OSAKRYL® OSA-319M

Water dispersion of
styrene-acrylic copolymer

Technical Data Sheet
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Approved by: Product Manager – Dominika Słotwińska

Previous editions of this document have lost their validity

CHARACTERISTICS

Osakryl® OSA-319M is a water dispersion of styrene-acrylic copolymer produced in the presence of emulsifying system composed of ionic and non-ionic surface active agents. Product is designed for the formulation of decorative - protective paints for interior and exterior use and also water-soluble lacquers.

GENERAL PROPERTIES

- APEO free
- free of solvents

In coatings exhibit very good adhesion to various porous materials, especially cement, cement-limestone, etc. porous substrates; very good wet scrubbing resistance; low water uptake and good alkali resistance.

BASIC PARAMETERS

Parameters	Units	Values	Test methods
pH	-	7,0÷9,0	PN-EN 1245
solids content	%	49±1	PN-EN 827
viscosity by Brookfield RVT[1)]	mPa·s	3000÷9000	PN-ISO 2555
MFFT (minimal film forming temperature)	°C	28÷32	PN-90/C-89415
Tg (glass transition)	°C	31÷35	differential scanning calorimetry (DSC)
mean particie size	nm	120÷160	photon correlation spectroscopy (PCS)

[1)] rotors per minute: 20; rotor nr 4; temperature: 23ºC; after 5 minutes

APPLICATON

After evaporation of water in the temperature above 30°C Osakryl® OSA-319M forms a transparent film. Product is well dilutable with water and well miscible with inorganic fillers and pigments. In our experience Osakryl® OSA-319M can be used with all available raw materials designed for water-based products formulation. However we present below some information that may be helpful during formulating ready products.

Dispersing agents

According to our test results the best stability and good mechanical parameters show products based on Osakryl® OSA-319M with 0,1-0,2% by weight of Polifos as a wetting agent and 0,3-0,5% by weight of following dispersing agents: Hydropalat 1080, Metolat 514, Hydropalat 5040, Dispersene-P/80.

Defoamers

The best defoaming effect in high-filled systems based on Osakryl® OSA-319M can be achieved with 0,2% by weight of BYK 037 or Foamaster 50. In primers and low-filled systems addition of 0,2% by weight of Dehydran SE 1 is recommended. For surface defects prevention such as catering problem 0,05-0,1% by weight of Dehydran 1293 can be used.

Rheology modifiers and thickeners

Synthos Dwory 7 spółka z ograniczoną odpowiedzialnością S.K.A.
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Osakryl® OSA-319M can be used with all available cellulosic thickeners designed for water-based products formulation. The best results can be obtained in formulations based on Osakryl® OSA-319M and Bermocoll, Tylose or Natrosol. The addition of xanthan gum e.g. Agocel V 500D and guar gum e.g. Agocel I 110D or Agocel I 115D is also recommended. Very good results can be achieved with Tafigel AP acrylic thickener and DSX 1516 or DSX 3290 polyurethane thickeners.

Coalescing agents

Due to the fact that Osakryl® OSA-319M forms film in the temperature above 30°C it is necessary to add coalescing agents particularly for exterior appliactions. Texanol is sufficient to achieve optimal film properties and has very good compatibility with Osakryl® OSA-319M. 5% by weight of this coalescent counted on the dispersion amount is sufficient to lower the MFFT to about 5°C; 7% by weight lowers the MFFT below 0°C. We also recommend using Butyl Carbitol Acetate or Butyl Cellosolve Acetate.

Fillers

Osakryl® OSA-319M is well miscible with all mineral fillers. Very good whiteness and hiding power parameters can be obtained using Omyacarb 5VA and Omyacarb 2VA. For increasing whiteness and hiding power addition of precipitated aluminium and sodium silicate Sodasil P95 is recommended. Cristobalite Sikron SF 6000 or Sibelite M 3000 provide the best performance in silicone and silicate product. Hiding power improvement can be achieved with the addition of Chinafill 830 or Dorkafil H. Mika SG or wollastonite Tremin 939-300 AST are recommended for products with increased wet scrubbing resistance.

Biocides

Osakryl® OSA-319M is protected against microbiological contamination. For final products based on Osakryl® OSA-319M protection “in can” we recommend addition of Preventol D8, Mirecide-M/90 or Acticide MBS. Sufficient dry film protection can be achieved with Preventol A14D, Mirecide-TF/458 or Mirecide-TF/495 ECO.

Other additives

For open-time prolongation in products based on Osakryl® OSA-319M we recommend addition of Ombrelub 730 or Loxanol DPN. In silicone based systems the best properties can be obtained with Osakryl® OSA-319M and Corning IE 2404 or Agochem SR 550. For hydrophobization of products based on Osakryl® OSA-319M we recommend addition of Dow Corning IE 6683, Agochem HP 120, Agochem HP 105 or Aqaucer 539.

PACKAGE AND TRANSPORTATION

Acid resistant and heat insulated road tankers, IBC plastic containers or plastic drums with polyethylene bags inside. Package and transportation are not subject to regulations for hazardous materials transportation (ADR, RID). The other packages can also be used if previously agreed between the producer and a customer. Package must not deteriorate the product.

STORAGE

Store at temperature range from 5 to 35°C. Drums should be stored in one layer. If stored in these conditions the product does not change its properties in the period of six (6) months from the date of production.

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