

Eastman pharmaceutical excipients

Cellulose esters for sustained release

CA-398-10 NF/EP

CA-320S NF/EP

CAB-171-15 NF

Key attributes

- For use in coatings: semipermeable, excellent film former, strong, flexible
- Characteristics of coating can be modified (permeability, mechanical strength, flexibility) through blending two CAs or CA with CAB.
- For use in tableting: directly compressible, matrix for sustained release
- CAB is more hydrophobic than CA.

Examples of typical applications

- Semipermeable membrane for osmotic drug delivery systems
- Coating for extended-release tablets
- Coating for taste masking
- Binder to make tablets for sustained release via direct compression

Formulation tips

- Requires a solvent for coatings formulations
- Modify a wide range of film properties through additives
- Adjust sustained release by blending CA with CAB

Enteric coating polymer

C-A-P NF

Key attributes

- pH-sensitive as it hydrolyzes at pH 6 or higher
- Solvent based
- Stable if stored in a sealed container in a cool, dry place
- Two physical forms: powder and pellet
- Compressible
- Multiple plasticizers are appropriate for use with C-A-P.
- Advantage over water-based coatings materials: coats very small tablets or water-sensitive actives

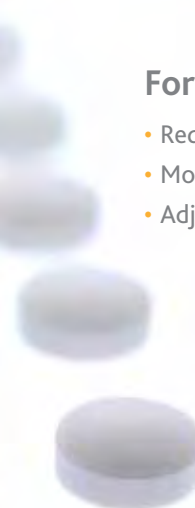
Examples of typical applications

- Enteric coating for tablets, softgels, and granules
- Binder to make tablets for delayed release via direct compression

Formulation tips

- Best if used in solvent systems
- Adding a plasticizer increases film flexibility.
- Can be used in aqueous systems through ammonia neutralization
- Can be used at levels as low as 0.5%

For more information, visit www.eastman.com/pharma.





Eastman Corporate Headquarters
P.O. Box 431
Kingsport, TN 37662-5280 U.S.A.

U.S.A. and Canada, 800-EASTMAN (800-327-8626)
Other Locations, +(1) 423-229-2000

www.eastman.com/locations

Although the information and recommendations set forth herein are presented in good faith, Eastman and its subsidiaries make no representations or warranties as to the completeness or accuracy thereof. You must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and for the health and safety of your employees and purchasers of your products. Nothing contained herein is to be construed as a recommendation to use any product, process, equipment, or formulation in conflict with any patent, and we make no representations or warranties, express or implied, that the use thereof will not infringe any patent. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND NOTHING HEREIN WAIVES ANY OF THE SELLER'S CONDITIONS OF SALE.

Safety Data Sheets providing safety precautions that should be observed when handling and storing our products are available online or by request. You should obtain and review available material safety information before handling our products. If any materials mentioned are not our products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be observed.

© 2017 Eastman. Eastman brands referenced herein are trademarks of Eastman or one of its subsidiaries or are being used under license. The ® symbol denotes registered trademark status in the U.S.; marks may also be registered internationally. Non-Eastman brands referenced herein are trademarks of their respective owners.