EDC®
Best environmental friendly synthetic base fluid for high performance drilling
EDC Synthetic fluids
Made for extreme conditions

When operating in the most extreme conditions, ranging from onshore to offshore HPHT, the purity of base fluids is a key factor in terms of drilling performance, operator’s safety and environmental impact. Based on over 50 years of experience and a unique patented process Total Special Fluids delivers highly refined, severely hydrotreated synthetic fluids with the most outstanding levels of purity in the market.

A patented production process

EDC fluids are produced in the US and in Europe

- OUDALLE: capacity 500 kT/year
- BAYPORT: capacity 240 kT/year
High purity performance

Chosen by leading operators in more than 40 countries around the world, Total’s Drilling Fluids have set the industry benchmark for high purity and performance. Eco Friendly and sea water biodegradable EDC® base fluids show the lowest aromatic content in the industry and therefore meet the OSPAR and US EPA requirement for synthetic consideration.

![Aromatics content in drilling base fluids](image)

![Benzene content in drilling base fluids](image)

Results measured and validated in independent laboratory
**Lower impact on environment**

- No classification according to GHS-UN (Global Harmonized System)
- Classified Readily Biodegradable according to OECD 306 guidelines (the more stringent test run in pure sea water)
- Not classified toxic for the environment
- Tests on three trophic levels (algae, invertebrate, fish) and sediment reworker are showing no impact at any working concentration
- Fulfilling OSPAR/HOCNF criteria

EDC drillings fluids have been awarded the Total Ecosolution label (Environmental Efficient Solution label) for their best efficiency in line with their lower impact on both human health and environment.

Process: comparison of RCR (Risk Characterization Ratio) on BTEX and each PAH recognized as having an environmental impact, in different environments (fresh water, marine water, fresh water sediment, marine water sediment, Terrestrial soil).

<table>
<thead>
<tr>
<th></th>
<th>EDC Products*</th>
<th>Hydrotreated Kerozene</th>
<th>GTL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Average or RCR ratios</td>
<td>1</td>
<td>100</td>
<td>900</td>
</tr>
</tbody>
</table>

Results validated by an independent expert firm according to ISO 14020 and ISO 14021 standards.

**Safer working conditions**

Not classified toxic for human health according to worldwide GHS
Beneficial for operators working on RIG: odorless and colorless

- Low Vapor Pressure
- Lowest Aromatic content leading to **no labeling element EUH066** concerning skin dryness or cracking as opposed to any competitors.
  - Skin irritation test OECD 404: not classified
  - Eye irritation test OECD 405: not classified

<table>
<thead>
<tr>
<th>GHS/CLP classification and labelling</th>
<th>EDC Products*</th>
<th>Hydrotreated Kerozene</th>
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</thead>
<tbody>
<tr>
<td>H304: May be fatal if swallowed and enters airways</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>EUH066: Repeated exposure may cause skin dryness</td>
<td>✗</td>
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The CLP hazard statement H304 relates to a risk of aspiration which is associated to a non-quantifiable hazard determined by kinematic viscosity.*: except EDC 170 SE linked to available classifications.
1. LABORATORY CONDITIONS
We tested EDC products in lab experiments close to the most severe pressure and temperature conditions that can be found in drilling operations.

Thermal Stability was tested at 150°C (302°F), 130 bars, for 24 hours. Then at 250°C (482°F), 200 bars for 24 hours.

No decomposition or change in characteristics of EDC base fluids was observed.

EDC base fluids can tackle any drilling conditions.

2. FIELD CONDITIONS
EDC Drilling Fluids’ extreme cleanliness makes them highly stable fluids ideal for High Pressure High Temperature drilling conditions.

Example of very demanding HPHT Field conditions as follow:
Max SG* > 2.10
Max Temperature > 200°C (392°F)
TMD * > 7000 m
TVD * > 5500 m
Max deviation > 50°

EDC products are used with great success around the world.

* SG : Specific Gravity  *TMD : True Measured Depth  *TVD : True Vertical Depth

Available Worldwide

With our production plants located in Europe and USA, as well as specific storages located in Asia, Africa, Middle East and South America, our EDC Fluids can be supplied to any drilling location around the world.
L'énergie est notre avenir, économisons-la !

wwwtotalspecialfluids.com