

## SA-99 Sales Script

Takeda Chemical Industries is the world's second-largest manufacturer of ascorbic acid. But we're second to none when it comes to dependable delivery of high-quality products. Excellence has been a tradition at Takeda for more than 200 years.

Takeda began in 1781 as a retail drug store in Osaka, Japan. Today, we're Japan's largest pharmaceutical manufacturer, with offices throughout Japan) and affiliate companies throughout Europe, America, and Asia.

Seven Takeda factories operate round-the-clock, producing chemicals, drugs, medicines, and other products designed to enhance people's health and wellbeing. And, our eleven-hundred research scientists are continually looking for new and better products to treat disease and maintain health.

For more than thirty years, Takeda Chemical has supplied American food and pharmaceutical manufacturers with ascorbic acid. For example, C-97, our directly compressible ascorbic acid, is used in both multivitamin and Vitamin C tablets.

But in chewable Vitamin C, C-97's acid taste can make the tablet a bitter pill to swallow. The challenge was to find an ascorbic acid substitute that eliminates acid taste without reducing the vitamin's potency.

The solution is SA-99--Takeda's Sodium Ascorbate for Direct Compression.

Both C-97 and SA-99 are odorless granular powders. Buy sodium ascorbate has a slightly salty taste--much milder than the sharp bitterness of ascorbic acid.

By itself, SA-99 is used in the production of both straight Vitamin C and multivitamin tablets.

In combination with C-97, SA-99 is used in chewable Vitamin C. It neutralizes the acidity of C-97 without lowering the Vitamin C content of the tablet. With SA-99, you can produce small, high-potency vitamin tablets.

SA-99 features good compressibility, flowability, and color stability, as well as a narrow particle size distribution. Let's take a look at how these features help you produce better quality vitamins at less cost.

SA-99 is directly compressible into tablets. As you know, the direct compression method requires only two steps--blending and compression. As a result, you need fewer machines and fewer operators on the production line. This, in turn, increase5productivity and reduces manufacturing costs.

A key advantage of SA-99 is that it flows smoothly and easily from the hopper to the dies. This ensures that there is very little variation in weight between one tablet and the next.

SA-99 consists of approximately 99 percent Sodium Ascorbate USP-FCC and one percent food starch.

This mix is certified Kosher for year-round use by the Union of Orthodox Jewish Congregations in America.

But just as important, the added starch makes it easier to compress the tablets and gives the vitamins superior hardness.

The starch binder also enhances SA-99's color stability.

This graph shows how fast--and to what degree--sodium ascorbate discolors in storage when it is granulated with various binders.

You can see that discoloration is insignificant when starch paste is used as the binder. In fact, the material granulated with starch paste discolors less than does pure sodium ascorbate!

Exposure to metallic ions, sunlight, air, or moisture can cause SA-99 to darken from white to slightly brown. But SA-99 won't discolor if you store it in its shipping drum in a cool, dry place.

To keep moisture out, we granulate SA-99 here--in this moisture-controlled, fluidized-bed spray granulator. The automatic moisture control keeps the moisture content in the fluidized bed below five percent. This prevents discoloration of the sodium ascorbate during granulation.

The moisture-controlled granulator also produces granules with a narrower particle size distribution than you'd get with conventional fluidized-bed granulation or wet granulation.

The narrow particle size distribution, combined with SA-99's flowability, allows you to use high-speed tableting machines to compress the granules. This greatly reduces the time, energy, and expense of manufacturing vitamin tablets.

We ship SA-99 to you in strong, durable, 50-kilo metal drums. These sealed drums contain silica gel to protect the chemical from moisture and prevent discoloration.

Takeda maintains SA-99 stocks in warehouses strategically located coast-to-coast. Our on-time delivery ensures that you have all the SA-99 you need--where and when you need-it.

And if you need to know more about the uses and properties of SA-99--or any of our products--our technical support staff is available to answer any questions you may have.

Compressibility, flowability, color stability, and a narrow particle size distribution are the features that make SA-99 the right choice for your formulations of chewable Vitamin C, straight Vitamin C, and multivitamin tablets.

Technical support, assured delivery, reliable products, ongoing R & D, and worldwide sales and service are the reasons you should choose Takeda to supply all your ascorbic acid products.

You won't find a more dependable supplier than Takeda, or a better ascorbic acid substitute than SA-99.

Not in 200 years.

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