



Discover the “Essence of Nature” with NATECO₂ - Your Experts in supercritical CO₂-Extraction



NATECO₂ is your expert, when it comes to Contract Manufacturing via supercritical CO₂, with a wide range of innovative technologies associated with this sustainable process.

In 2022, NATECO₂ celebrated its 60th anniversary - the company started as a young entrepreneur in the hops industry with a highly sophisticated process: Supercritical CO₂-extraction. Over the years, a steady technical development has taken place, which guarantees continuous progress of NATECO₂ and its business services. Customers within the food & beverage, cosmetics, supplements and pharmaceutical industry value the considerable advantages of scCO₂-extracted products, e.g. protective gas atmosphere, moderate conditions during processing and absence of organic or toxic solvents as well as oxygen.

As customers intensively focus on naturalness, quality and environmentally-friendly processes, the CO₂-technology strengthens its position as a “green” and sustainable process.

Different vessel sizes, ranging from 3L to multiple 4,000L units, along with adjustable

parameter options, offer full flexibility and an annual processing capacity of up to 20,000 tons.

Natural oils, fats, waxes and resins are the predominant ingredients obtained via scCO₂ but the extraction of lipophilic vitamins and pigments is also possible.

NATECO₂ is well experienced in extracting a



NATECO₂

**Extracting the
essence of nature**

wide range of products from R&D-stage to industrial scale, including but not limited to algae, industrial hemp, berries, spices & herbs, omega-3-fatty acids, flavours and other active compounds.

Powders, containing anti-inflammatory ingredients or antioxidants, can be generated in addition.

Complementing its services range is the process of defatting for all kinds of grains, seeds and nuts, featuring for example cocoa, coconut or saw palmetto. Compared to usual defatting processes, oil can be removed to a large extent, the product's shelf life is increased significantly and protein or carbohydrate levels automatically go up. Applying this method, precious protein powders with high protein levels, can be obtained. These are used in the sports, vegan or meat alternative industry.

CO₂-extraction also enables purification of raw materials – hence products can be deodorized or pesticides removed.

The biogenic CO₂ used for extraction is “Generally Recognized As Safe” (GRAS) and can be used for food and cosmetics without limitations – it is furthermore recovered and recycled during the process.



Besides its toll manufacturing services, NATECO₂ also provides contract R&D-services, including feasibility studies, assistance in product development or process optimization and trial runs on R&D or pilot scale.

Product quality and process control is guaranteed by an in-house Laboratory, which also acts as a Contract Laboratory for external customers and is equipped with state-of-the-art analytical devices. NATECO₂'s lab is currently in the process of being qualified and accredited, according to DIN ISO 17025. The main fields and tasks of analysis comprise content analytics of food, feed and cosmetics, content analytics of plant materials, analyses of residues and contaminants, method development and validation, as well as stability analyses.

The quality of a product however does not

only depend on proper extraction and a well-established process - handling of raw materials also has a tremendous influence on the effectiveness of extraction and therefore plays a decisive role in final product yield and quality. Raw materials and refined products have to be treated, according to their individual requirements, prior and upon extraction.

As a result, a variety of milling, grinding, sieving, crushing, pelletizing, standardization and storage possibilities are necessary and available at our different locations.

Current product finishing options include blending, diluting and filling.

Reflecting its high-quality standards, NATECO₂ is certified according to ISO 9001 / 14001 / 22000 (incl. HACCP), BIO/NOP and also offers Halal/ Kosher-certifications for certain products.

Implementation of a Counter-Current Column allows for refinement of enriched flavours and fragrances and removal of unwanted substances, e.g. off-flavours.

High-pressure spraying technology PGSS (Particles from Gas Saturated Solutions), via supercritical CO₂, was established to obtain tailored granulated powders, out of liquified substances and is especially advantageous for viscous materials. This method allows for new application options, due to size, morphology and composition of generated particles.

We are happy to provide consulting and more information on our CO₂-technologies and associated services.

Feel free to get in touch with us at **contact@nateco2.de** or visit our website at: **www.nateco2.de/en**

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