

Saltigo at CPhI Worldwide 2018, Madrid, Spain,
October 9 to 11, 2018, Stand 10B110

A great deal of expertise – for a great deal

- Exclusive synthesis for the fine chemical and life science industry
- Success through quality, experience and flexibility
- Broad technology portfolio and modern asset base
- Reliable, secure supply chains

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Leverkusen – A broad service package and many years of experience in the exclusive synthesis of intermediates and active ingredients, as well as an attractive range of specialty and fine chemicals characterize Saltigo GmbH, the Leverkusen, Germany based and globally active subsidiary of specialty chemicals company LANXESS: Saltigo will be exhibiting at CPhI Worldwide 2018, which will take place in the Spanish capital Madrid from October 9 to 11, 2018. “With our full-service offer, we preferably address companies in the life science industries and in all areas of fine chemistry,” explains Saltigo’s Marketing and Sales Manager Andreas Klein.

A solid basis for customer satisfaction

“We owe our success above all to our experience and to the high flexibility and quality of the services and products we offer. This is the key to the lasting satisfaction of our customers,” claims Klein. An internationally oriented raw materials procurement with planned and implemented multiple sourcing strategies coupled with a far-reaching backward integration of critical raw materials enables a high level of delivery reliability at attractive prices. “In the interest of our customers, we prefer to enter into long-term agreements with our suppliers because risky, volatile markets in particular require careful hedging,” explains Klein.

Experienced, well-trained employees at the integrated production sites in Leverkusen and Dormagen, Germany; a modern, highly automated production network; and a broad portfolio of technologies are decisive for expertise, productivity, and flexibility. Saltigo makes full use of its extensive process development capability to improve existing technical packages or optimize them

depending on the respective production volume, or, if necessary, to develop completely new reaction paths.

In the dynamically developing fields of synthesis chemistry and process technology, Saltigo's experts are at the cutting edge of technology. Continuous modernization and expansion of the production facilities ensure that this also applies to the production base. The company has invested millions of euros in this area alone in recent years. "Optimized synthesis routes increase product quality and yield, open up additional production capacities, and help to reduce costs. They also minimize waste and increase process safety. All this creates sustainable added value for our customers," explains Klein.

Hydrogenation – key steps in many syntheses

"Hydrogenation reactions are a good example of the expertise, versatility, and flexibility that we can offer our customers," explains Dr. Guido Giffels, Head of New Business Development at Saltigo. More than 100 years of experience in this field are documented in numerous commercial processes and patents. This reflects the great importance of such reactions in chemical synthesis.

Depending on the substrate and desired product, but also depending on the required production scale, it is first necessary to select a suitable process, optimum reaction conditions, and the appropriate system configuration. Transition metal-catalyzed reactions with hydrogen gas are a typical procedure. Some reactions take place at normal pressure and room temperature, but sometimes require up to 250 bar and up to 320 °C. These extreme conditions can also be realized at Saltigo on a commercial scale.

The application spectrum for pressure reactions ranges from the hydrogenation of aromatic nitro compounds and the hydrogenation of aromatic rings to the reduction of aldehydes, ketones, imines, nitriles, and compounds with carbon-carbon multiple bonds. It also includes reductive aminations, aminations with anhydrous ammonia, and alkylations with short-chain alkenes such as propene or butene. A wide variety of catalysts can be used. In addition to typical heterogeneous catalysts, such as Raney metals or supported platinum metals, homogeneous catalysts are also used – for example, combinations of ruthenium compounds and chiral bisphosphine ligands for enantioselective homogeneous

hydrogenation. Especially for asymmetric syntheses, so-called transfer hydrogenations – using formic acid or isopropanol – are also suitable.

Saltigo has a designated hydrogenation plant at its Leverkusen site with in-house storage capacities of up to 1,000 metric tons. The company's expertise in this reaction class is combined under one roof there. The plant is equipped with reactors made of stainless steel and Hastelloy C4. It also includes a high-pressure Hastelloy C4 autoclave with a capacity of five cubic meters designed for reaction pressures up to 250 bar and reaction temperatures up to 230 °C. The hydrogenation products are isolated and purified, for example, in the adjoining distillation plant or via crystallization and solids isolation in one of the Saltigo multipurpose plants at the Leverkusen site. These also offer additional hydrogenation capacity for reactions in acidic media, among other things. All plants are connecting by pipe to enable easy transfer of intermediates.

Saltigo also offers supplementary services, such as the selection of suitable catalysts based on its own database, as well analytical services for reaction and quality control, using a broad spectrum of methods. The company is well equipped for recovery of the often very valuable catalysts – metals and ligands – which can tap significant cost savings potential.

Detailed information on Saltigo's services is available online at www.saltigo.com.

Saltigo GmbH is one of the leading providers in the area of custom synthesis. The company, which is part of the specialty chemicals group LANXESS, belongs to the Advanced Intermediates segment, which earned revenues of EUR 1.970 billion in the financial year 2017. Saltigo, with corporate headquarters in Leverkusen and production facilities in Leverkusen and Dormagen, has about 1,200 employees worldwide.

Leverkusen, September 27, 2018
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Forward-looking statements

This press release contains certain forward-looking statements that are based on current assumptions and forecasts by the management of LANXESS AG. Various known and unknown risks, uncertainties and other factors could cause the company's actual results, financial situation, and development or performance to deviate significantly from the estimates provided here. The company accepts no obligation to update such forward-looking statements or to adjust them to future results or developments.

Note for editors:

All press releases from Saltigo and the associated photos can be found at <http://presse.lanxess.de/>.

Detailed information about the company is available on its website <http://www.saltigo.com>.
Information about LANXESS chemicals is available in our web magazine at <http://webmagazin.lanxess.de>.

Images



A high-pressure Hastelloy C4 autoclave with a capacity of five cubic meters designed for reaction pressures up to 250 bar and reaction temperatures up to 230 °C at Saltigo's designated hydrogenation plant at its Leverkusen site. Photo: Saltigo GmbH



The equipment of the new production line in the ZeTO can be flexibly connected via tube stations. Photo: Saltigo GmbH



The hydrogenation products are isolated and purified, for example, in the distillation plant connected by a pipe bridge or via crystallization and solids isolation in one of the Saltigo multipurpose plants at the Leverkusen site. The picture shows an eight cubic meter Hastelloy nutsche filter. Photo: Saltigo GmbH