



WORLD-CLASS QUALITY ORGANIZATION

KD Nutra[®], as part of the KD Pharma Group, ensures that consumers always get **the very best in purity and innovation** in nutraceuticals by employing a number of multiple delivery methods to provide a finished product to the end user.

This level of excellence is consistent at all of our manufacturing and R&D facilities in **Germany, Norway, the United Kingdom and the United States.**

KD Nutra[®] begins with the extraction of natural oils that can be further purified and isolated via the **company's proprietary kd-pür[®] separation technologies.**

The customer can then choose to have KD Nutra[®] **encapsulate, bottle and package the product** in a format **ready for consumer purchase.**



THE ADVANTAGE OF KD-PÜR® OILS

kd-pür® oils utilizes the best lipids extraction technology and the best oil quality in the market, resulting in an unsurpassed quality you can trust.

Superior Technology. With the largest lipids technology portfolio in the industry, KD Nutra® can produce the most comprehensive selection of Omega-3 and lipid concentrates from natural oils, giving us the best positionability to select the most appropriate technology based on raw material characteristics & finish products output.

Our kd-pür® technology gently extracts and purifies Omega-3s and plant extracts, such as cannabinoids, in a pharmaceutical GMP certified facility. This advanced technology is capable of purifying highly sensitive Omega-3s without the use of excessive heat, chemical solvents (green technology) or oxygen. Purification without STRESS!



Best oil source quality. Our fish is wild-caught and from some of the most nutrient-rich waters in the world which is what leads to the fish having higher Omega-3 content. That fishery is unique because it is:



Nutrient dense. The Humboldt current delivers a unique set of nutrients and zooplankton to the fishery for the anchovy to feed from, which helps give them the highest Omega-3 content of any major fishery.

Well developed. The fishery and fish oil infrastructure is installed throughout the Peruvian and Chilean coastlines. This means that virtually none of the fish caught are wasted and raw materials are fresh when they are converted into oils.

Highly sustainable. At KD Nutra® every step of the process is purposefully created to minimize impact on the ecosystem. Raw materials are sourced from fisheries that adhere to rigorous global sustainability standards. Our oils are Friends of the Sea certified (FOS) and processed with a minimum waste. The biomass is surveyed twice per year by independent scientists who make quota recommendations free from industry and political pressures and these quotas are always adopted by the government.



Consistent and traceable. KD Pharma Group's manufacturing practices were specifically designed to meet stringent Active Pharmaceutical Ingredient (API) standards. It is this commitment to exceptionally high standards that has made KD Pharma Group the leading producer of highly purified API Omega-3 fatty acids. These stringent standards are applied to all kd-pür® oils, also to those produced under the KD Nutra® brand.

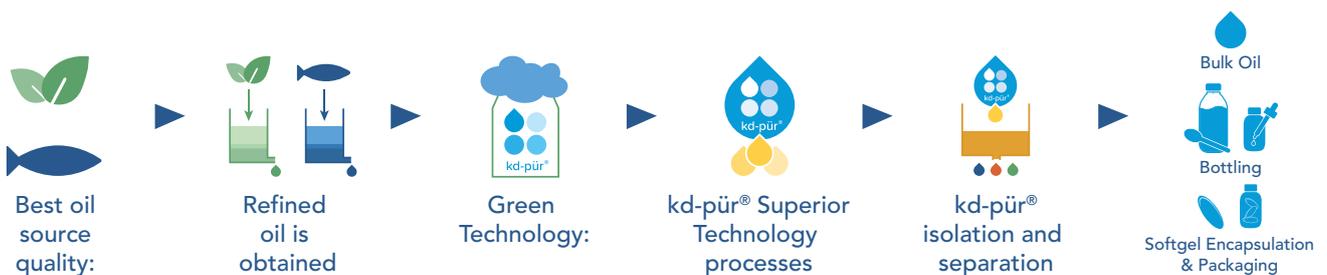
kd-pür® purified fish oil is constantly checked for quality to eliminate residues and loads contaminants that may result from the raw materials.

- Batch to batch consistency that delivers a consistent product specification every time.
- A manufacturing process that is 100% traceable, providing transparency at every step of the production cycle.

THE BEST OIL QUALITY AND TECHNOLOGY AT YOUR SERVICE



A very long way from Raw Material to the Final Product:



- Fish
- Plant

First steps to produce human-consumption quality oils

- Solvent-free
- No Heating Stress
- No Oxidation Stress

Superior Technology Tool-box (SPD, HPE, SMB, SFC)

Omegas (EPA/DHA/DPA) Plants (CBD)

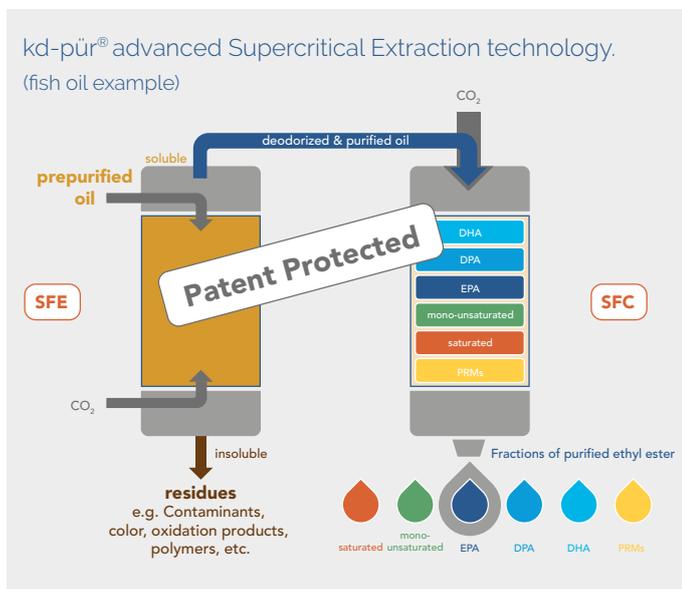
Final Product:
• 30 % - 99 % Nutrition-Grade
• 85 % - 99 % Pharma-Grade

ADVANCED KD-PÜR® TECHNOLOGY

At KD Nutra® we use multiple state-of-the-art purification technologies processes which are protected by numerous patents. These technologies allow for the production of Omega-3 fish and algae oils, among other lipids extracts, that is unsurpassed in quality and purity, and with concentrations as high as 99% of a single fatty acid or phytochemical.

The main technology groups are:

kd-pür® Supercritical Extraction Technology is a combination of Supercritical Fluid Extraction (SFE) and Supercritical Fluid Chromatography (SFC). This unique combination process delivers a superior quality of Omega-3 concentrates and plant extracts such as cannabinoids or standardized hops extracts.



The process starts with SFE, which involves using supercritical carbon dioxide (sCO₂) to gently extract ethyl esters from unwanted elements such as glycerides, free fatty acids, dyes, pollutants and cholesterol.

During SFE, Omega-3's oils are not exposed to excessive heating and never come in contact with oxygen. It is well known that high temperatures impacts quality of oils like Omega-3s and the elimination of oxygen, protects the active components from oxidation and the development of process contaminants. An additional benefit of CO₂ is that heavy metals and other impurities are insoluble in it, which allows for an extremely high level of purity to be achieved without the use of chemicals.

In the SFC process, the oil coming from the SFE process is passed through a chromatographic column which is packed with a highly selective separation material.

While passing through this column, the fatty acids get separated according to their size and degree of unsaturation. This allows the individual fractions, each enriched for with specific Omega-3's or phytochemicals, to leave the column at separated intervals.

Finally, the CO₂ is released removed from the oil, allowing for an exceptionally high level of purity for the Omega-3 concentrates and plant extracts.

Unlike some other extraction methods, with kd-pür® technology, no chemical solvents, water, sugar, saturated fatty acids, cholesterol or proteins can be found in the finished oil.





kd-pür® Enhanced Silver Technology is a further development of the kd-pür® technology, where ultra-high concentrations of EPA, DHA, DPA and other specific Omega-3 components can be achieved. This technology uses the supercritical carbon dioxide method and also includes a silverbased extraction process.

With this technology, natural oils can be extracted to previously unheard-of levels of purity. Ultra-high levels of Omega-3 such as EPA, DHA, DPA, Omega-6, Omega-7, Omega-9 are made into very pure concentrates. Impurities are minimized to extremely low levels.

kd-pür® Simulated Moving Bed Technology (SMB) is a highly engineered process for implementing chromatographic separation. It is used to separate one chemical compound or one class of chemical compounds from one or more other chemical compounds based on their geometry and has advantages over using simple (batch) HPLC chromatography.

The technology allows the production of large quantities of highly purified material at a continuous and high rate of production, and decreases solvent and energy requirements.

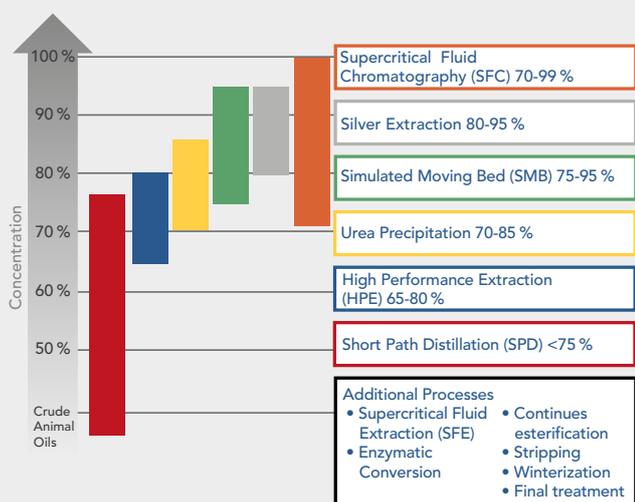
When combined with other KD Pharma technologies, SMB can produce extremely high concentrates of EPA, DHA, DPA and other specific Omega-3s. Additionally, this technology can be used for chiral separations of small molecule APIs.

kd-pür® BioHerbolysis® Extraction is an extraction process for plant-based material like hemp, hops or algae, that utilizes enzymes to break cell walls and extract valuable phytochemicals. The technology captures a greater quantity and distribution of phytochemicals than other extraction methods and is particularly suited towards fresh materials.

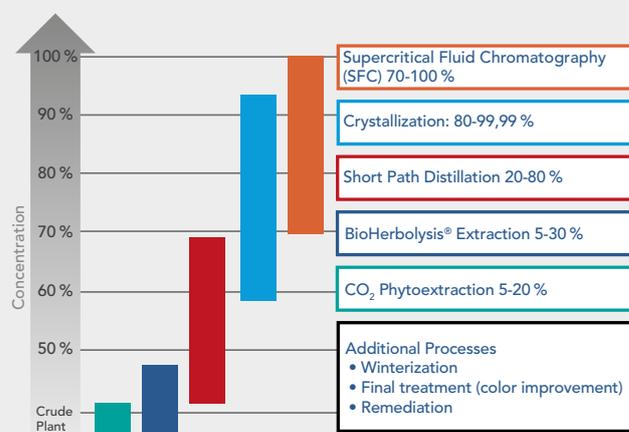
kd-pür® CO₂ Phytoextraction is a small batch supercritical CO₂ extraction particularly useful for plants with exceptionally high value phytochemicals. This process is gentle and uses no chemical solvents.

Purposeful combination of process to get to the optimal cost & quality

Omega-3 Separation Technologies



Plant Extraction Technologies



KD Pharma has the largest lipids technology portfolio in the industry.



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 **KD Pharma Group™**
Creating Health Solutions

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