

Recommended rate of pigmentation (% DECOMET® consistency):

Printing inks

Gravure/Flexo approx. 20 - 40 %
Screen approx. 20 - 70 %

Coatings

Mass tone approx. 3 - 6 %
Tinted tone approx. 3 %

Solid content

The lower the solid content in the varnish system, the better the effect. DECOMET® based coatings should ideally have a total solid content (pigment + binder + additive) of approx. 2 - 5 %, the ratio binder to pigment is around from 2:1 up to 8:1.

Solvents (Coatings)

Too fast solvents like acetone or ethylacetate prevent optimum alignment and parallel orientation of the DECOMET® particles. Much better are systems, which are based on a combination of fast and slow solvents (like Methoxypropanol or Methoxypropyl acetate).

A high solvent content leads to good shrinkage and therefore to good pigment orientation also at higher pigmentation rates.

Binders (Coatings)

For an optimum DECOMET® effect we recommend pure CAB systems, Acrylat/CAB-, CAB/NCO-mixtures and especially NC systems.

In case of CAB, a high molecular weight CAB-type like CAB 381-20 or CAB 171-15 is recommended. Both types offer a perfect optical appearance together with a good chemical resistance.

Excellent chrome-like effects can be achieved with melamine resins like CYMEL 303 in combination with an isocyanate.

Additives (Coatings)

The orientation of the DECOMET® particles can be improved by the use of waxes like Cerafak- or Ceratix²⁾ types. Recommended for use in solventborne systems are Cerafak 103 and/or 106 and Ceratix 8461 and/or 8463. Wetting agents like Byk P 104 S³⁾, Efka 5064 and Efka 5065⁴⁾ influence the DECOMET® effect positively.

The optimum use level of these additives is around 0.5 - max. 1.5 % on the formulation, depending on the type of wetting agent.

¹⁾ CAB 381-Types: Eastman Chemical Company, D-51149 Köln

²⁾ Cerafak- Ceratix-Types: BYK-Cera, NL-7416 EN Deventer

³⁾ Byk P 104 S: BYK-Chemie, D-46462 Wesel

⁴⁾ Efka-Types: EFKA-Additives Deutschland GmbH, D-40217 Düsseldorf



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75 agencies worldwide

Printed in Germany. CS 10/08



Properties

DECOMET® pigments have an extremely smooth surface. This leads to optimum reflection and extraordinary brilliance, thus resulting in a mirror-like finish.

In addition the extremely low particle thickness of DECOMET® (< 50 nm) provides excellent opacity and permits low use levels and cost-efficiency.

To be emphasized is the distinct non-leaving-character of DECOMET® which guarantees excellent intercoat adhesion and also offers the possibility of generating polychromatic effects (with transparent pigments/dyes).

The viscosity of the different DECOMET® grades is strongly dependent on the solvent used and should be carefully considered in further processing – especially in highly pigmented printing inks.

Processing parameters

Incorporation

Prior to use DECOMET® should be stirred thoroughly. Because of its comparatively low viscosity, DECOMET® can easily be incorporated at any stage of manufacture. However, it is important to ensure, that the dispersion process is carried out as gentle as possible, with low mixing speeds and shear forces, and if possible with rounded stirring tools.

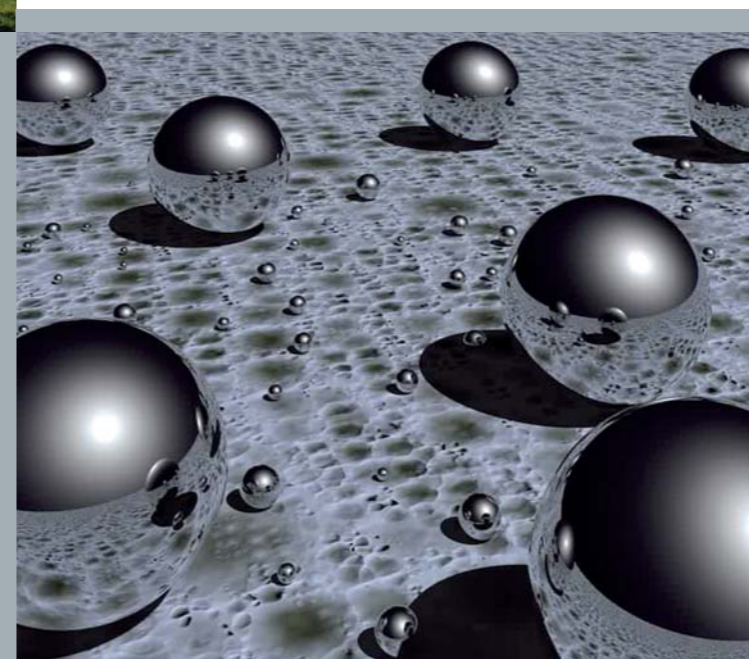
Substrate

The smoother the substrate, the better the effect achieved with DECOMET®. A primer with very high gloss and good levelling is recommended for rough or even absorbent substrates.

Pigmentation ratio

The possible metallic effect of DECOMET® depends strongly on the level of pigmentation. In coatings, a monolayer of DECOMET® particles gives the best results. Over pigmented systems should therefore be avoided.

In printing inks based on DECOMET® a more brilliant effect is generally achieved at higher pigment loadings.



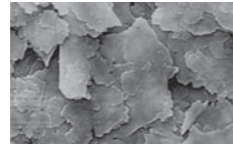
DECOMET®
VACUUM METALLIZED PIGMENT



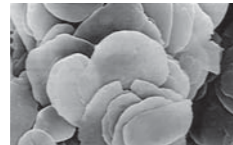
Characteristics

DECOMET® is a highly brilliant, lamellar aluminium pigment (minimum purity 99.9 %) for achieving high-value, foil-like metal effects.

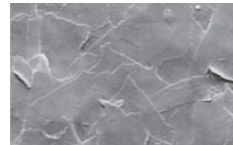
SEM - pictures:



„Cornflake-Type“ ALUCAR



„Silverdollar-Type“ ALUSHINE



„VMP-Type“ DECOMET®

DECOMET® normally is available as a 10% suspension.

As „vacuum metallized pigment“ (VMP) DECOMET® is produced by a special manufacturing process. It differs from standard aluminium pigments, produced in ball mills clearly in terms of particle shape, particle thickness and surface properties.

Fields of application

Coatings

- plastic coatings
- rim coating/automotive accessories
- consumer electronics
- reflection coatings
- decorative paints
- nail polish systems



Printing inks

- offset printing
- gravure printing
- flexographic printing
- screen printing



		ECONOMY	STANDARD				PREMIUM		
Type		1000	2000	2100	3000	3100	4000	5000	Preferred application
Solvent	Isopropyl acetate	1001/10	2001/10	2101/10	3001/10				coatings
	Ethyl acetate	1004/10	2004/10*	2104/10	3004/10	3104/10	4004/10	5004/10	gravure printing inks
	Methoxypropyl acetate	1008/10	2008/10*	2108/10	3008/10	3108/10	4008/10	5008/10	coatings
	Methoxypropanol	1010/10	2010/10	2110/10	3010/10		4010/10		flexo / screen printing inks
leafing	Methoxypropyl acetate / white spirit					3187/30*			coatings (aerosols)
Water	Water	1050/10**							waterborne coatings / inks
	Butyl glycol	1053/10**							coatings
	Propylen glycol	1055/10**							coatings
	Tripropylenglycolmethylether		VP/11555**						waterborne coatings / inks
• D50 value (µm)		12-15	12-15	10-11	11-14	10-11	11-14	11-14	
• Solid content		10%	10%	10%	10%	10% (30%)*	10%	10%	
• Printability		○	+	++	++	++	++	+++	
• Smooth surface effect		○	+	++	+	++	++	+++	
• Hiding power		○	+	+	++	++	+++	+++	
Metallic appearance		<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">1000</div> <div style="flex-grow: 1; border: 1px solid gray; background: linear-gradient(to right, #ccc, #888); position: relative;"> <div style="position: absolute; top: -10px; left: 50%; transform: translate(-50%, -50%);">white, bright</div> <div style="position: absolute; bottom: -10px; right: 0;">dark, chrome-like</div> </div> <div style="margin-left: 20px;">5000</div> </div>							

○ Suitable + Good ++ Excellent +++ Superb * upon request ** stabilized *** not stabilized