

GELITA

UPTO DATE

The Newsletter for GELITA Customers

#38

Product innovation

GELITA® RXL Advanced –
the next generation

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Dear Reader,

what makes a company the benchmark in its industry? It is the never ceasing dedication and effort, even when impressive records have already been achieved. One example: Over 98.5% of GELITA's 25,000 global deliveries per year arrive at our customers on time. GELITA thus significantly exceeds the average delivery reliability of other industrial enterprises.

GELITA® RXL gelatine increases the shelf life of gelatine capsules by avoiding undesired crosslinks. Now comes the next innovative leap:

The new GELITA® RXL Advanced minimizes the so-called cross-linking effect even with particularly reactive products – and creates new opportunities for GELITA customers.

Many doctors have been waiting for this product: GELITA TUFT IT®, the world's first gelatine fibrillar. With GELITA TUFT-IT®, doctors will be able to stop bleeding more simply, flexibly and efficiently in future, and doctors can provide their patients with better treatment.

We are also particularly delighted that we have been awarded with two prestigious prizes. One for excellent brand management, and another for our new image video. We hope you enjoy reading the new uptodate newsletter: Stay tuned!



The editors of uptodate spoke with Thomas Muthny, Global VP Material Management/Supply Chain

Michael Teppner,
Global VP Marketing & Communication
GELITA AG

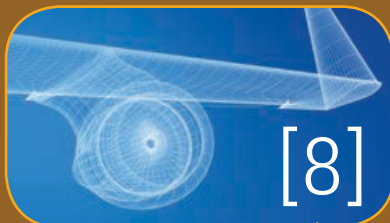
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Product innovation

GELITA® RXL Advanced – the next generation

GELITA has already demonstrated with GELITA® RXL how the durability of gelatine capsules can be significantly increased. Now the company is taking the improvement to the next level with GELITA® RXL Advanced for highly reactive drugs.

Hard and soft gelatine capsules are the most popular dosage forms for prescription and non-prescription medicines as well as for dietary supplements. The neutral tasting capsules are easy to swallow and dissolve quickly in the gastrointestinal tract. Hard capsules are mostly used for powdery agents, while soft capsules are particularly suitable for liquid and paste forms.

One important sticking point for the pharmaceutical industry in the past: the long-term stability.

Under extreme storage conditions – a relative humidity of 75% and a high temperature of 40° Celsius, for example – certain reactive filling materials can form water-insoluble cross-links at the interface between the capsule shell and the product. These cross-links (short: XL) can delay the release of the drug and reduce shelf life. For a long time, there was no solution for

this very costly effect. Attempts by the pharmaceutical industry to prevent this unwanted process with additives haven't been met with much approval so far.

A successful combination

GELITA achieved the breakthrough: The company already launched the RXL technology in 2014. One aspect of the patented RXL concept is the controlled adjustment of the molecular weight distribution of gelatine during the production process. GELITA optimally tailors this combination of different gelatine molecules to the customer's specific requirements. The RXL technology considerably reduces the amount of crosslinking and significantly improves the durability and dissolution of the capsules. These improved qualities/features were tested in collaboration with the University of Heidelberg using a model system for soft capsules. All GELITA® RXL products consist of 100%

gelatine, contain no additives, and are suitable for pharmaceutical and food applications.

New market opportunities for GELITA® RXL Advanced

GELITA did not rest on this success, but continued their research and came up with the whole new product GELITA® RXL Advanced. This innovation minimizes the cross-linking effect even in particularly reactive drugs and dietary supplements. As a result, the application range of gelatine capsules is once again expanding – presenting the pharmaceutical industry with new chances and market opportunities.

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"Every one of our products is tailor-made."



Thomas Muthny

Thomas Muthny has been working at GELITA for 31 years.

He graduated at the vocational academy and GELITA with a focus on marketing and controlling in industrial companies.

He subsequently continually rose up the career ladder. Nine years ago, Thomas Muthny became Global VP Material Management/Supply Chain.

Every 30 seconds, a truck loaded with gelatine leaves a GELITA plant somewhere in the world. Thomas Muthny, Global VP Material Management/Supply Chain and his team ensure that the right products are produced at the right time in the right place and reach the customers around the globe.

Mr Muthny, the value chain is a broad term. What aspects are included in your responsibility?

My job is to control the global internal and external gelatine purchases. 25% of our global sales volume travels around the globe as so-called intercompany sales. From Germany, for example, we supply customers in Asia or Brazil. From the United States gelatine is shipped to South America, and vice versa. GELITA handles over 25,000 deliveries per year. We are constantly busy coordinating and optimizing all these delivery processes.

We are also responsible for the daily, short and medium term production planning and capacity utilization. GELITA produces 95% of the products on demand. In Germany alone, we have 4,000 specifications for our customers. In principle, each product is tailor-made.

What do you do to optimize the supply chains?

Where possible, we are trying to switch to direct shipments. One example: Instead of delivering gelatine from Brazil to Germany and stocking it here for a client in Spain, the customer orders directly from GELITA Brazil. This cuts time, environmental impacts of multiple shipping transactions and improves efficiencies. This creates a win-win situation and contributes to sustainability. Internally we are constantly working on standardizing processes and optimizing the floor-to-floor times of the individual production steps.

How do your customers react?

The customers need to adapt their planning and order earlier, of course, because delivery times are longer. Our customers are mostly large, multi-national companies. It shouldn't pose a problem for them. Proof that it works is provided by the fact that 90% of the customers who opt for direct shipment stick with it.

What challenges do you expect in your area in the near future?

Globalization will increase. This means we need even more flexibility on our shipping routes, which is why we are already working on new delivery routes. Complex regulatory requirements make this process very demanding. For the new connection between Mexico and Australia, for instance, the veterinary authorities took nine months to agree on the health certificate. But the fact of the matter is: The more delivery routes that are available to us, the faster we can compensate shortages and overproduction in the various countries.

The requirements for our raw materials are becoming stricter as well, for example, with respect to halal and kosher.

"We are developing the supply routes of tomorrow today."

More and more people want to know the origin of the raw materials used in production. This traceability, which is no longer an issue in Europe and the US since the BSE crisis in 2000, is now increasingly required in South America and Asia Pacific. This means a considerably higher effort for us along the entire value chain.

Your team consists of over 100 employees from all over the world. What do you expect of each team member?

That the values GELITA has committed to are filled with life. Attitude and passion are very important characteristics and requirements because they cannot be taught or learned. Every function depends on other functions. Internally as well, we always maintain a customer-supplier

relationship. Everybody does their bit to ensure that our products reach the customer on time and in the desired quality. We want to satisfy every single customer, including those in our own company.

Reliability is one of those values. What does it mean in the context of your area? And what do you do to further incorporate this value?

"Our delivery reliability is 98.5% worldwide."

Our worldwide delivery performance of 98.5% best demonstrates our reliability. This means GELITA exceeds the average on-time delivery of the industry. Despite this outstanding result, we regularly request feedback from our customers and our colleagues in the company. We have regular exchanges and give each other feedback. There is always room for improvement, even if they are incremental.

Does reliability have the same significance in all cultures? How do you deal with differences?

Every culture has its own peculiarities and interprets reliability in a different way. It would be presumptuous, for example, to impose the German way of doing business on other countries. We need to recognize the local differences and deal with them.

What do you like about your job at GELITA?

The internationality: In the morning I deal with Asia, at midday with Europe, and in the afternoon with North, Central and South America. But above all, nothing is routine. Work is never boring at GELITA.

On the safe side – thanks to gelatine



GELITA® gelatine has been considered a versatile and indispensable excipient in the pharmaceutical industry for years. While MedellaPro® is used in innovative medical products, VacciPro® plays an important role in the production of life-saving vaccines.

When swine flu circulated in 2009 and the H1N1 flu virus was documented in more than 200 countries according to the World Health Organization (WHO), urgent action was required. Around the globe, pharmaceutical companies worked flat out on a vaccine – most of them relied on VacciPro® from GELITA. The collagen peptide was specifically optimized to stabilize vaccines and therefore contributes to a safe and effective vaccine.

The gold standard for vaccines

Low allergy potential, high biocompatibility and a high affinity for cellular tissue

make VacciPro® the preferred vaccine stabilizer of the world's leading pharmaceutical companies. GELITA manufactures the collagen peptide according to the requirements of the European and US official pharmacopoeia. The degree of sterility even exceeds the requirements set by the US regulatory authority Food and Drug Administration (FDA) on agents that are suitable for implantation.

The basis for innovative medical products

MedellaPro® has met with equally positive response from manufacturers as VacciPro® for many years. They use the medical gelatine, which also meets the highest

requirements of the leading pharmacopoeia, for tissue scaffolds, lens implants, bone filler, and for surgical sealants and wound healing pads. Patients requiring tissue transplantation also benefit from MedellaPro®: With its excellent biocompatibility, minimum biol. bacterial count, low allergy potential, and high cell tissue affinity, even human tissue can be replicated with the product. This is the perfect, non-invasive alternative to transplantations of autologous tissue. The burden and risks for the patient are significantly reduced and costs are cut. GELITA's commitment extends far beyond first-class product quality. The company cooperates closely with worldwide regulatory authorities – and helps customers to obtain the necessary approvals for their products.

GELITA launches innovative new product

Many doctors were waiting for it, and now GELITA provides it: the world's first gelatine fibrillar for controlled hemostasis. GELITA TUFT-IT® combines the positive properties of a gelatine-based hemostat with the easy handling of a non-woven structure.

With GELITA TUFT-IT®, doctors will be able to stop capillary, venous and light arterial bleeding even more simply, flexibly and efficiently in future – even those that are difficult to deal with by conventional methods. The patented gelatine fibrillar adapts optimally to irregular tissue and is also suitable for hard to reach areas. GELITA TUFT-IT® can be applied in small clusters or thin layers until hemostasis is achieved. This makes it possible to control hemostasis very efficiently with exactly the right product amount.

The handling? Couldn't be easier!

Doctors can use gelatine fleece directly out of the box, without moistening it beforehand. The individual fibers adhere to each other, so the product always keeps its shape. This enables GELITA TUFT-IT® to avoid the risk of uncontrolled spread beyond the edges of the wound. Since the gelatine fibrillar does not stick to the wound, it can also be repositioned during the procedure – thus providing optimal patient care. GELITA MEDICAL gelatine-based hemostatic agents, which have proven their worth for many years, are bio-compatible: The material is completely absorbed by the body. Due to its neutral properties, GELITA TUFT-IT® is suitable for combined use with active ingredients such as thrombin, antibiotics or steroids. GELITA TUFT-IT® is particularly suitable for cardiovascular surgery, neurosurgery and spinal surgery, gynecological and urological procedures, and visceral surgery.

A world first:
GELITA TUFT-IT®

MORE INFORMATION:

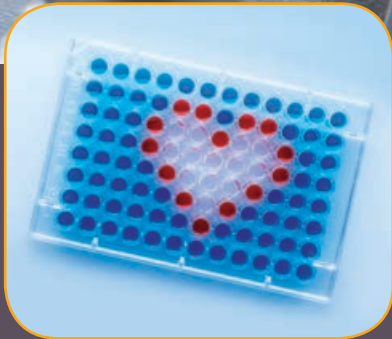
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Lifesaving vaccines




Low allergy potential



Minimum bacterial count

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A tough material:
GELITA gelatine
in aircraft turbine
construction.

Flying high with NOVOTEC®

How can ceramic fiber composite materials for aircrafts be made particularly resistant to heat and corrosion? That's the question Thomas Wamser of the University of Bayreuth dealt with. He found the solution in GELITA® gelatine.

— Gelatine of all things should improve a material's stability? For Dr.-Ing. Wamser, head of the Powder Technology team at the university's Department for Ceramic Materials, it doesn't sound at all odd. In the last few years, he and his team have developed an elaborate process for producing oxide ceramic composites, which uses GELITA NOVOTEC® gelatine. "The ceramic fibers of the composite materials are surrounded by a ceramic matrix", explains Wamser and continues: "The gelatine influences the formation of the ceramic microstructure."

Superior process – thanks to NOVOTEC®

In the process, Wamser adds NOVOTEC® to the ceramic slurry – the mixture of water, ceramic raw material and dispersant. Woven ceramic fiber layers are subsequently placed on top of each other and laminated. The material is then freeze-dried. The ice crystals formed during this freeze casting prevent the ceramic from losing volume when they are later heated to 1200°C, a process experts call sintering. In addition, the density of the material increases. "By adding NOVOTEC® we can even produce exactly the desired microstructure in ceramics", explains Wamser. "That is the great advantage of freeze casting with NOVOTEC® over other methods."



Resistant to extremely high temperatures: A burner nozzle produced with NOVOTEC® composite.



Thermal shock test of a 1200 °C hot burner nozzle in water.

GELITA has supported Wamser and his team throughout the development. "GELITA's experts tailored the gelatine exactly to our needs. In a joint effort, for example, we worked specifically on preventing the viscosity of the slurry from increasing by adding gelatine", says Wamser. The result? An oxide ceramic composite material which is very tolerant

towards damage. Unlike conventionally produced variants, it is not affected by brittle fracture, i.e. an immediate material failure, in case of small cracks or inhomogeneities. "A composite material produced with NOVOTEC® can be very helpful wherever you have to deal with a high risk of corrosion, as in aircraft turbine construction or in high temperature applications", says Wamser.



Preparing the ceramic slurry in the laboratory of the University of Bayreuth.

FURTHER INFORMATION:

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SHAPEUP™ cuts a fine figure

Many of us know how it goes: You're perfectly happy with your weight – but your figure in the mirror is at odds with your self-image. The reason: Your silhouette has changed unfavorably over the years even without any weight increase. How to get your body – and that of your customers' – back into shape? With targeted training and the new SHAPEUP™ by GELITA.

Where once there was a waistline, there is now a spare tire. And what used to be a flat stomach has evolved into a small ball. How can that be the case, especially when the scales continue to show the same or just a little more weight? The answer lies in the ratio of muscle to fat mass. Most people reduce their sporting activities in the course of their lives, which inevitably leads to a reduction of muscle mass.

However, muscles consume the most energy in the human body. They even stay in combustion mode when you are sitting quietly on the sofa. If the muscle mass is reduced, you consume less energy as a consequence. So unless calorie intake is simultaneously limited,

Awaken muscles from their slumber

The first good news: This negative development can be stopped and even reversed, if the muscles are exerted and strained again. The great thing about muscles is their ability to grow and regenerate well into old age. Targeted resistance training, such as weight training or physical hard work, promotes the development of muscle mass. A little bit of cycling or jogging, on the other hand, is not enough. If you don't like going to the gym, it's possible to train at home with a Thera-Band and the weight of your own body. To train efficiently, it is important to do at least five different strength exercises for the largest muscles three times a week. Seven to twelve sets in 20 to 60 seconds is optimal.

ficant improvement compared to muscle training alone. Just 15 grams of SHAPEUP™ daily – stirred into hot or cold liquids, in yogurt or on cereals – are enough to achieve the trial results. The first improvements are already apparent after six to twelve weeks – and are highly encouraging: Most people then continue with their training.

BODYBALANCE™ offers companies numerous fields of application: They can supply their customers with GELITA bioactive collagen peptide in beverages, shakes or bars and optimally support them in their desire for a well-toned body.

**British Journal of Nutrition, June 2015*



The dietary supplement SHAPEUP™ by GELITA for now is only available in Germany

you gain weight – and that consisting of fat mass, which burns no energy. And so begins a process in which lean muscle mass is increasingly replaced by fat body mass. Your customers needn't despair, however, because GELITA has the solution.

Greater success thanks to proteins

The second piece of good news: Supplementing food daily with proteins – and that is scientifically proven – increases muscle growth in combination with strength training. That's where new SHAPEUP™ comes into play. SHAPEUP™ consists of the collagen protein BODYBALANCE™ by GELITA. This 100% pure protein is characterized by a high bio-availability: Collagen is the most common protein in the body. As a basic constituent of tendons, ligaments, skin, bones and cartilage, it is also responsible for elasticity. Collagen is the only allergen-free protein and contains no milk, soy proteins or any other allergenic substances.

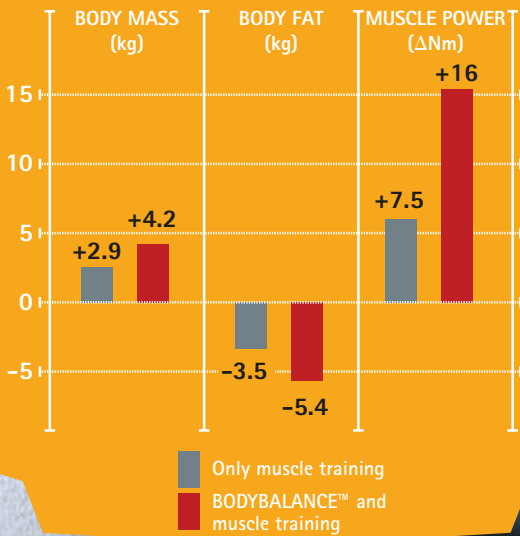
Science confirms: SHAPEUP™ works

The third piece of good news: The particle size of BODYBALANCE™ is 100% compatible with the human body. SHAPEUP™ therefore supports muscle development particularly effectively. Clinical studies* show a signi-



MORE INFO AT:
www.formyourbody.com

CHANGES THROUGH BODYBALANCE™



Double honor for G

GELITA has every reason to be proud: The company won not just one, but two awards: The corporate film "You can see" won the coveted gold "Intermedia Globe Award" at the "WorldMediaFestival" in the category "Public Relations / Image". And for successful brand management, GELITA won the "German Brand Award" in the category "Industry Excellence in Branding".

Creative and technically outstanding! That was the verdict of the jury at the "WorldMediaFestival – global competition for modern media" on GELITA's new corporate image film. "You can see" portrays the wide-ranging applications for gelatine and collagen peptides in an imaginative way: Shot in black and white, the film highlights the products in orange – and thus provides the viewer with a new perspective on the world. Stephan Ruhm, GELITA Marketing and Communications, accepted the gold "Intermedia Globe Award" in May at the official award ceremony in Hamburg. The "WorldMediaFestival" is an international competition for communication media and one of the most important industry events.

And as if that wasn't enough, in mid-June the German Design Council (Rat für Formgebung) and the German Brand Institute awarded the GELITA brand with a prize in the category "Industry Excellence in Branding" – a very special honor! Because the contenders are handpicked: Only those who are nominated by the German Brand Institute, its brand scouts and expert committees are allowed to participate. Along with excellent products and services, a consistent brand strategy is essential for setting standards in the global competitive environment", said Michael Teppner, Global VP Marketing & Communication at GELITA AG, who accepted the German Brand Award at the festive ceremony in Berlin.



NEWS + NEWS + NEWS + NEWS + NEWS

ELITA



GELITA corporate film "You can see" wins award.

Ballistic gelatine on YouTube

Jörg Sprave has a penchant for slingshots. He demonstrates his unusual machines every week on his YouTube "Slingshot Channel", followed by roughly a million followers. In spring 2016, Sprave visited GELITA in Eberbach, Germany, to get to the bottom of the myth of ballistic gelatine.

You can see the experiments the German YouTube star conducts with the gelatine here: www.gelita.com/de/news/sprave



FLOWER POWER

For the international Earth Day on April 22, 2016, the GELITA USA CARE team came up with something special: The team motivated their colleagues to participate in the GELITA e-Cycling event on Earth Day with a very special card. It was printed on paper which had been primed with plant seeds. The participants only had to cover the paper with soil and water it, and a short time later colorful wildflowers began to sprout.



**BEAUTIFUL,
FAST,
STRUCTURED!**

**NEW LOOK, NEW TECHNOLOGY, NEW CONTENT:
GELITA'S WEBSITE HAS HAD A COMPLETE MAKE-OVER.**

www.gelita.com impresses with a fresh design and its simple use – the site automatically adapts to the size of the screen and is easily readable on tablets and smartphones. The new GELITA product finder takes you to the most relevant information with only a few clicks. The website is available in English, German, Portuguese, Spanish, and Chinese. Additional functions will be added continuously. Be sure to check out our latest offers regularly. www.gelita.com

DATES:
Visit GELITA and experience innovative products for the megatrends of tomorrow. In 2016 we will exhibit at the following fairs:

IFT Chicago	16 to 19 July 2016
GELITA Pharma and Health & Nutrition Symposium, Berkeley, USA	20 to 22 Sep 2016
SSW Las Vegas	6 to 7 Oct 2016
Food Matters Live London	22 to 24 Nov 2016
HIE Frankfurt	29 Nov to 1 Dec 2016

Masthead

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Global perspective

The world's sweet tooth

Sweets make you happy – especially when combined with fat. That has been scientifically proven. Our body secretes serotonin, which makes us happy and relaxed. Sugar also briefly increases concentration, but after the peak, the power level drops below the starting point. Sugar was probably extracted for the first time in India in about 300 BC. Is it a coincidence that Yoga stems from there as well?

In the long term and with excessive consumption, sugar is more harmful than beneficial, of course – everyone knows that nowadays. So much the better that there are products available that let you enjoy sweets in a healthy way. With GELITA OPTICE®, for example, it is possible to make wonderfully velvety ice cream completely without fat and sugar; as well as fat-free soft ice cream or other frozen desserts. It's even better when the sweets are not only sugar-free, but also fat-free. Or if they are enhanced with important nutritional supplements: Vitamins, omega-3 fatty acids, or probiotics can be added to GELITA® Fortified Gummies according to taste. Small wonder, then, that the healthy snacks are a big seller in the US.



Mexico

Chocolate was invented in Mexico. How could the country be anything other than a candy paradise? However, people in Mexico today like things considerably sweeter than their ancestors; so sweet, that a special tax on sugary drinks had to be introduced some time ago – for health reasons. A challenge for visitors to get used to is the combination of sweet and sharp. Lemon chili is a popular ice cream flavor, for instance. Mexico is also the land of jello, which is why there is such a high consumption of gelatine. This results in works of art such as the „Gelatina mosaica“, a beautiful and refreshing mosaic made of gelatine cubes in different colors.



Netherlands

It is amazing how each country in Europe maintains its peculiarities when it comes to sweets. In the Netherlands, for example, liquorice is very popular – which is hard for the neighboring countries to understand. Some liquorice ingredients are ammonia, sugar, gelatine and – depending on taste preferences – varying amounts of salt. At breakfast time, “Hagelslag” is highly popular, chocolate sprinkles that are sprinkled on warm bread and butter. The Dutch also have a sweet tooth and are therefore willing to ignore counting calories. One delicious proof of this is poffertjes: pancake puffs fried in hot fat and served with melted butter and plenty of icing sugar.



Russia

Chocolates filled with chocolate fondant and pastries are the most popular confectionery in Russia. A traditional treat is marshmallow cake: an airy base with a thick layer of foamy gelatine-milk cream, topped with lavish chocolate butter frosting. However, in Russia as well there is a trend towards healthier and calorie-reduced products. Additional benefits are also welcome by the way: Sweets enhanced with vitamins or other functional components are all the rage, particularly in the premium segment. The young generation goes for chewing gum, jellies and chews – especially sugar free.



You can download our latest product sheets on www.gelita.com, free of charge!

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GELITA
Improving Quality of Life