



Bermocoll[®] for multicolor paint applications



Nouryon

Bermocoll® makes a difference

The non-ionic cellulose ethers of the Bermocoll range have served the paint market around the world for more than 50 years. Bermocoll is used as a rheology modifier and stabilizer for water-based decorative paints, and is also a versatile additive for water-in-water multicolor paints system.

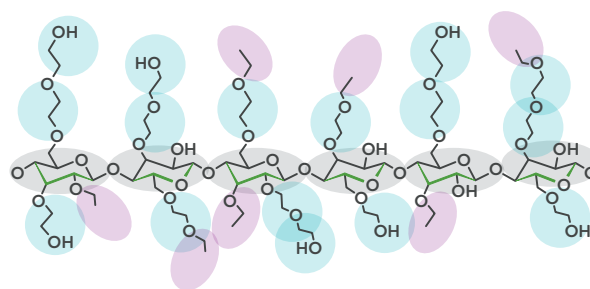
Truly versatile

Bermocoll is manufactured by a unique, solvent-free process, offering industries the lowest carbon footprint. Natural cellulose is made water-soluble by an etherification reaction with a combination of different substituents such as ethyl, hydroxyethyl, methyl and hydrophobic groups, giving an EHEC, MEHEC or HM-EHEC chemistry. By this method, tailor-made products with a wide range of viscosities and modifications can be obtained.

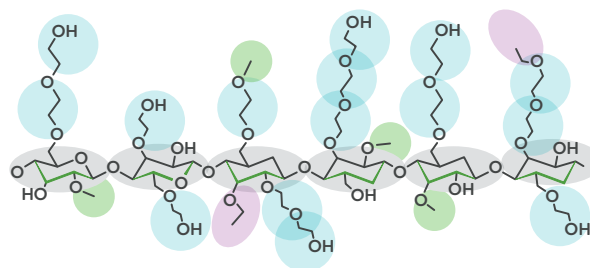
Thanks to the versatile chemistry of the Bermocoll molecules, one product alone or a combination of only two products can provide the desired properties for the majority of multicolored paint systems both with and without sand.

- EO (hydrophilic)
- Ethyl (hydrophobic)
- Metyl (hydrophobic)
- Long Hydrophobe

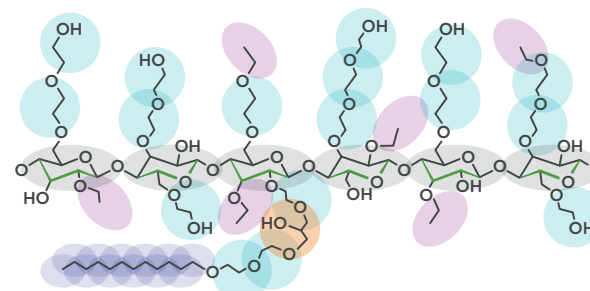
EHEC



MEHEC



HM-EHEC



Bermocoll® performance advantages

Bermocoll in multicolor paint – benefits

- Outstanding versatility
- Optimized gel strength
- Inhibits color migration
- Prevents droplet agglomeration
- Enhanced color development
- Excellent anti-water whitening properties
- Superior storage and transport stability



The concept of water-based multicolor paints

Imitation of nature

Water-in-water Multicolor paint (MCP) is a two-phase system of multi-colored droplets dispersed in a continuous latex phase. When sprayed onto a surface, the MCP can imitate natural stone materials such as granite or marble. The texture of the surface can be modified by including sand into the MCP, or by modifying the hardness of the color droplets. Compared with real stone paint, MCP greatly reduces the environmental impact from the color sand source. Multi-colored paints have high weather resistance and are economical thanks to their low weight.

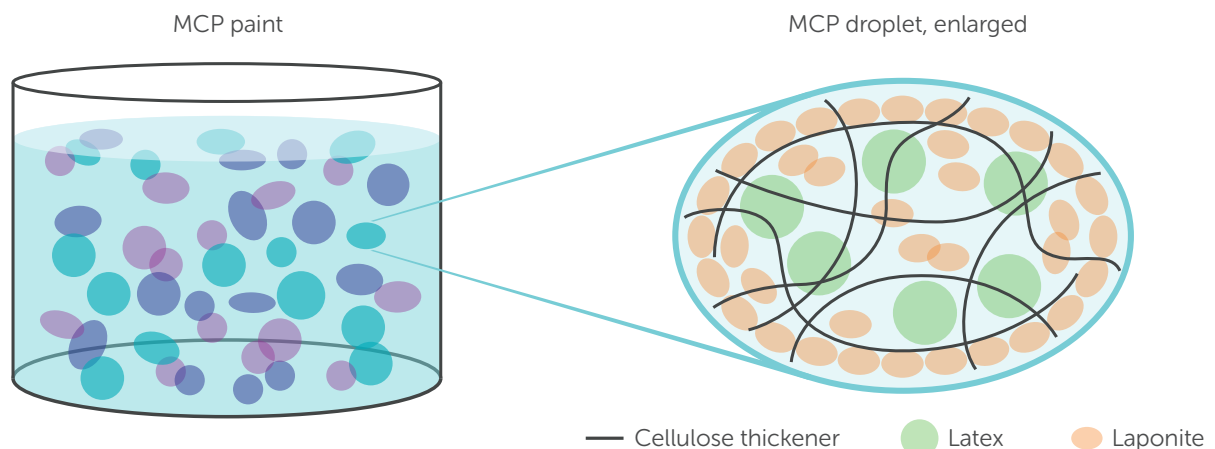
The multicolor paint droplets are stabilized by laponite platelets interacting with the Bermocoll cellulose thickener to form a network within the droplet. When laponite on the outside adheres to the droplet surface, a pickering-type of emulsion is formed with stable droplets.



Textured stone surface and corresponding MCP



Flat stone surface and corresponding MCP

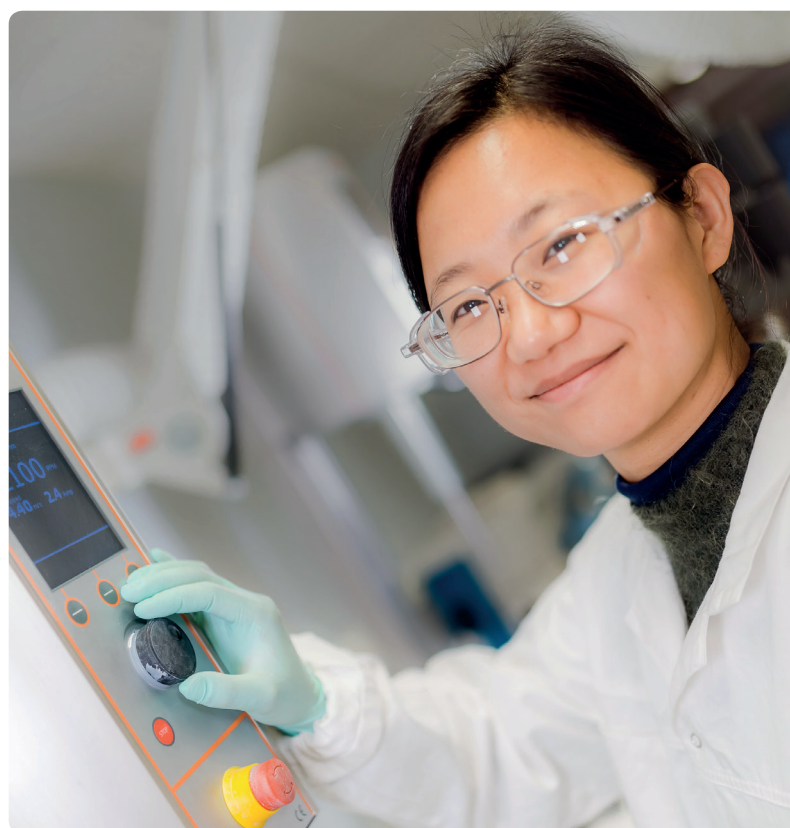


Bermocoll® in multicolor paints

No additional thickener required

The versatile chemistry of the Bermocoll thickeners provides increased interaction within the MCP system, allowing for the latex, the thickener and the laponite to combine in order to produce the desired gel strength. Thanks to the multifunctional chemistry of the Bermocoll, a limited number of products alone or in combination is able to give the desired properties to a variety of MCP systems.

Bermocoll EBM 3000 and Bermocoll EHM 500, in combination or as stand-alone alternatives, will suit a variety of multicolor paint applications, complemented by Bermocoll EBM 8000 as a cost-efficient alternative and EBS 481 FQ as a standard grade. With Bermocoll as the cellulose ether thickener, there is no need for additional thickener in the MCP base paint.



Recommended Bermocoll portfolio for multicolor paint

Bermocoll	Chemistry	Viscosity (mPa·s)*	Key application properties
Bermocoll EBM 3000	MEHEC	2000 – 3000	High performance grade, versatile
Bermocoll EHM 500	HM-EHEC	7000 – 10000	Gel strength adjustor
Bermocoll EBM 8000	MEHEC	7000 – 9000	Lower dosage, efficient thickening properties
Bermocoll EBS 481 FQ	EHEC	4000 – 6000	Standard grade

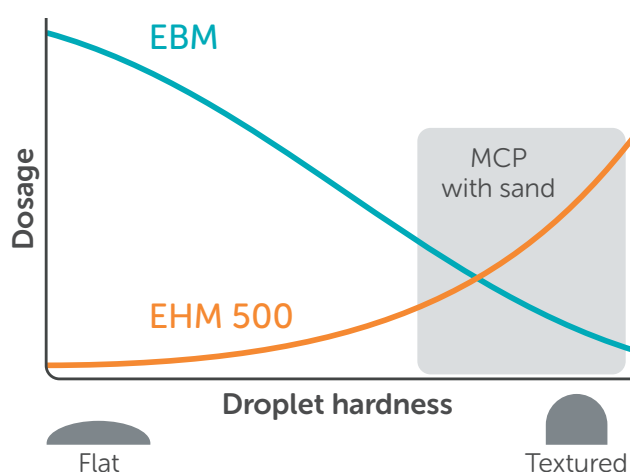
1% aqueous solution at 20°C (68F) with Brookfield viscosimeter type LV at speed of 12 rpm.



Bermocoll® dosage in MCP

Endless combinations

Bermocoll EBM 3000 and Bermocoll EHM 500 can be combined in any proportions depending on the particular formulation. For most MCP:s not containing sand, Bermocoll EBM 3000 can be used alone, however, some systems benefit from a small addition of Bermocoll EHM 500. For high-textured droplets and sand-containing MCP:s a higher dose of Bermocoll EHM 500 is recommended for increased gel strength.



Bermocoll EBM 8000 is a cost-efficient alternative to Bermocoll EBM 3000 that can be used for both flat and textured droplets, as well as in MCP with or without sand, alone or in combination with Bermocoll EHM 500. EBS 481 FQ is a standard grade also suitable for MCP.

Bermocoll	Dosage in base paint
Bermocoll EBM 3000	up to ≈ 1.5%
Bermocoll EHM 500	up to ≈ 1.2%
Bermocoll EBM 8000	up to ≈ 1.0%
Bermocoll EBS 481 FQ	up to ≈ 1.5%

Typical physico-chemical properties of Bermocoll

- Apperance offwhite powder
- Particle size 98% <500 µm
- Water content max 4%
- Salt content max 6%



Nouryon
444 85 Stenungsund
Sweden

bermocoll.com

Bermocoll® is a registered trademark in many countries.

Nouryon

We are a global specialty chemicals leader. Industries worldwide rely on our essential chemistry in the manufacture of everyday products such as paper, plastics, building materials, food, pharmaceuticals, and personal care items. Building on our nearly 400-year history, the dedication of our 10,000 employees, and our shared commitment to business growth, strong financial performance, safety, sustainability, and innovation, we have established a world-class business and built strong partnerships with our customers. We operate in over 80 countries around the world and our portfolio of industry-leading brands includes Eka, Dissolvine, Trigonox, and Berol.

nouryon.com