



# PRODUCT PRESENTATION

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 euroMinerals

# intalc

White, hydrophobic, flexible, soft – therefore versatile!



	Whiteness [Y]	Sedigraph		Master Sizer		Oil Absorption [ml]
		d <sub>98</sub> [μm]	d <sub>50</sub> [μm]	d <sub>98</sub> [μm]	d <sub>50</sub> [μm]	
<b>intalc 12060 LA</b>	90	-	-	298.0	85.0	-
<b>intalc 6020 LA</b>	90	60	18.0	100.0	32.0	26
<b>intalc 60 LA</b>	91	50	10.0	90.0	19.0	28
<b>intalc 40 LA</b>	91	30	7.6	65.0	20.0	29
<b>intalc 20 LA</b>	91.5	19	5.0	42.0	13.3	37
<b>intalc 10 CG</b>	92	10	3.0	26.0	8.6	43
<b>intalc 8 CG</b>	91	8	2.0	18.0	6.6	51
<b>intalc ECO 60</b>	87	50	10.0	90.0	19.0	26
<b>intalc ECO 40</b>	87	30	7.6	65.0	20.0	29
<b>intalc ECO 20</b>	87	19	5.0	42.0	13.3	35
<b>intalc ECO 10</b>	86	10	3.0	26.0	8.6	43
<b>intalc ECO 8</b>	86	8	2.0	18.0	6.6	51



## T - WHITE, HYDROPHOBIC, FLEXIBLE, SOFT ... ... SIMPLY VERSATILE

- Tri-octahedral layered mineral (phyllosilicate) with a distinctive lamellar structure.
- General chemical composition:  $Mg_3Si_4O_{10}(OH)_2$
- Softest mineral (Mohs hardness 1) (Calcite: 3)
- Chemically inert and insoluble in acids
- Specific gravity:  $2.58-2.83g/cm^3$  (Calcite  $2.8g/cm^3$ )





## Advantages

- Gives a matting effect
- Improves abrasion resistance, adhesion properties and rheology
- Improves opacity
- Improved weatherproofness
- Gives dispersibility in water-based and solvent-containing systems
- Gives higher elasticity
- TiO<sub>2</sub>-Extender



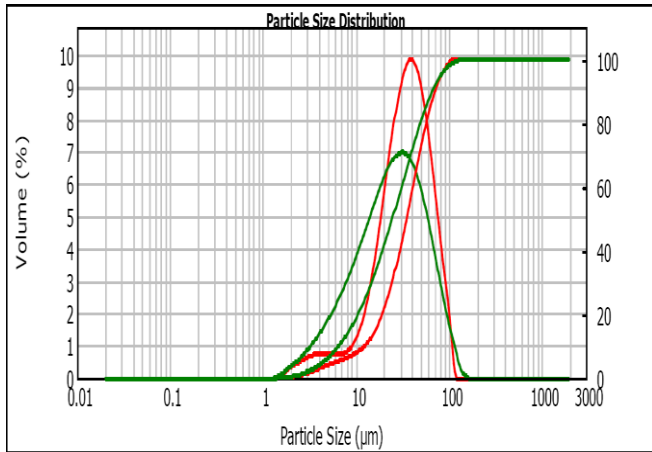
## Applications

- Indoor and outdoor paints (silicate, silicon, colloidal silica and emulsion binders)
- Plasters (lime-, gypsum-, cement- and emulsion-based)
- Industrial coatings
- Corrosion protection systems
- Polyester fillers
- Plastics (PP, PE, PA, PMMA)
- Ceramics

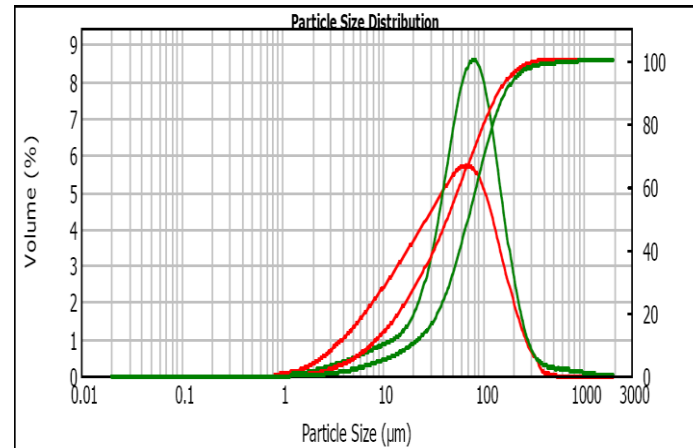
	Product	Application	Benefits
top-cut ↑	120 µm		
	intalc 12060LA Y = 90	plasters (renders)	crack resistance reduction of pinholes TiO <sub>2</sub> -extender increased colouring
	60 µm		
	intalc 6020LA Y = 90	exterior paints	crack resistance excellent dispersability
		interior paints	crack resistance matting effect excellent dispersability
		putties	crack resistance
	20 µm		
intalc 20LA Y = 91,5	interior paints	TiO <sub>2</sub> -extender excellent dispersability	
10 µm			
intalc 10CG Y = 92	interior paints	TiO <sub>2</sub> -extender excellent dispersability	
8 µm			
intalc 8CG Y = 92	interior paints	TiO <sub>2</sub> -extender excellent dispersability	

## INTALC 12060LA & INTALC 6020LA

Steep grain size distribution line and a clearly reduced fine fraction



Comparison **intalc**  
60LA/intalc 6020LA



Comparison  
intalc 120LA /intalc 12060LA





## NARROW PARTICLE SIZE RANGE AND A CLEARLY REDUCED FINE FRACTIONS

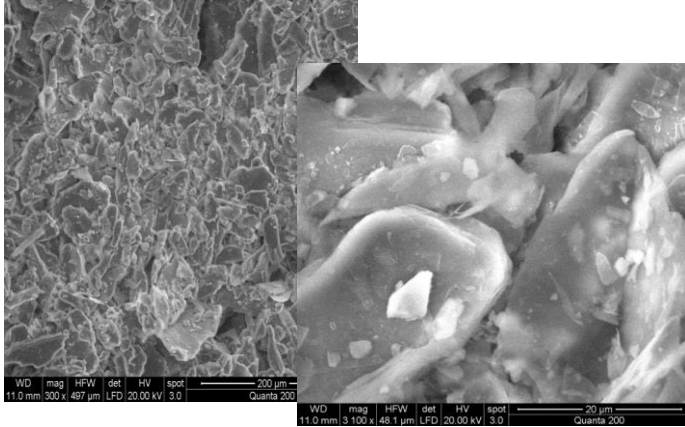
- ... considerably improve behaviour with regard to
- "pinholes"
- susceptibility to cracks



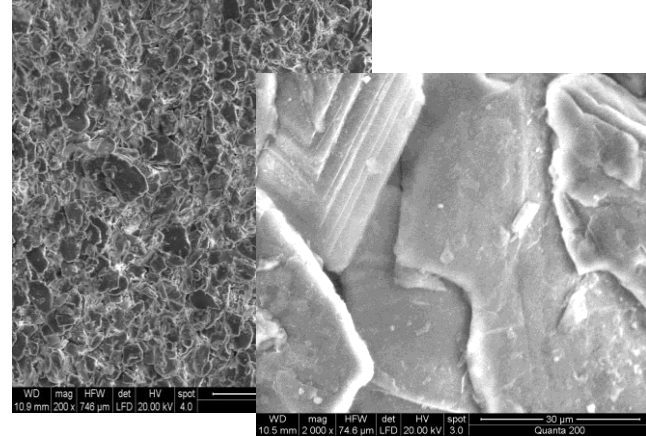


- In the case of **intalc 12060LA** and **intalc 6020LA** we produce distinctive lamellar structures in a narrow range of grain sizes.
- This enables the use of both intalc products as an alternative to mica/mica composites and leads to the following additional advantages:
  - Considerably higher whiteness (FMY: up to 92%)
  - Clearly lower oil absorption number
  - Lower product volumes needed
  - Improved dispersibility

## LAMELLAR STRUCTURE



intalc 120LA



intalc 12060LA

„Combining positive qualities, utilizing synergies,  
achieving new qualities“

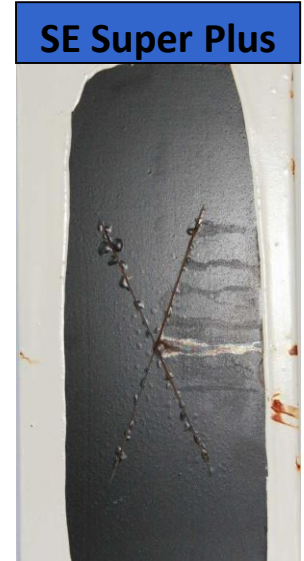
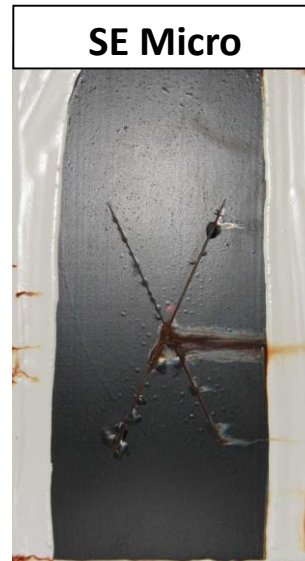
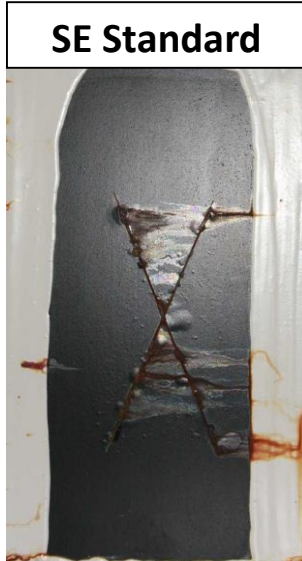
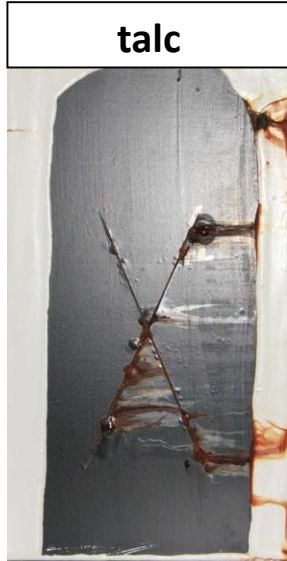
	Whiteness [Y]	Sedigraph		Master Sizer		Oil Absorption [ml]	Talc [%]	Dolomite [%]
		d <sub>98</sub> [μm]	d <sub>50</sub> [μm]	d <sub>98</sub> [μm]	d <sub>50</sub> [μm]			
<b>ASE 60</b>	89.0	60	8.8	81	19	25	50	50
<b>ASE Super</b>	91.0	12	3.5	27	8.2	35	50	50
<b>SE Standard</b>	88.5	40	7.3	58	13.3	23	25	75
<b>SE Micro</b>	89.5	20	4.5	30	7.7	25	25	75
<b>SE Super</b>	90.5	12	3.1	25	6.4	29	25	75
<b>SE Super Plus</b>	90.5	12	3.5	25	7.2	31	36	64
<b>KL 30</b>	89.5	20	5.0	35	9.2	26	32	68
<b>BC Standard</b>	88.5	40	7.5	58	13.2	20	15	85
<b>BC Micro</b>	90.0	20	4.5	27	7.7	22	15	85
<b>BC Super</b>	89.5	12	3.5	16	5.9	24	15	85

# incomp

## SE Super Plus

OAN (ml/100g)	Talc	Talc/ Chlorite	Talc/ Magnesite	Incomp SE	Incomp SE Super Plus
~10µm	55	55	40	29	31
~20µm	45	40	38	25	-
~30µm	33	31	30	23	

- a tailor-made novelty for anti-corrosion paints
- developed for special customer specifications



960 hrs salt spray test – tested by the customer  
in his own formulation

## 2PACK PU FORMULATION FOR PRIMER

(30min/80°C)

	<i>Ingredients</i>		<i>Percentage</i>
A1	Macrynal SM 2704/45 BACX	(1)	20,60
	ADDITOL XL 251	(1)	0,85
	ADDITOL XL 280	(1)	4,90
	Xylol		5,00
	Butylacetate		5,00
	Methoxypropyl acetate		5,00
	Bayferrox 130 M	(2)	7,95
	Barite EWO	(3)	15,25
	Aerosil R 972	(4)	0,30
	SE Super Plus	(5)	24,90
A2	Heucophos ZPA	(6)	8,06
	Ceridust 9615 A	(7)	0,30
	Metatin 712 E/1X	(8)	0,06
	Diethylethanolamine		0,03
	Xylol		0,60
B	Butylacetate		0,60
	Methoxypropylacetate		0,60
	Desmodur N 3300	(9)	3,40
	Xylol		1,13
	Butylacetate		1,13
	Methoxypropylacetate		1,13





Incomp SE Super Plus



Talc



Mica

## 2PACK EPOXY ANTICORROSIVE PRIMER SYSTEM

<b>Components part A</b>		amount (%)
I	BECKOPOX EP 2384w/57WA	42,9
	ADDITOL VXW 6208/60 (wetting & dispersing agent)	1,30
	ADDITOL VXW 6393 (defoamer)	0,30
	deionized water	10,10
II	Talc	5,90
	Kronos 2190	20,7
	Bayferrox 3920	0,30
	Bayferrox 306	0,80
	EWO normal (Extender)	16,20
III	ADDITOL VXW 6393	0,10
	Texanol	0,70
	ADDITOL VXW 6388	0,70
	total:	100
<b>Components part B</b>		amount (%)
	BECKOPOX VEH 2188w/55WA	16,3

**Properties checked after applying 125µm wet- and  
45µm dry-film thickness and drying for one week:**

1. Gloss at 20°
2. Scrub resistance

## 1. Gloss at 20°

Pos.	sample	characteristic	gloss, 20°
1	VA 1403-21	5,9% SE Super Plus (ground composite material)	36,1
2	VA 1403-20	2,1% intalc 10 CG + 3,8% indolo 12 (mixed only)	29,7

following Pos. 1 & 2: dependancy of gloss on the grinding process

- SE Super Plus showed immediately eye-catching results in terms of gloss
- Consequently, higher gloss means a better cohesiveness of the surface at the same time.

## 2. Scrub resistance

film thickness: 125 µm wet / 45 µm dry

sample	characteristic, parameter	amount of abrasion [mg/152 cm <sup>2</sup> ]	loss in film thickness [µm]	abrasion %-relative
VA 1403-21	5,9% SE Super Plus	170	6	-37
VA 1403-19	5,9% intalc 10 CG	270	9	0*
VA 1403-23	3,8% Talc + 2,1% Calcium Carbonate	240	8	-11

\* 0 means standard/reference product (typical filler in such a system)

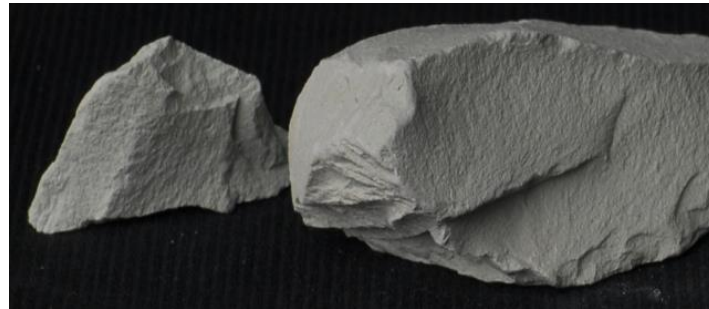
- With incomp SE Super Plus 26% higher abrasion resistance compared to the simple mixed talc and carbonate product can be noted.
- Compared to pure talc ...37% improved abrasion resistance is feasible.

## Conclusion

- SE Super Plus is better and easier to disperse compared to pure talc and mica. This leads to a decrease in energy input and a shorter dispersion time !!
- Due to its composition, SE Super Plus combines both properties; it is hydrophobic and hydrophilic at the same time.
- Its low oil absorption results in less needed binder and solvents (high solid system)
- With SE Super Plus higher abrasion resistance can be noted compared to mixed mixed talc and carbonate products and also compared to pure talc.
- SE Super Plus shows the best corrosion protection and spread of corrosion is minimal compared to alternative minerals.
- With SE Super Plus you can reach higher gloss



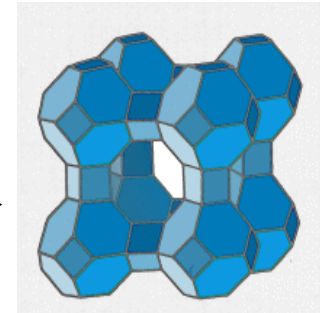
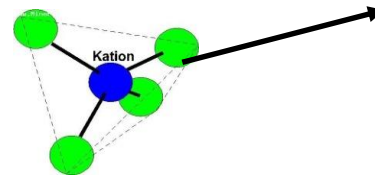
Innovative qualities made of volcanic rock –  
natural clinoptilolite-zeolite



	Klinoptilolith [%]	CILAS		Master Sizer	
		d <sub>98</sub> [μm]	d <sub>50</sub> [μm]	d <sub>98</sub> [μm]	d <sub>50</sub> [μm]
<b>inzeo mono 15/5</b>	> 85	15	5	27.0	7.5
<b>inzeo mono 50/7</b>	> 85	50	7	70.6	15.8



- A mineral of volcanic origin
- Approx. 50 naturally occurring zeolites are known today
- Crystalline aluminosilicate in numerous modifications
- Chemical composition  $M_{x/n} [(AlO_2)_x(SiO_2)_y] \cdot zH_2O$
- Tectosilicates of  $[SiO_4]$ - or  $[AlO_4]$ -tetrahedrons in polycyclic ring compounds– 4-/6-/8-fold ring structures
- Considerable variations in quality, purity, etc.
- Specific gravity: 2.2-2.5g/cm<sup>3</sup> (Calcite 2.8g/cm<sup>3</sup>)
- Mohs hardness: 3.5





## APPLICATION:

- Mineral systems (top coats and base coats, plaster mix as well as glue and renders etc.) to reduce calcium carbonate and iron salt efflorescence.
- Repair coating work
- House paint and plaster (i.e. for the reduction of pollutants, e.g. interiors)
- Facade paints and plasters, etc. for the reduction of pollutants and moisture build up and condensation effects (indoor and outdoor applications)
- Pozzolanic cement concrete aggregate
- Water retardant
- Rheological additive
- Smell reduction in recycled plastics
- Wastewater treatment
- Special filter aid (elimination of overspray in car painting lines)



“Combine existing features and create new qualities”

# inbond

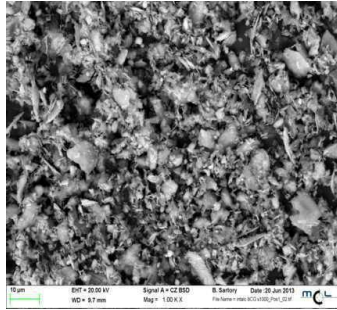
	Whiteness [Y]	Master Sizer MS 2000		Oil Absorption [ml]
		d <sub>50</sub> [µm]	d <sub>10</sub> [µm]	
<b>inbond line</b>	≥ 94,5	≤ 4,5	~0,1	30-35

<b>inbond line</b>	<b>TiO<sub>2</sub> Pigment Type</b>	<b>Application</b>
<b>inbond TI 8C</b>	Chloride process	Coatings
<b>inbond TI 8S</b>	Sulphate process	Coatings
<b>inbond TI 8SP</b>	Chloride process	Plastics

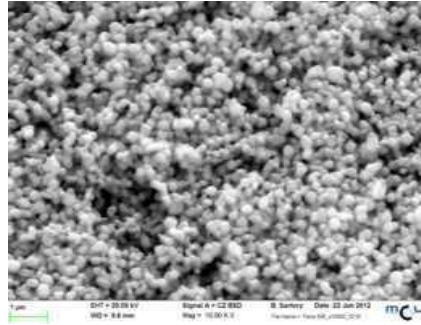


## CHARACTERISTIC

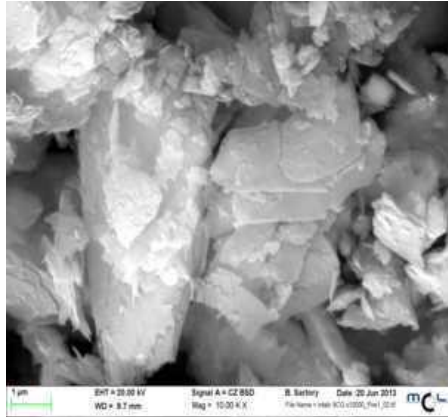
- inbond TI 8C (or S) is a composite based on talc and titanium dioxide (C = chloride, S=sulphate) that is produced by way of a multistage production process.
- Due to its surface characteristics, it is very similar to classic titanium dioxide.
- The goal is to implement a 1:1 exchange of TiO<sub>2</sub> for inbond TI 8C in existing formulations.
- Depending on the type of the formulation, approximately 10-30% of the TiO<sub>2</sub> can be exchanged – in primers or very simple/inexpensive formulations even more!
- No substantial influences on: rheology, viscosity, storage stability, gloss and resistance to weather.



intalc 8CG 1000x

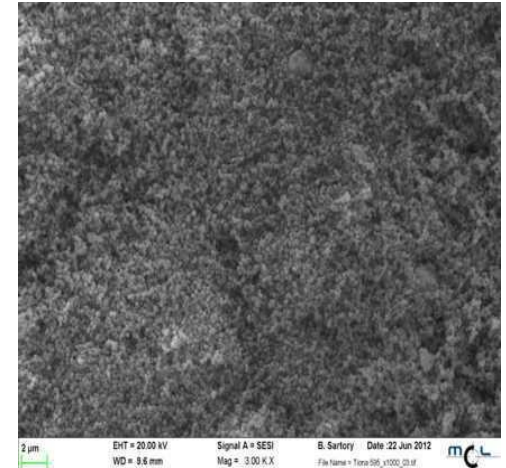


TiO2 (chloride) 10000x



intalc 8CG 10000x

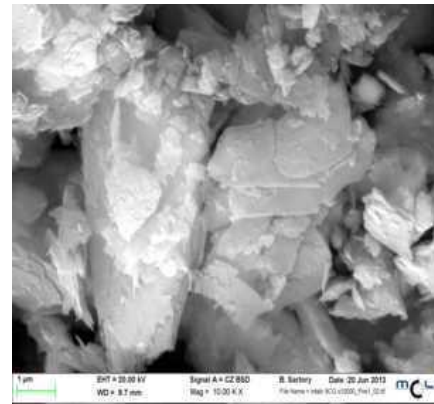
TiO2 (chloride) 1000x



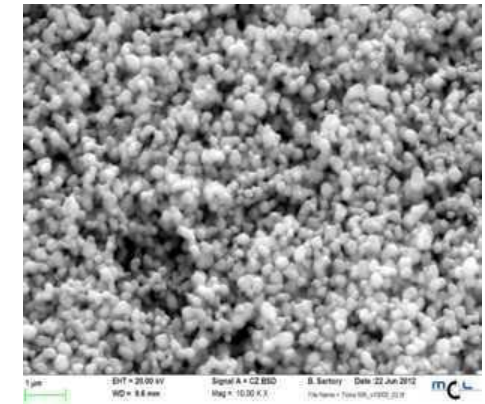
## SEM and REM comparison



intalc 8CG 10000x

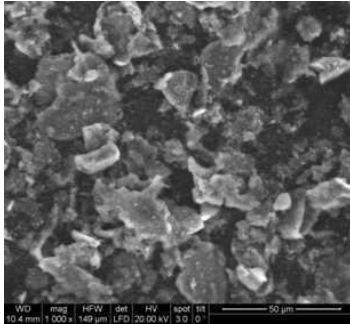


TiO2 10000x

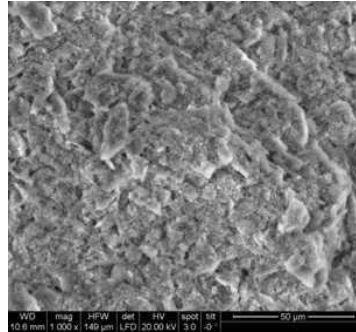


## inbond TI – SEM/REM comparison (mix 50:50)

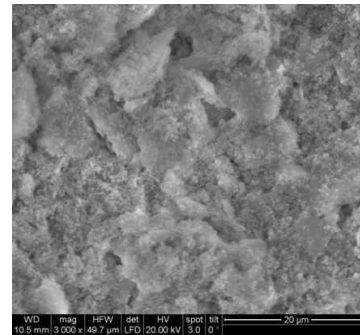
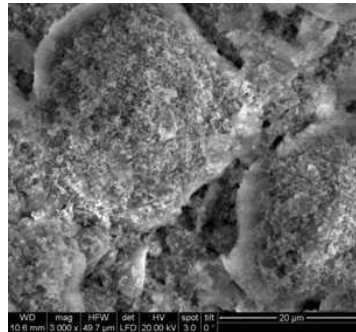
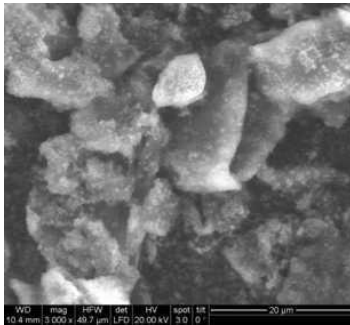
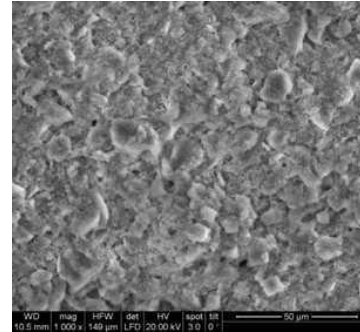
intalc 8CG + TiO<sub>2</sub> HM 1000x



intalc 8CG + TiO<sub>2</sub> SSM 1000x



intalc 8CG + TiO<sub>2</sub> MR 1000x



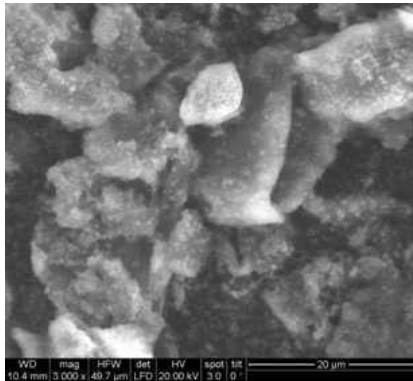
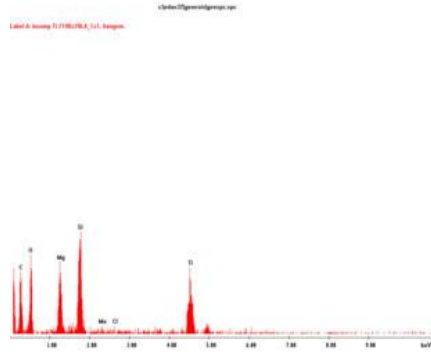
intalc 8CG + TiO<sub>2</sub> HM 3000x

intalc 8CG + TiO<sub>2</sub> SSM 3000x

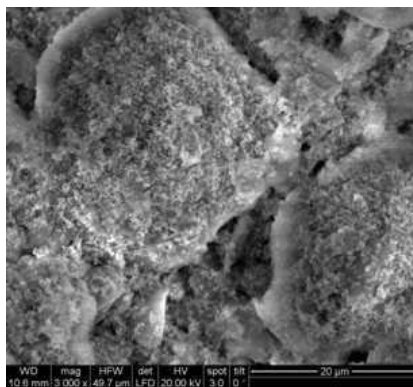
intalc 8CG + TiO<sub>2</sub> MR 3000x



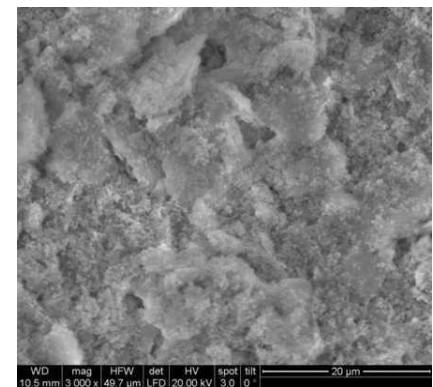
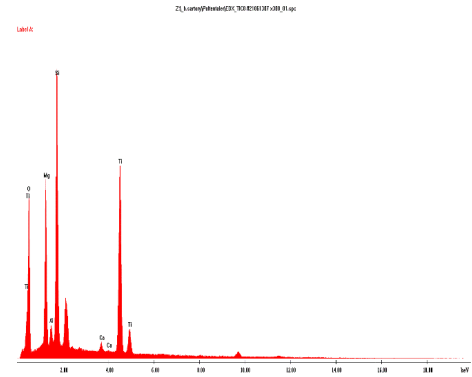
## inbond TI – SEM/REM comparison (mix 50:50)



intalc 8CG + TiO<sub>2</sub> HM 3000x



intalc 8CG + TiO<sub>2</sub> SSM 3000x



intalc 8CG + TiO<sub>2</sub> MR 3000x

## Technical Product Data Sheet

### inbond TI 8C

#### PRODUCT INFORMATION

Inorganic composite, based on Titanium dioxide and Talc as alternative to TiO<sub>2</sub> in different applications like plastic and plastic compounds

CHEMICAL PROPERTIES			
Moisture content ex work	(ISO 787/2)	≤1	%
Loss on ignition	(1050°C/1h)	7	%
SiO <sub>2</sub>	(RFA)	33	%
CaO	(RFA)	3	%
MgO	(RFA)	16	%
Al <sub>2</sub> O <sub>3</sub>	(RFA)	0.2	%
Fe <sub>2</sub> O <sub>3</sub>	(RFA)	0.3	%

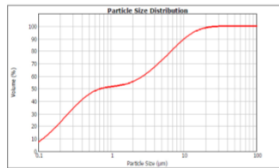
PHYSICAL PROPERTIES			
Specific surface area	(BET)	14.5	m <sup>2</sup> /g
pH value	(ISO 787/9)	8.5 – 9.5	
Density	(ISO 787/10)	3.2	g/m <sup>3</sup>
Bulk density	(EN 1097/3)	0.57	g/cm <sup>3</sup>
Oil absorption	ISO 787/5	32	ml/100g

OPTICAL PROPERTIES			
Whiteness Y	(Konica Minolta CR400)	min. 95	
Brightness L*	(Konica Minolta CR400)	min. 98	
Red/Green a*	(Konica Minolta CR400)	min. 0.1	
Yellow/Blue b*	(Konica Minolta CR400)	min. 0.15	

#### PARTICLE SIZE DISTRIBUTION

(Malvern Master Sizer MS2000)

d <sub>10</sub>	0.1	µm
d <sub>50</sub>	0.65	µm
d <sub>90</sub>	17	µm



TiO<sub>2</sub> chloride (d<sub>50</sub>~1.0 µm):

OAN value (ISO 787/5)  
18-22 g/100 g

inbond TI 8C (d<sub>50</sub>~0,65 µm):

32 g/100 g

intalc 8CG (d<sub>50</sub>~ 5 µm):

51 g/100 g

TiO<sub>2</sub> chloride (d<sub>50</sub>~1.0 µm):

BET (DIN66131/2)

17.0 m<sup>2</sup>/g

inbond TI 8C (d<sub>50</sub>~0,65 µm):

14.5 m<sup>2</sup>/g

intalc 8CG (d<sub>50</sub>~ 5 µm):

5,1 m<sup>2</sup>/g



# ADVANTAGES AND APPLICATIONS

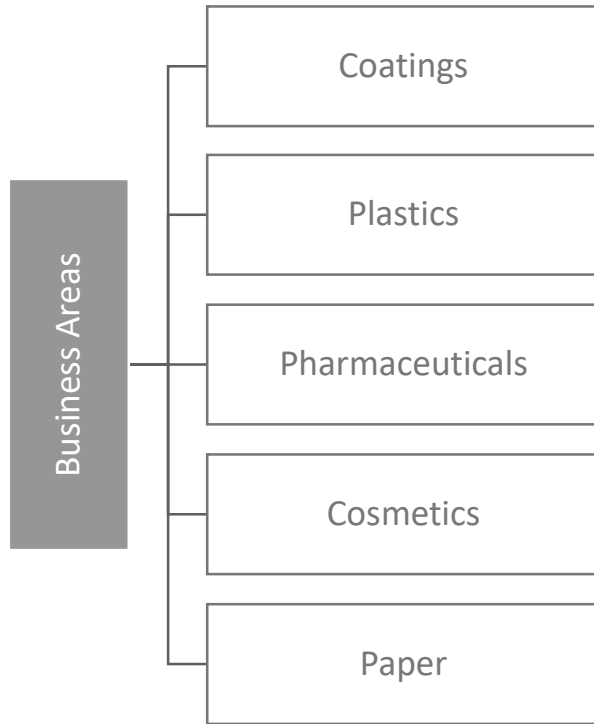
## Advantages

- Color strength (savings of pigment pastes)
- High covering capacity
- Lower oil count compared to conventional TiO2 extenders
- UV resistance
- Weather resistance
- Chemically inert
- Lower sedimentation tendency

## Applications

- Coatings
  - Dispersion paints (matte and silk-gloss systems)
  - Street marking paints
  - Sports field markers
- Plastics
  - PVC profiles
  - Films/Foils

# APPLICATIONS



# COATINGS

## Polyester putties and filling systems

- Low oil absorption
- High filling rates
- Good sandability
- Fineness
- Good dispersibility
- Whiteness

Quantities used: 10 – 65 %



# COATINGS

## DECORATIVE

- Low oil adsorption
- Hybrid function in wettability
- Low structural viscosity
- Excellent matting
- Good leveling
- Excellent applicability
- Low foam retention
- TiO<sub>2</sub> Extender function

Quantities used: 3 – 10 %



# COATINGS

## Wood & metal decorative

- Low oil adsorption
- Hybrid function in wettability
- Low structural viscosity
- Semi-matt
- Good leveling
- Excellent applicability
- Low foam retention
- TiO<sub>2</sub> Extender function

Quantities used: 2 – 10 %



# COATINGS

## Industrial paints & coatings

- Anti-corrosive
- „Barrier Effect“
- Low oil adsorption
- Marine (for vessels)
- Off-shore (for oil rigs)

Quantities used: 5 – 15 %





# COATINGS

Industrial paints & coatings includes solvent-borne, water-borne or even solvent-free systems either for protective or decorative reason

- Opacity: Lamellar „Extenders“ helps to space (disperse) TiO<sub>2</sub>
- Barrier Effect: Lamellar „Extenders“
- Reduce water transmission
- Protect binder from UV-radiation
- Lower oil adsorption results in higher filling rates in high solids

Quantities used: 5 – 15 %

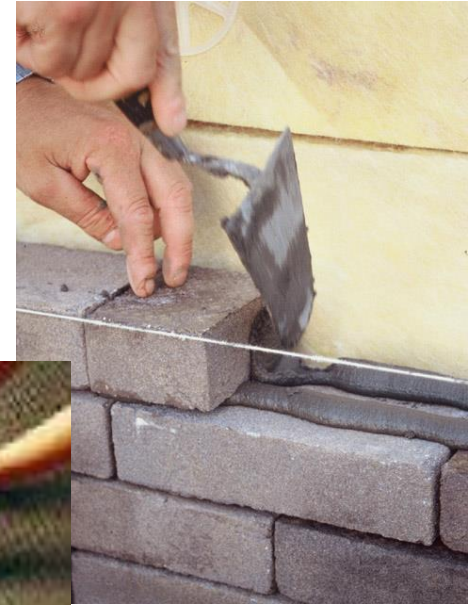


# COATINGS

## Adhesives

- To reduce formulation cost
- To improve rheology

Quantities used: 3 – 10 %

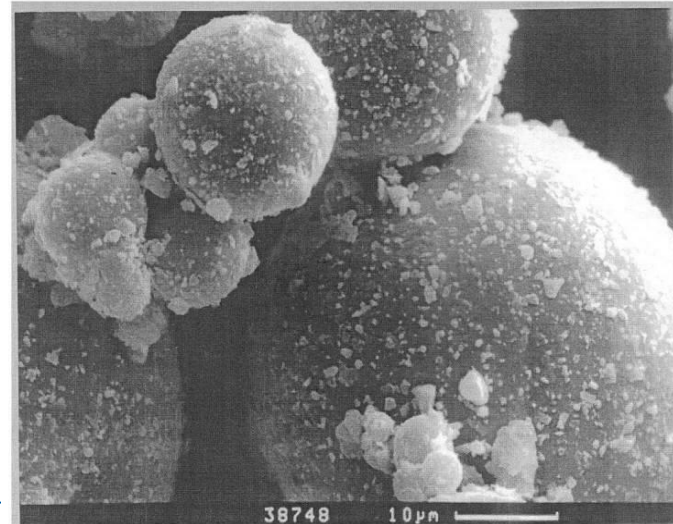


# COATINGS

## Re-dispersible emulsion powder (anti-caking)

- To avoid the dried soft particle from sticking together
- To guarantee perfect re-dispersion in water
- The softer the basic resin the more important the choice of the anti-caking agent

Quantities used: 8 – 15 %



# COATING

## Use of re-dispersible emulsion powders

### Tile adhesives

- Cement 35-50%
- Sand 0,1-0,5 45-60%
- Carbonate <100µm 5-10%
- Agents 0,3-2.3%
- Powder disp. 2-10%



# COATINGS

## Use of re-dispersible emulsion powders

### Putties

- Gypsum hydrate 60-80%
- Carbonate < 100µm 0-30%
- Talc 0-8%
- Agents 0,5-1,5%
- Powder disp. <3%

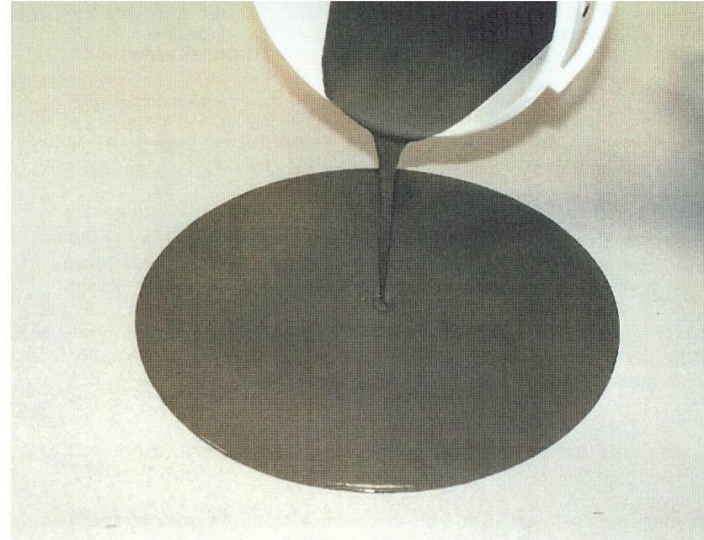


# COATINGS

## Use of re-dispersible emulsion powders

### Filling systems

- Cement 35-45%
- Fondue 3-6%
- Sand 0,1-0,5 45-60%
- Agents 2-4%
- Powder disp. 1-3%



# POLYMERS

Applications

electroni  
cal  
goods  
12%



others  
10%

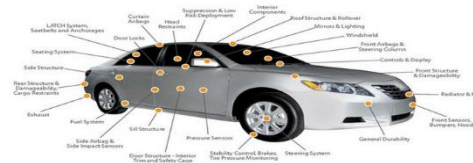
white  
goods,  
househol  
d  
34%



building  
industry  
16%



automotive  
28%



# POLYMERS

## PMMA GLASS

- To improve mechanical properties and reduce cost
- To improve whiteness (enables to save TiO<sub>2</sub>)
- Bathroom sinks and basins
- Sound proof wall

Quantities used: 5 – 50 %





# POLYMERS

## PVC window profile

- inbond in co-extrusion
- Outer and inner layer



# PHARMA & COSMETICS

Pharmaceuticals	Cosmetics
Basis for <b>powders</b>	Carrier for perfumed <b>body powder</b>
Active <b>agent</b> and auxiliary agent (carrier, with disinfectant, astringent, anti-itching or cooling effect)	Enhances optical and feel properties in <b>make-up</b>
<b>Lubricant</b> (for pill manufacturing)	Improves softness and lather in <b>soap, make up, body powder</b>
	Good <b>carrier</b> (in terms of fragrance, inertness)
	Oil base replacement
	Improves silkiness



# PAPER

## Decor Laminate Paper

- pH stabilisation
- TiO<sub>2</sub> Extender

Quantities used: 2 – 5 %





**WE ARE LOOKING FORWARD  
TO A SUCCESSFUL  
COOPERATION**

**WE HOPE YOU  
WILL ENJOY WORKING WITH  
OUR MINERALS**

Your euroMinerals-Team

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