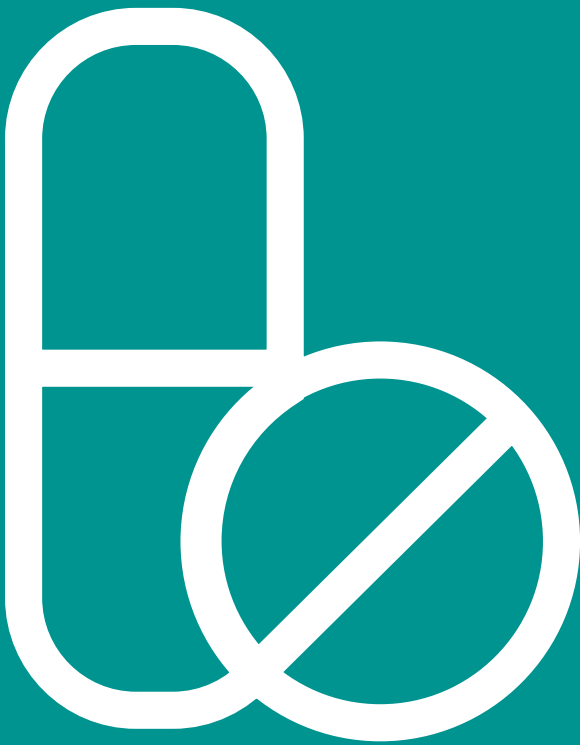


## Pharma Solutions

## DOSAGE FORMS

## Tablets



About two-thirds of all medications are dispensed as oral solid dosage forms (OSDFs), and half of these OSDFs are tablets. While they look simple and elegant, tablets are complex formulations of active pharmaceutical ingredient(s), binders like microcrystalline cellulose, superdisintegrants like croscarmellose, flow aids, coatings and lubricants. Tablets can also be designed with rate-modifying or solubility enhancing polymers, such as hypromellose or polyethylene oxide. Tablets may also be coated with a soluble low-viscosity film-forming polymer, like hypromellose, or a rate-modifying film-forming polymer, such as ethylcellulose.

## Enabling Technologies

**Avicel®** microcrystalline cellulose and co-processed materials are highly functional, reliable, flexible tablet binders offering outstanding properties, such as compression, binding, wetting and flow.

**Ac-Di-Sol®** croscarmellose sodium is a premium superdisintegrant that effectively disintegrates tablets quickly at low use level.

**METHOCEL™** water-soluble cellulose ethers are versatile excipients broadly used in tablet coatings, as binders in wet granulation or as matrix formers in controlled release hydrophilic matrices. Tailored METHOCEL™ grades providing productivity improvements are available, such as METHOCEL™ VLV for binders and coating or METHOCEL™ DC2 for direct compression.

**ETHOCEL™ Premium FP** grades of ethylcellulose resins offer versatility in drug release rates and produce hard tablets with low friability. ETHOCEL™ can also be used as a tablet coating to provide sustained release and mask the taste of drugs.

**POLYOX™** can be used to create alternate drug release profiles as matrix tablets or in the form of osmotic pump tablets. Osmotic pump tablets produce a highly desirable linear drug release profile which is resistant to food effects. Heat curing of POLYOX™ based tablets can produce tablets which are highly resistant to crushing, a feature which can be useful for patient compliance.

**Gelcarin®** and **Viscarin®** provide near instant gelation to form a hydrogel barrier around the tablet and enable a near zero-order release profile.

**Protanal®** and **Manucol®** sodium alginate utilize a pH-controlled release mechanism that is uniquely suited for use as a modified release matrix in drugs with high solubility at low pH.

**AMBERLITE™** and **DUOLITE™** ion exchange resins bind with ionic APIs and can be used in combination with other excipients to enhance API stability or provide targeted drug release profiles.

**Alubra®** sodium stearyl fumarate provides excellent lubrication and reduced blending sensitivity along with improved tablet hardness and disintegration time.

## Product Recommendations\*

Application	Recommended Products
Tablet Binding	Avicel® PH-101, 103, 113, 102, 112, 200, 200LM, 105 Avicel® SMCC, DG, HFE, CE-15
Controlled Release Hydrophobic Matrices	METHOCEL™ K100LV, K4M, K15M, K100M, K200M, E4M, E10M (PRM or PRM CR) METHOCEL™ K100 LV PRM DC2, K4M PRM DC2, K100M DC2 POLYOX™ WSR-205, 1105, N12K, N60K, 301, 303, Coagulant Protanal® CR8133, CR8223 Manucol® LKX
Osmotic Pump Tablets	POLYOX™ N10, N80, WSR Coagulant, WSR-301, WSR-303
Immediate Release Coating	METHOCEL™ E5 PRM LV, METHOCEL™ E6 PRM LV, and METHOCEL™ E6 PRM LV, METHOCEL™ VLV
Controlled Release Coating	ETHOCEL™ STD 4, 7, 10, 20, 45 or 100 PRM (Solvent Film Coating) ETHOCEL™ HP (Dry Powder Coating) Aquacoat® ECD30
Taste-Masking	AMBERLITE™ IRP64, IRP69, DUOLITE™ AP143 ETHOCEL™ STD 4, 7, 10 or 20 PRM Aquacoat® ECD (Aqueous Coating)
Immediate Release Disintegration	Ac-Di-Sol® SD-711, Ac-Di-Sol® SDW-802
Lubrication	Alubra® PG-100, PG-30
Oral Dispersible Tablets	Ac-Di-Sol® SD-711, Ac-Di-Sol® SDW-802
Chewable Tablets	Avicel® CE-15

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



## Nutrition & Biosciences

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