

# Pharma-Grade Lactic Acid & Derivatives

LEVERAGE THE POWER OF RELIABLE PARTNERSHIP



# Develop high-quality products with our Lactic Acid, Derivatives & specialty solutions



Corbion factory in The Netherlands

Staying ahead in the global pharma industry leaves little room for error. Quality, compliance, timeliness and a clear concern for the welfare of patients and the planet are all essential; the cost of compromise in any one of these elements is high. That is why choosing the right ingredient partner - one that can be relied on for industry experience, specialized expertise, commitment to consistently superior quality, responsiveness and consistent supply - is a crucial enabler of your success.

At Corbion, our purpose is to help preserve what matters - to you, to the patients and practitioners who use your products, and to the world. We focus on delivering solutions that meet the very specific needs of your business while considering the health of the planet as well as the natural resources on which we all depend. Corbion is the worldwide market leader in production of lactic acid and derivatives, such as Sodium Lactate, which play an important role in a range of active pharmaceutical ingredients and excipients. We are a global company and one of the most experienced in producing biobased ingredients and chemicals through fermentation of carbohydrates.

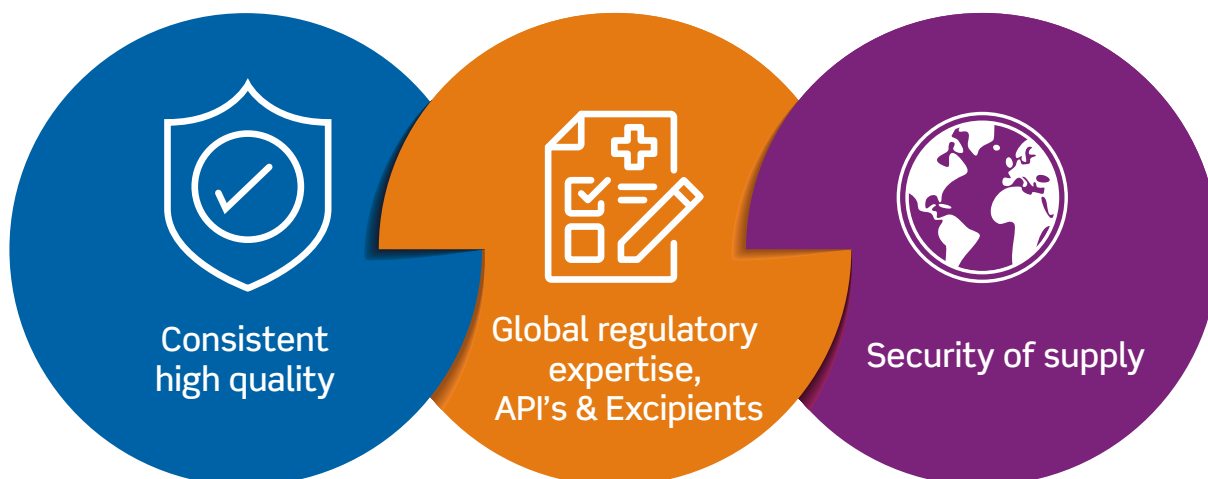
For more than a century, Corbion has excelled in the production of high-quality lactic acid and we have been

honing that core competence in ways that create advantages for pharma manufacturers. Our innovative teams work to continually improve our production technology through advancements that increase efficiency, quality and sustainability.

## Quality comes first

As quality and regulatory demands grow increasingly rigorous across the value chain in the pharmaceutical industry, we're seeing greater emphasis on risk management, transparency and control. For our most important APIs, Corbion holds the required global and local pharmaceutical registrations (CEP, US-DMF, C-DMF).

And by continuously investing in Quality and Regulatory activities, we embed practices into our culture that improve business performance. All our ingredient solutions are manufactured under cGMP conditions, and we follow ICHQ7's Good Manufacturing Practice Guidance for APIs standards thus aligning our practices with the concepts established by the ISO. Moreover, our APIC membership ensures we keep up to date with the latest developments in the pharma industry.



Consistent high quality

Global regulatory expertise, API's & Excipients

Security of supply

In addition, all relevant Corbion products are compliant with EU and UK REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) Regulations, and we are actively pursuing registrations in other emerging regions like India and China to ensure that we are compliant, not only within the stringent European market, but also beyond.

(S)-Lactic acid and its derivatives, such as Sodium (S)-lactate, which is sold as PURASAL S/PF. Sodium (S)-lactate plays an important role in Dialysis solutions used in treating patients with chronic kidney disease (CKD) and end-stage renal disease (ESRD). It also functions as an electrolyte or as an alkalinizing agent in intravenous (IV) applications and is used in other Pharmaceutical and Cosmetic applications as well.



### Mineral fortifications', Supplements and Injectables: Calcium Salts & Mineral Salts

Increasing consumer interest in preventive healthcare is driving sales of over-the-counter mineral products that can help prevent issues like calcium deficiency (which can lead to osteoporosis) and inflammatory disorders, mitigate the effects of menopause and aging, and promote heart health.

Corbion offers a wide range of natural minerals that provide suitable sources of added nutrients (Calcium, Zinc, Magnesium and Potassium) for diverse applications and supplements. We can help you achieve effective mineral and electrolyte delivery with mineral lactates and gluconates that provide good solubility, high bioavailability and neutral flavor in both liquid and in solid applications. And our portfolio incorporates directly-compressible product grades that make processing easier (non-hygroscopic, free-flowing powders).

If you are looking for excellent Calcium sources to boost Calcium intake our PURACAL family of Pharma grade Calcium Salts is the ideal solution.

Our GLUCONAL® family of high-performance, gluconate minerals are as well-suited for oral use for human nutrition as they are for injectables and/or veterinary applications. PURAMEX® mineral salts are derived from natural L-lactic acid, which we produce via fermentation of carbohydrates. They are used in an array of applications that include tablets, capsules, powder blends, effervescent and chewable tablets, liquid supplements and syrups, and lozenges.

### Excellent service standards

Service excellence is a top priority for us at Corbion. Our dedicated team of Quality and Regulatory experts are ready to assist our customers and offer support in preparing essential documentation. Please feel free to contact us for more information.



### Parenteral and Dialysis solutions: Lactic Acid and Sodium Lactate

Growth in the global Renal Care & IV market is attributable to a number of contributing factors, including the expanding elderly population, rising numbers of diabetic patients, the increasing incidence of obesity and hypertension, and escalating overall expenditures on healthcare worldwide. These factors are expected to continue accelerating strong market growth in the near future.

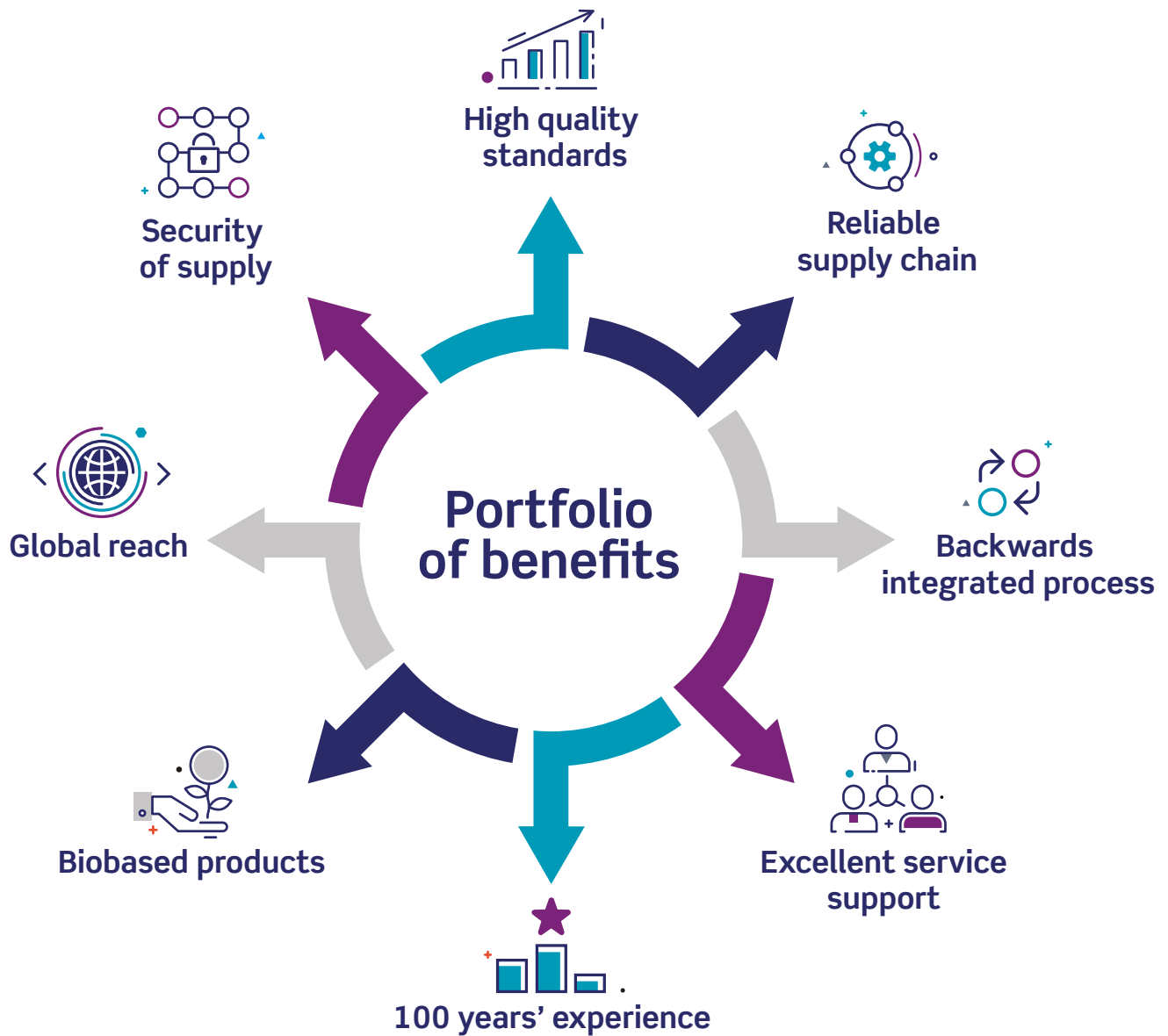
To help pharma companies meet this demand, Corbion produces pharmaceutical grades of natural L-Lactic acid/



Corbion factory in Spain

Find our pharma grade solutions in the table below.

Product name	Pharmacopoeia	Specification
<b>PURAC® PF</b>	USP, JP, EP, CN	L-lactic acid/(S)-lactic acid
<b>PURASAL® S/PF 50%</b>	USP, JP, EP, CN	sodium (S)-lactate pharma grade 50%
<b>PURASAL® S/PF 60%</b>	USP, JP, EP, CN	sodium (S)-lactate pharma grade 60%
<b>PURACAL® PP/USP</b>	USP, EP	calcium lactate
<b>PURACAL® DC</b>	USP, EP	calcium lactate for direct compressible use
<b>PURACAL® XPRESS</b>	N/A	calcium lactate gluconate
<b>GLUCONAL® CAM-P-IN-EP</b>	EP	calcium gluconate monohydrate injectable grade
<b>GLUCONAL® CAM-P-IN</b>	USP	calcium gluconate monohydrate injectable grade
<b>GLUCONAL® CAM-P-OR</b>	USP, EP	calcium gluconate monohydrate oral grade
<b>GLUCONAL® CADS</b>	USP	calcium D-saccharate
<b>GLUCONAL® MG</b>	USP	magnesium gluconate
<b>GLUCONAL® K</b>	USP	potassium gluconate
<b>GLUCONAL® ZN</b>	USP	zinc gluconate
<b>PURAMEX® MG</b>	EP	magnesium lactate
<b>PURAMEX® ZN</b>		zinc lactate



### Both Global and Local

In today's constantly changing, highly complex value chains, companies face far too much supply volatility and uncertainty. With this in mind, we continually look for ways to improve our service with the aim of providing you the best customer experience possible. We offer high-value, competitive products that comply with local standards, while leveraging the flexibility of our global manufacturing and sourcing footprint. We offer locally based solutions as well. We have two manufacturing locations in Europe and, since 2015, we have extended our presence in Asia through the acquisition of a leading manufacturer of lactic acid and lactic acid derivatives in India. For more information about available options, please contact a member of our team.

### Connect with Corbion

The power of partnership that's realized by combining strengths can be your advantage in the highly competitive pharma industry. At Corbion, we're confident in what our experience, expertise, product quality and commitment to service excellence can contribute to your success. We take

pride in our ability to deliver optimal solutions to meet your specific needs, a hassle-free experience, and the peace of mind that comes from working with a trusted partner.

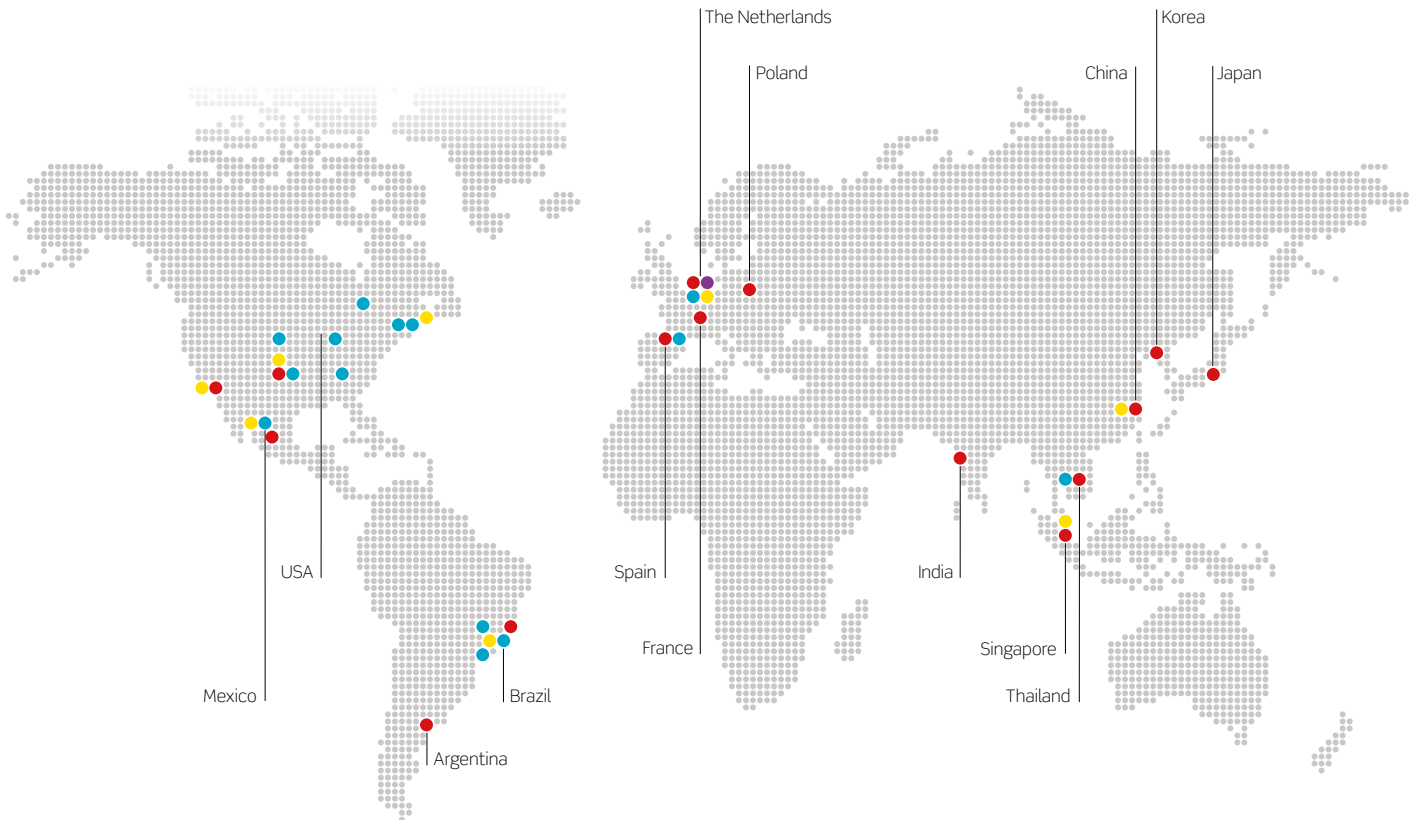


Learn more about the solutions Corbion has developed specifically for pharmaceutical applications. Get in touch with a member of our expert team today to discuss your goals and requirements, or to request a free sample.

[corbion.com/pharma](https://corbion.com/pharma)

# Let us know how we can help you

● Corbion Headquarters ● Corbion Production Location ● Corbion Sales Office ● Corbion Innovation Center



[corbion.com/contact](https://corbion.com/contact)

## Corbion in Pharma

For the pharmaceutical industry, Corbion offers Lactic Acid, Lactic Acid derivatives and gluconic acid based mineral salts. Corbion's pharma products are produced under cGMP guidelines and comply with the highest quality standards demanded by the pharmaceutical industry.

## About Corbion

Corbion is the global market leader in lactic acid, lactic acid derivatives, and a leading company in emulsifiers, functional enzyme blends, minerals, vitamins and algae ingredients. We develop sustainable ingredient solutions to improve the quality of life for people today and for future generations. For over 100 years, we have been uncompromising in our commitment to safety, quality, innovation and performance. Drawing on our deep application and product knowledge, we work side-by-side with customers to make our cutting edge technologies work for them. Our solutions help differentiate products in markets such as food, home & personal care, animal nutrition, pharmaceuticals, medical devices, and bioplastics.

Interested in solutions for pharmaceutical industry? [Go to corbion.com/pharma](https://corbion.com/pharma)