Feed Grade Fish Oils
Cod Liver Oil – Cod Oil – Omega-3 Fish Oil – Salmon Oil
SINCE 1938
Established in 1938, LYSI hf. is one of the world’s largest producers of marine oils for human consumption and an original pioneer of fish oil production. Today, LYSI maintains a leadership position in its field, fuelled by expertise in manufacturing high-demand fish oil products from both Iceland’s fish stocks and imported crude fish oils from other parts of the world.

Although fish oil for human consumption is the main focus, LYSI also offers a range of feed grade fish oils of high quality.

The emphasis is on marine fish oils in their original form and our products comply with all EU regulations for feed application. The products meet official regulatory standards with regards to environmental contaminants, and are free of genetically modified materials (GMO) and components.

Our certified quality system meets the requirements of ISO 9001, GMP/API and BRC Global Standard for Food Safety.

LYSI’s collection system for cod liver raw material is very efficient, and there is a strong emphasis on maintaining effective sourcing connections and relations with crude oil suppliers. LYSI also runs its own primary rendering plant for cod liver from wild North-Atlantic cod.

The products are delivered in variable package sizes: 22 kg buckets, 55 & 190 kg drums, 900 kg IBCs, 21,000 kg tank containers and in flexi-tanks. Batch sizes normally range from 2–65 metric tons; however standard products can be made available in smaller batches if required.

LYSI offers a wide range of marine lipids with variable levels of omega-3 EPA/DHA fatty acids, such as Cod Liver Oil, Cod Oil, Omega-3 Fish Oil and Salmon Oil.

Not only are the vitamins essential, the benefits of the omega-3 fatty acids for pets and other animals are also unquestionable. These nutrients are needed by animals as well as humans. Icelandic farmers are very well aware of the wholesome properties of fish oil. They have been giving their cattle and sheep cod liver oil for decades in order to improve their general health and fertility. Many Icelandic horse owners give their horses fish oil during the active period from January to April when horses are kept indoors. Owners of horses, dogs and cats claim fish oil is good for the fur/skin of their pets and of help in alleviating skin problems.

Cod Liver Oil is obtained from cod and other codfishes. It is the traditional liver oil, rich in vitamins A and D and provides both the benefits of vitamins and the omega-3 fatty acids. Cod Liver Oil is fully refined with only a slight fishy odour.

Cod Oil is fish body oil, obtained from codfishes, such as blue whiting. Like Cod Liver Oil it is rich in omega-3 and vitamins A and D.

Omega-3 Fish Oil is made from anchovy and sardine. It has a very high level of omega-3, but does not contain vitamins.

Salmon Oil is derived from farmed salmon. It contains omega-3, but no vitamins.

The oils are refined under ideal conditions in LYSI’s refinery in Iceland thereby meeting European legislation for feed applications. Products can be tailor made according to customer requirements, by blending different oils and/or adding vitamins, antioxidants and flavour.

Depending on the requirements of the final product the feed oils may go through two or more of the following processing steps:

- **Neutralisation**
  - The oil is neutralised by removing free fatty acids using caustic soda.

- **Bleaching**
  - Pigments and contaminants are removed by the use of adsorbents such as bleaching earth and activated carbon.

- **Winterisation**
  - High melting triglycerides are removed by cooling the oil and filtering off the solid fraction.

- **Deodorisation**
  - Volatile components are removed with steam injection under high vacuum and elevated temperature.
LYSI offers a wide range of own-brand, as well as private label products in the omega-3 and related dietary supplements segment. If any modifications are required to meet individual market specifications, LYSI has the knowledge, capability and necessary networks to ensure such requirements are met.

Our consumer product portfolio encompasses:

- A variety of oils and other dietary supplements: omega-3 fish oil, cod liver oil, tuna oil, shark liver oil and different types of omega-3 concentrates
- Fully packaged consumer products in jars, bottles or blister packs
- Capsules in various sizes and shapes
- Liquid fish oils, natural and flavoured
- A selection of vitamins and antioxidants
- Support with packaging solutions

Amongst our customers are pharmaceutical companies, supermarket chains, health chains and wholesalers and distributors across the world.

### Consumer Products

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Cod Liver Oil</th>
<th>Cod Oil</th>
<th>Omega-3 Oil</th>
<th>Salmon Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw material-species used</td>
<td>Liver and fish oil from cod and codfishes</td>
<td>Fish oil from codfishes</td>
<td>Fish oil from mainly anchovy and sardine</td>
<td>Fish oil from farmed salmon</td>
</tr>
<tr>
<td>EPA mg/g</td>
<td>80</td>
<td>60</td>
<td>165</td>
<td>25</td>
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<tr>
<td>DHA mg/g</td>
<td>105</td>
<td>100</td>
<td>110</td>
<td>30</td>
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<tr>
<td>Omega-3 total mg/g</td>
<td>245</td>
<td>240</td>
<td>350</td>
<td>135</td>
</tr>
<tr>
<td>Vitamin A (IU/g)</td>
<td>1000</td>
<td>1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin D (IU/g)</td>
<td>100</td>
<td>100</td>
<td></td>
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</tbody>
</table>

### The Environment

Respect for the environment is a major factor in every aspect of LYSI’s operations and part of our quality ethos. At LYSI we aim always to:

- Recognise the importance of sustainable fisheries
- Use energy from renewable sources
- Guarantee effective waste management
- Maximise the utilisation of raw material

All manufacturing by-products are well managed and their sales are legally documented and fully traceable. All the production takes place in Iceland, a country renowned for its pure and unspoiled environment, fresh water and clean air.

**It’s Pure – It’s Clean – It’s Icelandic**

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