

NutraCos

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Cosmetics



Pin mill helps cosmetics producer meet quality standards

Munson Machinery Co., Inc.

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With seven manufacturing and distribution facilities, totaling more than 232,225 m², Cosmetic Essence, Inc. (CEI, Holmdel, New Jersey) claims to be the leading global provider of services to the personal care industry. While the bulk of its business is contract production and packaging of products for the world's brand name cosmetics companies, CEI also does research and development of new products for its clients.

In 2007 the CEI Roanoke facility received an unusual request from a client: To help produce a proprietary line of the client's minerals-based

the process and providing the appropriate machine for our needs," says WARDACH. "They loaned us a machine for testing and the tests were successful, so we bought one."

TWO PIN MILLS PROCESS MULTIPLE PRODUCTS

That machine was installed in July 2007 and was initially used for one product in the line of face powders. Other products have been added since then and today CEI produces five different formulations, each one in six colour shades. A second pin mill was added in July 2008 to handle the increasing load.

CEI produces the face powders to order in batches of 100-400 kg. The principal ingredients – titanium dioxide and iron oxides – are weighed and fed to a twin-shell intensifier blender that has a capacity of 400 kg.

From the blender, the mixed product is dumped into a hopper, then fed

the top-center of the stationary disk and is thrown to the periphery of the disks by centrifugal force. Along the way, the particles are reduced in size by the dynamic force created between the rotating and stationary pins, the final particle size being determined by the rotation speed.

CEI's two pin mills, which are identical, are located in series, since it takes two passes to achieve the desired particle size. Initially, when the company had only one mill, the product had to be recycled through the machine. CEI operates both machines at 3,600 rpm.

A FAST-FLOWING STREAM

Product exits each mill through a port in the bottom of the machine, entrained in an 8.5 m³/min air stream that is generated by the speed of the mill. The air stream not only provides high throughput, but also cools the mineral-based powder, thereby protecting it from possible degradation by frictional heat generated within the mill.

Handling the large volume of air was a challenge at first, says WARDACH. CEI solved the problem by means of a rotary valve that separates



An operator adjusts the inlet to the pin mill

face powders using a pin mill, also known as a centrifugal impact mill, to obtain the desired particle size.

CEI, like many cosmetics contract manufacturers, was not familiar with pin mills, says DAVID WARDACH, vice president manufacturing for CEI Roanoke. "Mostly we use hammer mills and jet mills, but in this case the client uses a pin mill in its own operation and we had to duplicate the client's process. As we have learned from experience, the pin mill is ideal for mineral-based face powders."

To learn about pin mills WARDACH did an Internet search, which led him to Munson Machinery Co., Inc. "Munson's STEVE KNAUTH and JERRY SPROSS of EPI Technical Sales, Inc. were helpful in analysing

by a proprietary means to the pin mills, which reduce particles to a fine powder. Each mill is made of stainless steel and consists of two 46 cm dia parallel disks, each of which has five concentric rows of pins on its face. The two faces are set close to each other, so that the pins on each disk intermesh.

In operation, one disk remains stationary while the other rotates at speeds ranging from several hundred to 5,400 rpm, powered by a 15 kW motor. Process material is fed through



Access to the interior of the pin mill is achieved by simply unlatching the cover



Cleaning the pin mill is a relatively easy task



Iron oxide (foreground) and titanium dioxide are basic raw materials for CEI's face powders

the product from the air, which is vented. After leaving the second mill the powder is collected and transferred to the hopper of a filling machine that fills the product into jars.

WARDACH adds that the machines "have worked well and quality has been great. The operation has run smoothly and the repeatability has been very good."

NEWS NEWS

AMYRIS PARTNERS WITH GIVAUDAN TO DEVELOP KEY FRAGRANCE INGREDIENT

Amyris, Inc. announced that it has entered into an agreement with Givaudan, the global leader in the fragrances and flavors industry, headquartered in Vernier, Switzerland. Under the agreement, Givaudan will develop a derivative of *Biofene*[™] (farnesene) to be used as a building block for one of the most important proprietary fragrance ingredients in Givaudan's palette.

REXAM PERSONAL CARE APPOINTS NATHALIE NOWAK GLOBAL MARKETING AND INNOVATION DIRECTOR

Rexam Plastic Packaging's Personal Care Division announced the appointment of NATHALIE NOWAK to the position of Global Marketing and Innovation Director.

MOMENTIVE FEATURED SPECIALTY SILICONES FOR PERSONAL AND HOME CARE

Momentive Performance Materials showcased its growing portfolio of specialty silicone products for the personal care and home care industries at the Personal Care and Home-care Ingredients (PCHI) show in Shenzhen, China, February 22-24, 2011.

High technology *Silsoft*, *Velvesil*, *Tospearl* and *Softouch* products from Momentive Performance Materials are used by personal care companies around the world to enhance the performance and sensory experience of cosmetics, hair care, skin care, shower and bath, sun care and toiletry products. Select *Formasil* and *Silwet* products for home care can help enhance the performance of household cleaning and polishing products, as well as laundry care products.

SYMRISE LAUNCHES NEW TECHNOLOGY EVODRYT AND ACCELERATES EXPANSION IN ASIA/PACIFIC

Symrise Asia Pacific, one of the leading suppliers of fragrances, flavorings and raw materials as well as active ingredients for the perfume, cosmetics and food industries, completed the third phase of its expansion in Singapore with the opening of a new facility and the launch of the unique encapsulation technology *EVODRYT*.

NPA HELPS MILLIONS OF PEOPLE FIND TRULY NATURAL PRODUCT

The Natural Products Association (NPA) helps millions of Americans every day by easily identifying personal care and home care products that are truly natural. In 2010, NPA celebrated the 500th certification of products and ingredients under the *NPA Natural Seal* – the first and only natural certification in the United States.

Get a complete list at www.TheNaturalSeal.org.

'INFALLIBLE' TECHNIQUE RECOGNIZED BY L'OREAL

RPC beauté (Marolles, France) has manufactured a compact but eye-catching eyeshadow pack for L'Oréal Paris' *Infallible* brand.

SKINVISIBLE AWARDED COMPREHENSIVE INVISICARE PATENT FOR CANADA

Skinvisible, Inc. announced that the Canadian Patent Office has issued a Notice of Allowance for the comprehensive technology patent for Skinvisible's *Invisicare* polymer delivery system.

SUCCESSFUL NATURAL COSMETICS LINE ADDS NEW PRODUCTS AND OPTIMIZED FORMULATION

Just two years ago, ADA Cosmetics International (ADA) launched a line of hotel cosmetics certified with the EU Eco-label – the first German cosmetics company to do so. Now ADA is introducing an extension to the successful *Green Culture* body care series.