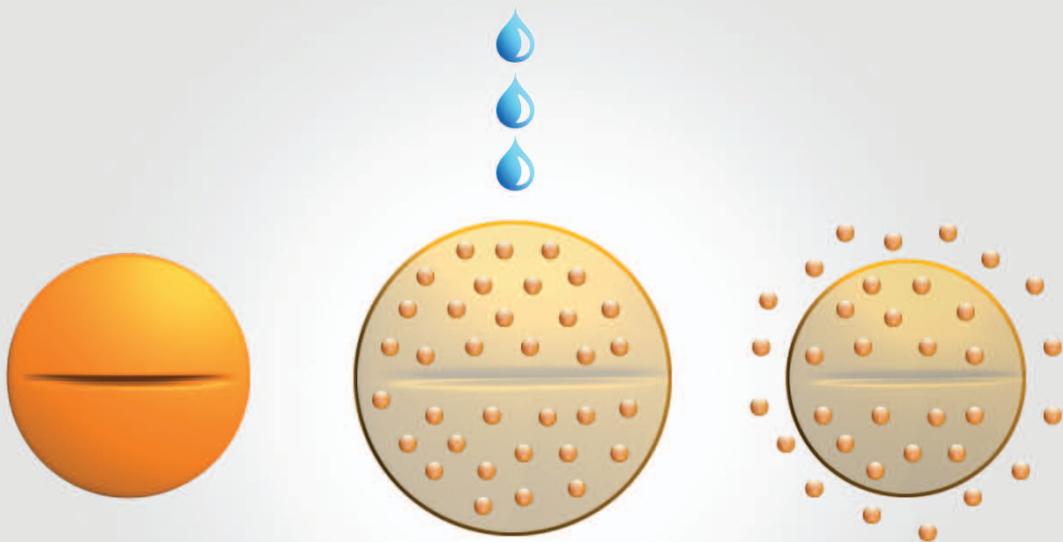




Pharma & Food Solutions

METHOCEL™ Cellulose Ethers

A Product That Can Do It All



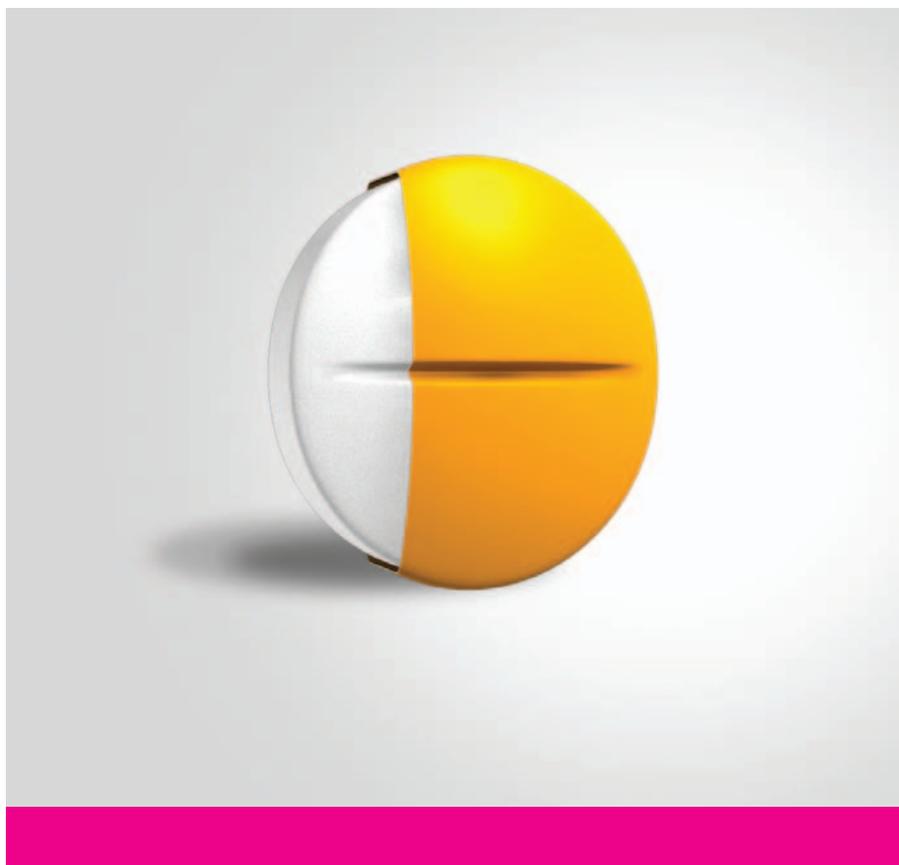
The Possibilities Are Endless

Pharmaceutical companies are continuously looking for ways to innovate – through new technologies such as controlled release systems and oral films, or through faster and more efficient manufacturing processes. Did you know that just one product can help do all of this?

METHOCEL™ Premium family of products offers exceptional flexibility and a broad range of polymers with a valuable combination of properties typically not found in other water-soluble polymers. In many applications, two, three or even more ingredients may be needed to do the same job performed by one METHOCEL™ product. That means one ingredient can do the job of many, saving money and time.

Typical Properties

- Water-soluble
- Film forming
- Viscosifying
- Non-caloric
- Organo-soluble
- Mucoadhesive
- Hydrophilic
- Low taste and odor
- Gel forming
- High swelling
- Drug solubilizer



Efficiency and Versatility

We Can Give You the Best of Both Worlds

METHOCEL™ cellulose ethers offer a perfect combination of versatile properties and flexibility in formulations. The broad range of METHOCEL™ products available is one reason why they've been used successfully for more than 50 years in so many different applications. There are two polymer types – methylcellulose and hydroxypropyl methylcellulose – and each is available in different grades, physical forms, and a wide range of viscosities. With so many options, it is easy to obtain the optimum degree of thickening, binding, moisture retention, and other properties needed in formulations.

Controlled Release

With their varying molecular weights and chemical substitutions, METHOCEL™ excipients bring huge benefits to extended and controlled release applications.

- METHOCEL™ Premium Controlled Release (CR) cellulose ethers are specially designed for pharmaceutical controlled release applications to deliver consistent drug-release performance
- Proprietary techniques mean development of robust formulations quickly and trusted performance

Direct Compression

Whether durability, presentation, faster processing speed or a consistent drug release profile is required, depend on METHOCEL™ DC 2 Premium grade polymers to get there.

- Saves time and money by eliminating the wet granulation process, which can save as much as 60% of manufacturing costs, reduce overall waste, and shorten development time.
- Dramatically improved flow properties
- Excellent processability in dry powder techniques, such as direct compression and roller compaction, thus eliminating the need for wet granulation
- Greater reproducibility in tablet properties, such as weight uniformity, hardness and content uniformity
- Better formulation option for heat- and moisture-sensitive APIs

Wet Granulation

With their extreme versatility, METHOCEL™ products can be used in aqueous, hydroalcoholic or non-aqueous solvent systems.

- Reduces the required compression force, an important factor in reducing wear and extending the life of tooling and compression equipment
- Achieves faster, simpler, more reproducible and less costly processing with foam granulation, compared with conventional spray processing technology

Tablet Coating

METHOCEL™ polymers offer an excellent combination of properties for water-soluble hard shell capsules, delivering exceptional and uniform performance. METHOCEL™ Premium LV products offer formulators a micro-thin glossy coating that is printable, hypo-allergenic, non-tacky, and compatible with pigments and dyes. METHOCEL™ VLV Premium tablet coatings are also designed to be easily swallowed and minimize overall cycle coating time.

Liquid Solutions and Suspensions

The wide variety of viscosity grades of METHOCEL™ Premium helps formulators achieve a broad spectrum of solution viscosities with little risk of drug-polymer interactions expected. METHOCEL™ Premium can be used as a thickening agent to help prevent or minimize suspension settling without altering taste or mouth feel.

METHOCEL™ Products are Available in Three Different Forms:

- Powder
- Surface-treated powder
- Granular

The three different forms influence the techniques used in making solutions. Untreated powders are soluble in cold water, but must be thoroughly dispersed before they begin to dissolve. Surface-treated powders and granular products can be added directly to aqueous systems. The dissolution of these products can be controlled by a shift in pH.

North America	+1 800 447 4369
Europe, Middle East, Africa	+31 11 567 2626
Pacific	+60 3 7965 5392
Latin America	+55 11 5184 8722

www.dowpharmaandfood.com

®™Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow • Form No. 198-02288 - 10/13 EST

Dow requests that customers considering use of Dow products in medical applications notify Dow so that appropriate assessments may be conducted. Dow has a Corporate Medical Application Policy in place that guides the use of Dow products in potential new pharmaceutical and medical device uses. Dow reviews all new applications/uses according to this Medical Application Policy to determine if the use is appropriate for Dow materials. Dow does not endorse or claim suitability of its products for specific medical applications. It is the responsibility of the medical device or pharmaceutical manufacturer to determine that the Dow product is safe, lawful, and technically suitable for the intended use. DOW MAKES NO WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE SUITABILITY OF ANY DOW PRODUCT FOR USE IN MEDICAL APPLICATIONS.

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.