



Merginamid A 155/2

PRODUCT INFORMATION

Product Description

Merginamid A 155/2 is a solvent-free modified polyaminoamide-adduct that is able to emulsify unmodified and modified liquid epoxy resins as well as dispersions of solid epoxy resins in water. After evaporation of the water homogenous films with unobjectionable coating properties are obtained.

Typical Parameters

Viscosity at 25°C [mPa*s]	13 000 - 23 000	Flash point [°C]	Min. 112	
Amine value [mg KOH/g]	155 - 175	H-active-equivalent [g/Eg]	Ca. 210	
Colour [Gardner]	Max. 12	Use level [g/100g]	110 ¹⁾	23 ²⁾
Solids content [%]	49 - 51	Gel time 250g at 23°C	Ca. 2.5 h ¹⁾	Min. 6 h ²⁾
Density at 20°C [g/cm ³]	1	Solvent	Water	
		Biobased carbon content ³⁾ [%]	34	

¹⁾ Liquid epoxy resins, epoxy equivalent weight approx. 190 g/Eq

²⁾ Dispersion of a solid epoxy resin (56 %), epoxy equivalent weight approx. 890 g/Eq

³⁾ Measure of the amount of biomass-derived carbon in a product compared to its total carbon content

Application and Properties

By using Merginamid A 155/2 stable emulsions in water can be prepared, both with unmodified and modified liquid epoxy resins and with aqueous dispersions of solid epoxy resins. These emulsions are an excellent basis for unobjectionable clear varnishes and pigmented lacquers, with high grade all-round properties. The formulated lacquer systems are able to harden at temperatures above 10 °C and at normal air humidity giving tackfree films. Their mechanical and chemical characteristics are comparable with lacquer films based on conventional solvent containing adduct hardeners. Epoxy resin emulsions based on Merginamid A 155/2 can be diluted with water down to solid contents of about ten percent (e. g. for impregnations) and are therefore very economical. Merginamid A 155/2 is also especially recommended as hardener for flexible coatings.

For aqueous epoxy lacquers, the resin, as well as the hardener component can be pigmented resp. filled. As Merginamid A 155/2 very good wetting properties against pigments and fillers it is advisable to pigment resp. blend the hardener component. If necessary the hardener can be prediluted with water to reach the required viscosity. By using different formulations gloss and hardness of films can be influenced according to individual requirements.

In combination with aqueous dispersions of **solid epoxy resins** Merginamid A 155/2 offers the following advantages:

- outstanding pigment wetting
- very long potlife (up to eight hours)
- high dilutability with water
- very good flow properties
- fast drying-/hardening
- tackfree lacquer films comparable to solvent containing systems
- excellent adhesion on most surfaces (even on wet ones) and even better than solvent-based systems
- good protection against corrosion and good chemical resistance



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- higher gloss in comparison with other available epoxy hardeners.

One disadvantage with aqueous dispersions of solid epoxy resins is that the end of the potlife is not perceptible contrary to those systems which are formulated with liquid epoxy resins. However this fact has no practical consequence in consideration of potlives of about five to eight hours, depending on the used resin.

With the formulation of coating systems using **liquid epoxy resins** there are manifold possibilities to influence their application and final properties.

Coating systems based on Merginamid A 155/2 and unmodified resp. modified liquid epoxy resins show a potlife of two until three hours depending on the used resin type (Bisphenol A and Bisphenol A/F resin). The end of the potlife is detectable by a significant increase of the viscosity.

By choosing appropriate special epoxy resins the potlife can be extended up to five hours. An admixture of minor quantities (up to five per cent) of organic solvents to the aqueous epoxy system also results in a prolongation of the potlife and reduces the thixotropic characteristics. The addition of reactive diluents (e. g. Merginat EP 311) decreases the application viscosity and extends the potlife and the hardening time.

Remarkable features of coatings based on Merginamid A 155/2 and liquid epoxy resins are:

- exceptional adhesion on all kinds of metals and mineral surfaces
- excellent and tackfree hardening even on wet surfaces
- high water resistance
- good chemical resistance, especially against alkali
- good gloss retention until the end of the potlife
- low odour
- not inflammable and harmless for the environment due to the absence of solvents.

Aqueous epoxy resins, cured at room temperature, can be applied as ecologically beneficial coatings in surface protection. The excellent properties of formulated epoxy systems based on Merginamid A 155/2 become especially effective when impregnated or coated on mineral surfaces. Even on wet surfaces the hardened films come up with excellent adhesion and good mechanical and chemical resistance. In this manner plaster, concrete, masonry, cement, fibre boards, chip boards etc. can be sealed resp. protected with minor consumption of coating material. Examples for applications of the above described water-based systems are coatings on walls, ceilings and floors of garages, exhibition halls, hospitals, canteens, dairies, breweries, public baths, laboratories, tunnels, nuclear power stations (decontaminatable coatings) and industrial production units.

The application of Merginamid A 155/2 in water-based primers results in an excellent adhesion promotion for topcoats based on acrylates and polyurethanes.

By means of appropriate dispersions of solid epoxy resins the formulation of water-based epoxy coatings with satisfactory anti-corrosion properties on metallic surfaces is nowadays possible. An additional but decisive influence for good corrosion protection can be obtained with pigments and fillers with a plated structure like talcum. Instead of the formerly used chromate pigments today special types of zincphosphates and red iron oxide in combination with corrosion protection inhibitors are implemented advantageously with nearly the same result regarding corrosion protection. The dry-film thickness of the corrosion protection coating should be at least 50 µm.

Corrosion protection systems based on dispersions of solid epoxy resins find preferential use on metallic surfaces in industrial areas. They can be formulated as primers and top coats. When using active corrosion protection pigments these water-based coatings attain the same good properties as solvent-based epoxy coatings.



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Basic formulations using Merginamid A 155/2 in combination with liquid epoxy resins and also with dispersions of solid epoxy resins have been developed in our company for application purposes in the field of buildings and corrosion protection. These basic formulations are available on request.

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