EASTMAN™ CAP

Cellulose Acetate Phthalate, Enteric Coating Material

Eastman™ CAP (also known as Cellacefate) enteric coating material is a pH-sensitive cellulose derivative designed for coating pharmaceutical tablets or granules. It may also be used as a matrix material in solid dose forms. Eastman™ CAP enteric coating material withstands prolonged contact with acidic gastric fluids, but dissolves readily in the mildly acidic to neutral environment of the small intestine. It can be applied to tablets or granules from solutions of organic solvents. It is the subject of U.S. Drug Master File 8.

Eastman™ CAP meets USP and NF specifications and is available in powder and pellet form.

Eastman™ CAP contains around 33% of acetyl- and around 24% of phthalyl-groups, calculated on the anhydrous acid-free basis, and exhibits a pK_a of approx. 4.5. Both the pK_a value and the acetyl and phthalyl content influence the pH-dependent dissolution behaviour of the polymer. Eastman™ CAP coated tablets and capsules withstand 2 hours in the strongly acidic gastric environment, but dissolve completely within minutes at pH 6.5. The required coating thickness varies with the shape of the coated tablets or capsules, but around 3 mg/cm² tablet surface are in most cases a suitable range to assure sufficient acid-resistance and a fast dissolution in the intestine.

Beside the more common application as coating polymer, Eastman™ CAP can also be used in combination with other polymers as matrix former for sustained release tablets or to form gastric resistant solid dispersions.

Eastman™ CAP is best soluble in organic solvents like acetone or ethyl acetate. Suitable solvent systems are e.g. acetone:water (97:3), ethyl acetate:ethanol (50:50) or ethyl acetate:isopropanol (50:50). Due to the water-free coating solution, Eastman™ CAP is especially suitable as coating polymer for moisture-sensible API's.
The properties of coatings made with Eastman™ CAP enteric polymer may be modified by adding a plasticizer to the polymer solution before coating. Plasticizers add film toughness (increased resistance to chipping or cracking) while lowering the T_g (glass transition temperature or softening point) of the polymeric film. In general, the optimum concentration of plasticizer is the minimum amount which provides the necessary flexibility to form a continuous coating. Suitable plasticizers are diethyl phthalate, dibutyl phthalate or triacetin in a polymer to plasticizer ratio of around 1 to 0.25 (w/w).

Eastman™ CAP is widely used for decades as enteric coating material and is generally regarded as well tolerated non-toxic material.

CAS-No.:	9004-38-0
Mol. Weight:	approx. 28,700 g/mol (M_w)
Packing:	50 kg fiber drum with inner PE-lining
Shelf life:	36 months (Pellets), 24 months (Powder)
Storage:	At ambient temperature, protected from moisture.

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