



Pharmaceutical Uses for Dow Chelating Agents

Dow chelating agents are quite useful as product preservatives. Color and flavor of syrups, elixirs, and other pharmaceutical liquids can be protected with 0.1% and less of Dow chelating agent. The Dow Chemical Company manufactures a pharmaceutical-quality chelating agent: VERSENE™ NA Edetate Disodium USP. In most cases, VERSENE NA Chelating Agent is recommended for general use in pharmaceutical applications.

Vitamins B and C are stabilized with the addition of VERSENE NA Chelating Agent, with indications that the stability of vitamins A, D, and E may also be improved. Of particular use is the stabilization of vitamin B12 in multivitamin preparations containing iron. Oxidative rancidity of emulsified oils in creams and ointments can be hindered as well.

Operational life of in-process liquids, including coatings, can be extended with the use of VERSENE NA. Active ingredients are often sensitive to oxidation or chemical attack either through direct attack or catalysis by transition metal ions. These problems can occur during processing or storage. Addition of VERSENE NA can minimize these effects.

Unless additional quantities of multivalent cations are added to the product, 0.1% VERSENE Chelating Agent is recommended as a starting point. Literature indicates that VERSENE NA may also affect product spoilage and improve the preservative system.

VERSENE NA Chelating Agent is manufactured to and meets the qualifications of the current U.S.

Pharmacopeia. It is excipient-grade and is not manufactured as an Active Pharmaceutical Ingredient. These products will meet the requirements for European Pharmacopeia, Japanese Pharmacopeia, and British Pharmacopeia, though this may entail additional cost for certification.

VERSENE NA Chelating Agent does not qualify as an API or an injectable-grade material and is not manufactured to such standards.

Other VERSENE Chelating Agents are often used in adjunct pharmaceutical applications, such as processing and cleaners. VERSENE 100XL Chelating Agent is of particularly high purity for such applications. Suitability of such products must be determined by the user.

For more information, contact us at your convenience:

www.versene.com

North America

Toll-Free

+1 (800) 441-4369

The Dow Chemical Company

2040 Dow Center
Midland, MI 48674

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, the Customer is responsible for determining whether products and the information in this document are appropriate for the Customer's use and for ensuring that the Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. The technology represented in this document may not yet be registered, and related products may not yet be 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. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

Notice: Any photographs of end-use applications in this document represent potential end-use applications but do not necessarily represent current commercial applications, nor do they represent an endorsement by Dow of the actual products. Further, these photographs are for illustration purposes only and do not reflect either an endorsement or sponsorship of any other manufacturer for a specific potential end-use product or application, or for Dow, or for specific products manufactured by Dow.

References to "Dow" or the "Company" mean The Dow Chemical Company and its consolidated subsidiaries unless otherwise expressly noted.

©™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

Form 113-01522-1217