

# LIQUID AND SEMI-SOLID APPLICATIONS

Dosage forms

Liquid and semi-solid drug formulations are particularly important for under-served pediatric and geriatric patients. The formulation experts at IFF can help design a liquid or semi-solid application utilizing a broad portfolio of specialized excipient solutions.



## Enabling Technologies

**Avicel® RC-591** and **Avicel® CL-611** are effective suspending agents for pharmaceutical dosage forms, offering superior suspending capability with long shelf-life stability.

**ETHOCEL™** ethylcellulose is a hydrophobic polymer that can be used as a barrier coating for moisture protection, taste-masking or sustained released on suspended particles.

**Aquacoat® ECD** is an aqueous dispersion of ethylcellulose.

**Gelcarin®** and **Viscarin®** are carrageenans from natural sources which offer specific gelling, thickening, stabilizing properties and superior mouth feel.

**Protanal®** and **Manucol®** sodium alginates have a unique combination of properties, providing thickening, gelling, stabilizing functionalities to liquid and semi-solid dosage forms.

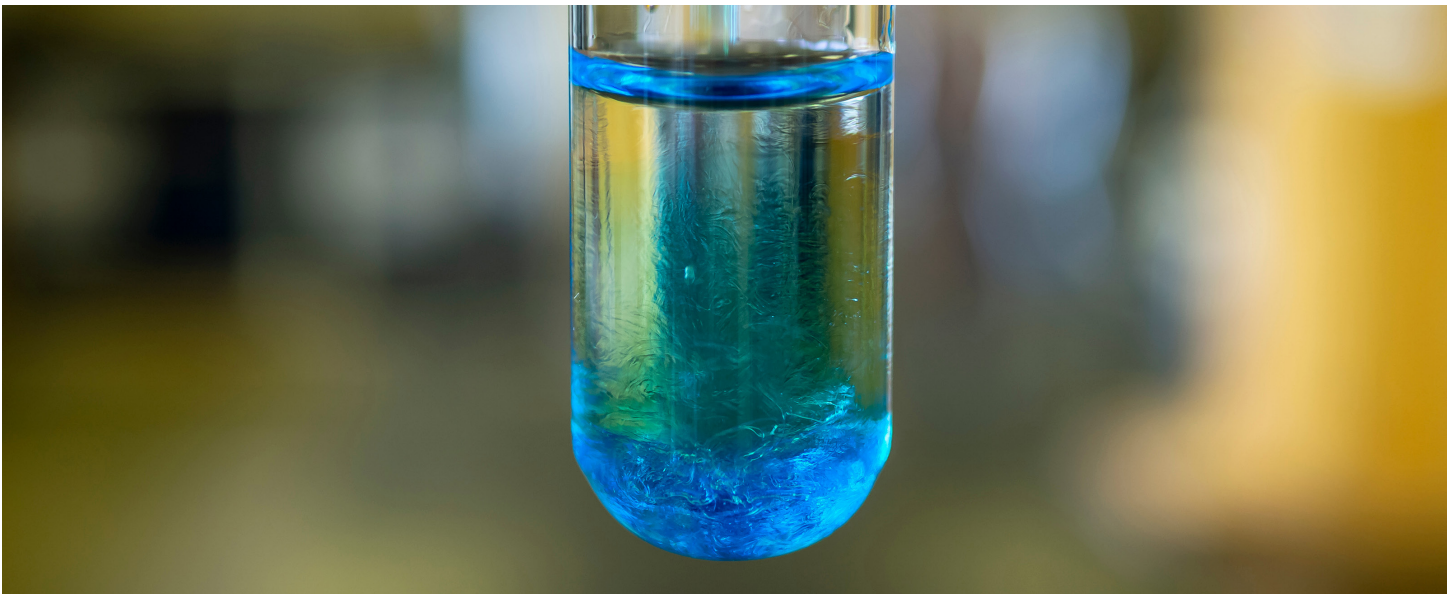
**METHOCEL™** water-soluble cellulose ethers are used in liquid formulations because they are excellent thickeners, improve emulsion stability, suspend solids, lubricate and retain moisture. The protective colloid action and emulsifying properties of METHOCEL™ also benefit many liquid formulations.

**TEXTURECEL™** polymers can control the rheological (flow) properties in a variety of liquid dosage forms. Whenever viscosity control, suspension stabilization, water absorption or water retention is required, TEXTURECEL™ is an excellent choice.

## Product Recommendations\*

Benefits	Recommended Products
Rheology, Suspending, Emulsification	METHOCEL™ A4M PRM, K4M PRM, E4M PRM to modify the rheology and to stabilize emulsions by reducing surface tension and by thickening the aqueous phase  TEXTURECEL™ 30 PA / GA, C 700 PA / GA, 2400 PA / GA or 2400 GA07 to modify the rheology of aqueous phases  Avicel® RC-591 and Avicel® CL-611 are thixotropic and excellent structured vehicle former Alginates: Protanal® CR8133, Protana® CR8233, Manuacol® LKX Carragenan: Gelcarin® and Viscarin®
Ointment Base	METHOCEL™ A4M PRM, K4M PRM, E4M PRM to contribute film-forming and secondary-thickening properties, improving sensory characteristics
Modified Release	AMBERLITE™ IRP69, DUOLITE™ AP143 to control the API release Aquacoat® ECD-30 as an aqueous based, modified-release coating agent for suspended multiparticulates ETHOCEL™ Std 4, 7 and 10 as modified release coating polymers for taste masking and sustained release in suspended multiparticulates

\* Examples only and not representative of a complete list of recommended products or benefits



[pharma.iff.com](http://pharma.iff.com)

The information provided herein is based on data IFF believes, to the best of its knowledge, reliable and applies only to the specific material designated herein as sold by IFF. The information contained herein does not apply to use of the material designated herein in any process or in combination with any other material and is provided at the request of and without charge to our customers. Accordingly, IFF cannot guarantee or warrant such information and assumes no liability for its use. Other than as may be expressly set forth in a contract of sale, IFF makes no warranty, express or implied, as to the material set forth herein, including the warranty of merchantability or fitness for a particular use. ©2023 International Flavors & Fragrances Inc. (IFF). IFF, the IFF Logo, and all trademarks and service marks denoted with ™, SM or ® are owned by IFF or affiliates of IFF unless otherwise noted. All rights reserved.



Where science  
& creativity meet