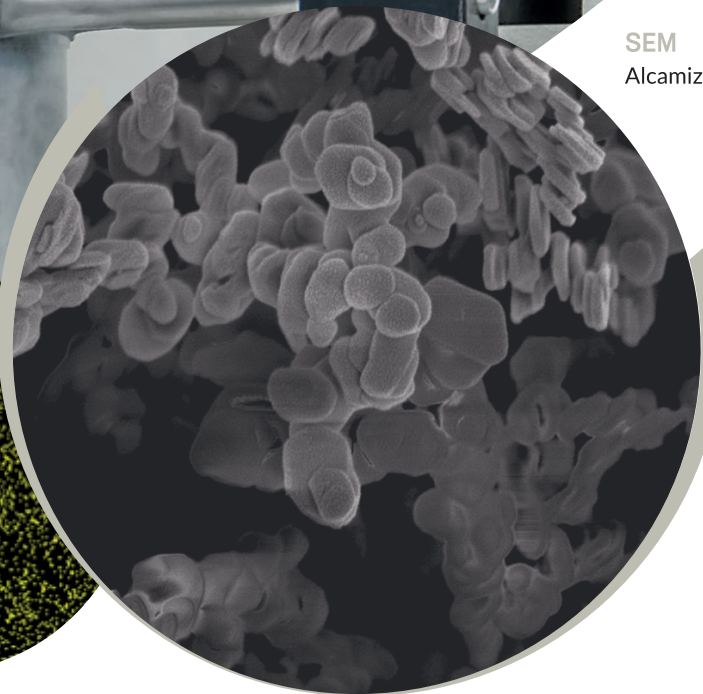
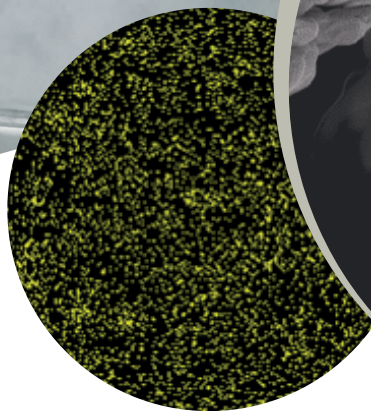
#### TYPICAL VALUES OF ALCAMIZER

Typical values	Alcamizer 1	Alcamizer Plus	
Appearance	Free flowing White powder	Free flowing White powder	
Molar ratio MgO/Al <sub>2</sub> O <sub>3</sub>	4	4.2	
Molar ratio ZnO/Al <sub>2</sub> O <sub>3</sub>	-	-	
Loss on Drying (105°C/1hr)	0.2	0.2	w/w%
Specific Surface Area	8	10	m <sup>2</sup> /g
Secondary particle size Average	0.7	0.5	µm
Specific Gravity	2.1	2.1	
Mohs hardness	2.0	2.0	
Refractive index	1.50	1.50	
Temp. of commencing dehydration	185	185	°C
Amount of linseed oil absorbed	50	50	ml/100g



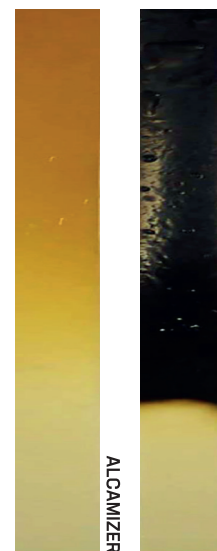
SEM  
Alcamizer P93

**SEM/EDS -  
ALUMINIUM SCAN**  
Excellent dispersibility of  
Alcamizer in the PVC matrix



### IMPROVED HEAT STABILITY

Typical values	Alcamizer P93	Alcamizer WP	
Appearance	Free flowing White powder	Free flowing White powder	
Molar ratio MgO/Al <sub>2</sub> O <sub>3</sub>	3	3.5	
Molar ratio ZnO/Al <sub>2</sub> O <sub>3</sub>	1	0.5	
Loss on Drying (105°C/1hr)	0.2	0.2	w/w%
Specific Surface Area	7	7	m <sup>2</sup> /g
Secondary particle size Average	0.7	0.6	µm
Specific Gravity	2.3	2.3	
Mohs hardness	2.0	2.0	
Refractive index	1.54	1.54	
Temp. of commencing dehydration	185	185	°C
Amount of linseed oil absorbed	50	50	ml/100g



ALCAMIZER

NO ALCAMIZER

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