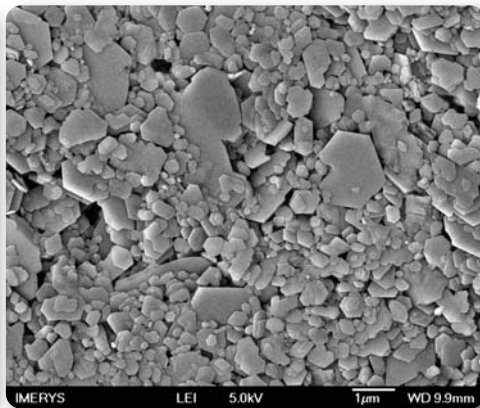


Capim™ NP

Capim™ NP is a high brightness delaminated grade from Imerys Rio Capim Caulim (IRCC) with a medium fine steep particle size distribution. Its principal benefits are coverage in single (or precoating) applications and a good balance between brightness and rotogravure printability in LWC. It also works well in offset in US CGW recipes when compared against regular delaminated clay.

Pigment	Capim™ NP
ISO Brightness	89
wt% <2µm	80
wt% <0.25µm	10
D ₅₀ µm	0.8
Shape Factor	20
Viscosity Concentration wt%	72.5
Applications	Precoat/Matt/Roto
Launched	1996



Capim™ NP in LWC Rotogravure

Capim™ NP is used widely in rotogravure applications in Europe and North America. In Europe recipes tend to contain significant amounts of talc and often a coarse, low brightness, platy partner clay. However, increasing brightness pressures in the market have led to the evaluation of alternative solutions. In this European study it can be seen that combinations of Capim™ NP with Capim™ RG give an excellent balance of gloss, brightness and rotogravure printability compared to the more conventional kaolins used in this sector.

European Rotogravure: 6 gsm coatings 56% Solids

All 70% Clay 30% Talc	Gloss	PPS 10	UV Brightness	Opacity	% Missing Dots
Euro Roto Clay	51	0.75	72.3	87.0	0.8
Euro Roto Clay + 30% Capim™ RG	52	0.75	72.8	86.8	0.6
Capim™ NP + 30% Capim™ RG	59	0.69	74.1	87.0	0.5

⊕ PCC

⊕ GCC

⊕ KAOLIN

Capim™ NP in US Rotogravure

This example is taken from a North American rotogravure study where **Capim™ NP** was used to replace a delaminated clay, 3 parts of plastic pigment and 1.5 parts of TiO₂. In this case smoothness and rotogravure printability was improved while gloss and optical performance were maintained.

Rotogravure 1200m/min 44

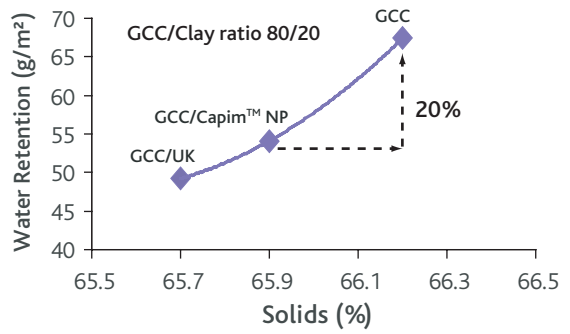
63 US Delam 15 Talc 15 Calcined 4 TiO ₂ 3 PP	→	67.5 Capim™ NP 15 Talc 15 Calcined 2.5 TiO ₂ 0 PP	
Gloss	62	Gloss	62
Brightness	77.2	Brightness	77.2
Opacity	91.8	Opacity	91.7
PPS	1.18	PPS	0.98
Heliotest (mm)	13	Heliotest (mm)	32

Capim™ NP for Precoat Applications

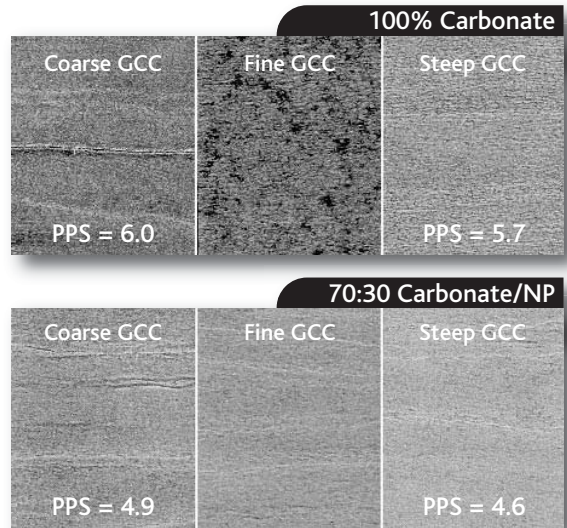
Pigment use in precoating is predominantly 100% coarse or steep carbonate. However, addition of low levels (15-30%) of **Capim™ NP** to precoating recipes can give considerable benefits to water retention and the physical and optical coverage of the basesheet.

In the board precoating study (above right) it can be seen that although **Capim™ NP** has a steep particle size it still gives significant benefits to water retention when added to the precoat. Indeed, the water retention impact was close to that given by a full fraction UK kaolin. This is particularly important in board applications where the base stock is hot and poor water retention can rapidly lead to runnability problems.

B&P Precoat Pilot Trial



In the burn-out example below the effect of adding 30% **Capim™ NP** to GCC precoat in woodfree MSP precoating can be seen. Coverage is significantly improved compared to the GCC-only recipes and there is a marked improvement in smoothness.



In addition, combining **Capim™ NP** with carbonate can disrupt the packing giving a bulkier structure with increased light scatter. This is good for optical coverage of the basesheet and can be particularly important in board applications. It can also help reduce the requirement for steep GCC use in precoating.

Summary - Capim™ NP

Target Segment/ Application	Key Attributes
LWC Roto & US CGW	Brightness, rheology, bulk. Gloss v conventional roto clays
Precoat	Water retention, coverage & smoothness and structuring with carbonate for increased scatter