Why Liquefin™?

Minimized environmental impact
- Lower CO₂ emissions
- Lower inventory of hazardous material

Low operating costs
- The most efficient technology for LNG baseload from 1 to 5+ Mtpy
- Optimized with brazed aluminium plate fin heat exchangers

Low capital costs
- Compact and modular design of the cold box
- Balanced refrigeration power allowing identical drivers

Low construction risk
- Cold box manufactured off-site and pre-tested before delivery
- A single lift design for plug and play installation
- Fit for multi-train approach.

Brought to you by the leader in cryogenics

Air Liquide’s cryogenic technologies have been at the heart of the company for more than 110 years, including 50+ years of experience in LNG (pioneering base load in Algeria).

We offer:
- Operational know how, through vast experience our company has with 400 large scale plants.
- A full range of cryogenic expertise from design and manufacturing of the equipment to start-up and operation.
- Unique manufacturing competencies through our own world class manufacturing centers for lean cold box fabrication.
- Global sourcing capabilities, including purchasing, quality management, logistics.
- A complete range of services throughout the lifetime of the plant: spare parts, site services, production support, engineering services and long-term service agreements.
Two refrigeration cycles, each using dedicated mixed refrigerant.
- Optimized with plate fin heat exchangers, made of brazed aluminum.
- A compact cold box for natural gas pre-cooling, liquefaction and sub-cooling.

Proven Technology:
Brazed aluminium plate fin heat exchangers

A robust technology that delivers higher efficiency and lower costs compared to traditional coil-wound heat exchangers technology.

<table>
<thead>
<tr>
<th>Braided aluminium plate fin heat exchangers</th>
<th>Coil-wound heat exchangers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compactness  ++</td>
<td>--</td>
</tr>
<tr>
<td>Robustness  +</td>
<td>+</td>
</tr>
<tr>
<td>Cooling Surface  2000 m²/m³</td>
<td>150 m²/m³</td>
</tr>
<tr>
<td>Pressure Losses Low (enhancing efficiency)</td>
<td>High (increasing operating costs)</td>
</tr>
<tr>
<td>References  ++ LNG, Ethylene, Oxygen, CO ...</td>
<td>+ Mainly LNG</td>
</tr>
<tr>
<td>Competitiveness  ++</td>
<td>--</td>
</tr>
<tr>
<td>Suppliers  ++ About 10</td>
<td>-- 2 only</td>
</tr>
<tr>
<td>Lead Time  ++ About 10 Months</td>
<td>Typical &gt; 16 Months</td>
</tr>
</tbody>
</table>

Liquefin: the solution for minimizing site costs

Brazed Aluminium Heat Exchanger

Contact us
lng@airliquide.com

www.engineering-airliquide.com

Air Liquide
ENGINEERING & CONSTRUCTION

Mixed refrigerant cooling

Natural gas precooling

Natural gas liquefaction

25 to 50% smaller footprint

Liquefin™: a single and compact cold box