

# Enable your consumers to strengthen their immune health

Carbopol® polymers are reliable, proven tools for creating high-value nutraceutical products.

Sustained release vitamin C tablets formulated with Carbopol polymers offer immune/antioxidant support, plus key features and benefits for consumers:

- Smaller, easier-to-swallow tablets
- Optimized delivery (up to 12 hours in vitro)
- Extended absorption window for improved uptake
- Consistent dosing from tablet-to-tablet





## Vitamin C Sustained Release Tablets with Carbopol Polymers

#### **Materials and Methods**

Property	Value
Sustained Release Polymers	Carbopol® 971P NF Polymer Carbopol® 71G NF Polymer
Carbopol Polymer Inclusion Level	5 to 25%
Viamin C Strength	500 mg
Manufacturing Method	Direct Compression

#### Results

- Carbopol Polymers enabled 8 to 12 hours of in vitro vitamin C release
- Results achieved with as little as 5% Carbopol polymer
- Addition of extragranular Carbopol 71G polymer provided better sustained release
- Good control over release was demonstrated at 500 mg dose in all media tested



Figure 1. Vitamin C release from 500 mg dose tablets in 0.1N HCl (Stomach)

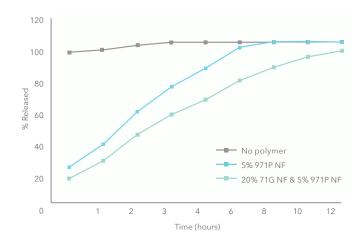
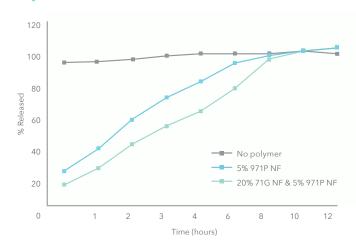




Figure 2. Vitamin C release from 500 mg dose tablets in pH 6.8 buffer (Intestine)





### Start your project today

Visit go.lubrizol.com/CarbopolForNutra to learn more.





9911 Brecksville Road Cleveland, OH 44141-3201 USA

Lubrizol.com/Health

The information contained herein is believed to be reliable, but no representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications or the results to be obtained. The information often is based on laboratory work with small-scale equipment and does not necessarily indicate end-product performance or reproducibility. Formulations presented may not have been tested for stability and should be used only as a suggested starting point. Because of the variations in methods, conditions and equipment used commercially in processing these materials, no warranties or guarantees are made as to the suitability of the products for the applications disclosed. Full-scale testing and end-product performance are the responsibility of the user. Lubrizol Advanced Materials, Inc., shall not be liable for and the customer assumes all risk and liability for any use or handling of any material beyond Lubrizol Advanced Materials, Inc.'s direct control. The SELLER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Nothing contained herein is to be considered as permission, recommendation nor as an inducement to practice any patented invention without permission of the patent owner. Lubrizol Advanced Materials, Inc., is a wholly owned subsidiary of The Lubrizol Corporation.