

Rheology Modifier

Rhesperse RM100

INCI Name: Sodium Polyacrylate

CAS No.: 9003-04-7 EINECS No.: Exempt Polymer

Rhesperse RM100, a rheology modifier, is supplied as a dustless powder for ease of handling. It thickens rapidly when added to water and will impart yield strength and viscosity to your formulation.

Rhesperse RM100 is also used as an emulsifying agent, stabilising oil in water emulsions regardless of the oil phase and HLB value.

Rhesperse RM100 can be added to your formulation at any stage of manufacture. We recommend that it is added between pH 6-11 for optimum efficiency and usage levels are generally between 0.1 - 0.5% in the first instance.

Temperature and time has very little effect on thickening.

Rhesperse RM100 is stable between temperatures from 10°C and 60°C.

Applications

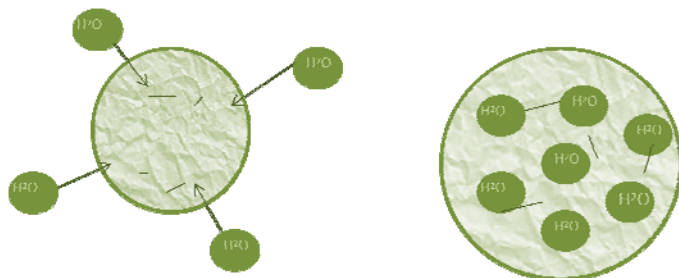
- Hair creams
- Sunscreens
- Moisturisers
- Lotions and creams

Performance Properties

- Viscosity achieved instantly
- Thickening, emulsifying and suspending behavior
- Pseudoplastic and non thixotropic for good skin feel
- Excellent skin feel with no tack
- Cold processing with minimum mixing required
- No neutralisation required
- Thickening in the presence of polar solvents
- Low addition rates 0.1 – 0.75% typically
- Crystalline form for ease of handling and processing
- Dust free
- Stable at pH 6-11

Thickening mechanism

Water molecules enter into the polymer matrix, with subsequent swelling.



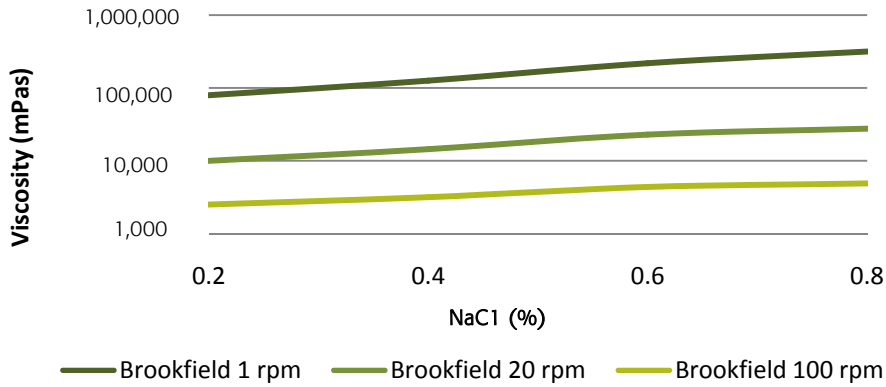
TYPICAL PROPERTIES

Not intended for use in preparing specifications

Appearance @ melt at 25°C	Water swellable fine powder
Active content, %	85 - 100
White paste viscosity, cPs	25,000 – 35,000
White paste pH	6.0 – 7.0
Residual Acrylic Acid, ppm	0 - 999

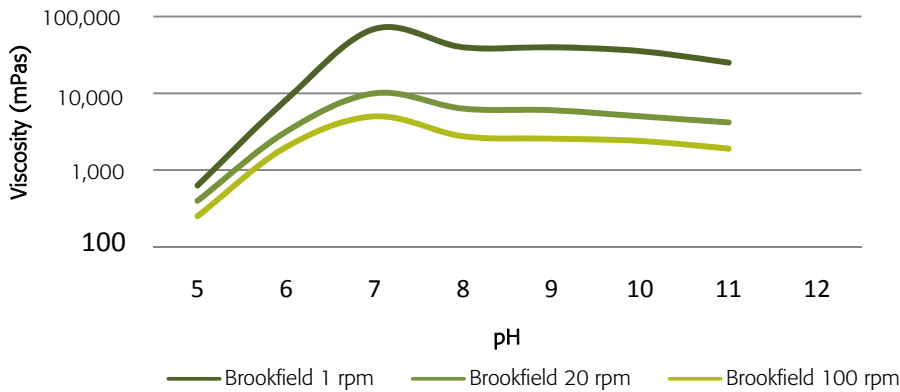
Effect of concentration on viscosity

Rhesperse RM100 starts to build viscosity at around 0.1% concentration. Viscosity is built by the swelling of the dispersed polymer. Even at 0.1% solids Rhesperse RM100 allows you to thicken, suspend actives and provide your customers with elegant skin feel.



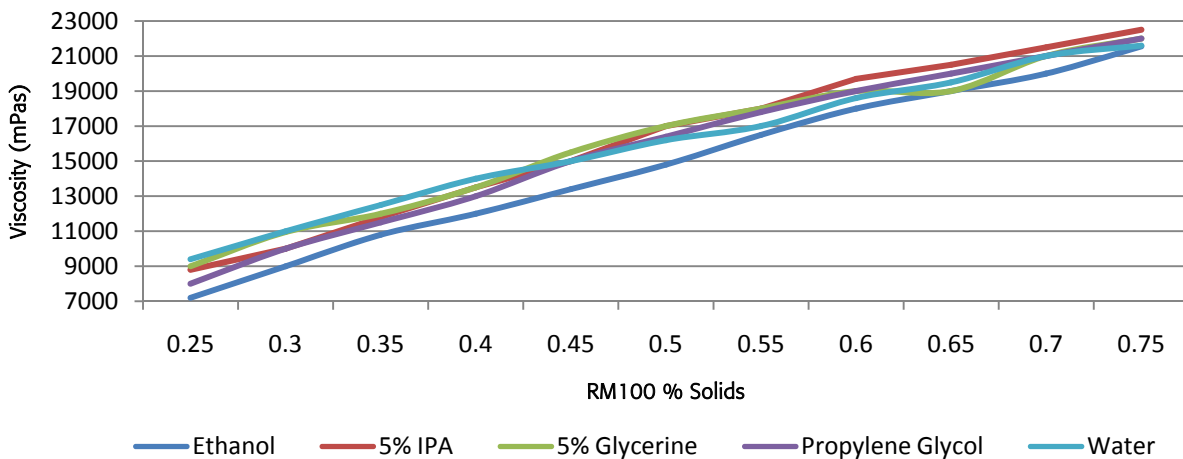
Effect of pH on viscosity

Rhesperse RM100 will start to thicken at around pH 6 and is then stable up to pH 11. This makes it ideal for the majority of personal care applications. Rhesperse RM100 requires no neutralisation before use simplifying the formulation of products.



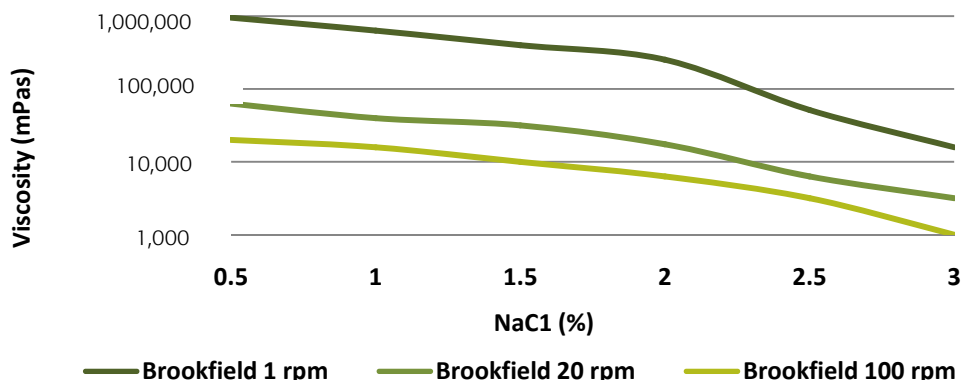
Effect of polar solvents on viscosity

In laboratory tests, Rhesperse RM100 was unaffected by the presence of polar materials within formulations. This means, for example, those formulations containing high levels of alcohol such as skin toners and cleansers can be formulated without rheology problems.



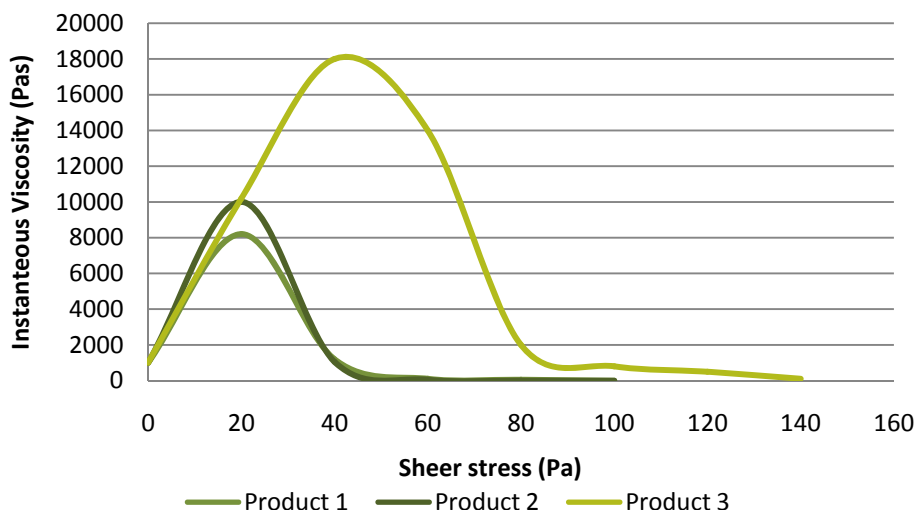
Thickening in the presence of sodium chloride

Rhesperse RM100 (3% solids) can thicken in the presence of 0.5% electrolyte making it ideal in cosmetic creams and lotions. In the presence of high levels of salt the viscosity will drop as the sodium ions are absorbed in preference to the water. This shrinkage is reversible when more water is added. Alternatively you can increase the concentration of Rhesperse RM100 until you reach your required viscosity.



Yield stress measurement

Rhesperse RM100 has a similar yield value to competitor products but at a lower viscosity. This enables formulation of suspended materials in a lower viscosity product. Whilst in manufacturing the lower viscosity makes the product easier to process.



Packaging

Available in 25kg bags.

For further information, please email your region:

Americas: americas-ac@innospecinc.com

Europe, Middle East and Africa: emea-ac@innospecinc.com

Asia-Pacific: aspac-ac@innospecinc.com www.innospecinc.com

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