

The Special Fluids division of TotalEnergies: A global network with a local touch

A RECOGNISED GLOBAL LEADER

HEALTH AND SAFETY ARE THE CORNERSTONES OF OUR PROCESSES

Storage facilities **WORLDWIDE**



MULTI-SKILLED TEAMS of passionate, seasoned specialists

A WIDE SELECTION OF PRODUCTS FOR VARIOUS INDUSTRIAL APPLICATIONS



PLANTS in France and the US



3 LEADING-EDGE R&D CENTRES
two in France, one in Belgium, and a technical centre in India

People, machinery and the environment: why not choose a base oil that protects all three?



BERYLANE: superior properties, superior protection.

- ✓ Compliant with FDA 21 CFR 178.3620(b) and NSF-H1
- ✓ Compliant with the purity criteria of EU and US pharmacopeias
- ✓ Readily biodegradable according to OECD guidelines
- ✓ Low carbon footprint
- ✓ Not classified as a substance with acute or chronic toxicity
- ✓ Not classified as carcinogenic, mutagenic or reprotoxic (CMR)
- ✓ Not classified as flammable according to CLP/GHS and transportation regulations
- ✓ Not classified as a skin irritant or sensitiser

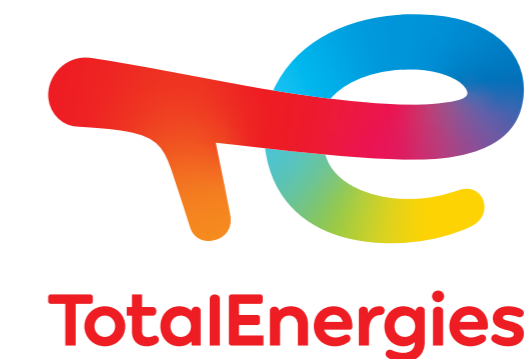
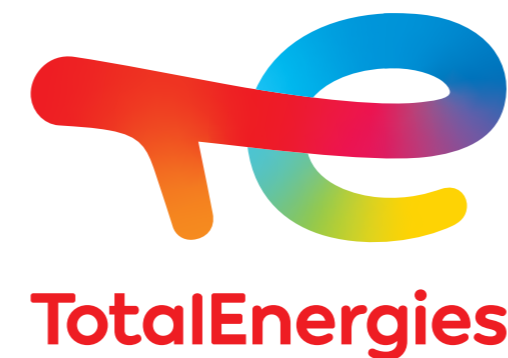
» HIGH-PURITY PRODUCTS FOR A LOW HSE IMPACT

- ✓ Non-corrosive due to extra low sulfur content
- ✓ Does not stain yellow alloys or aluminium
- ✓ No degradation such as deposits or unexpected increases in viscosity
- ✓ Excellent oxidation and thermal stability

» ROBUST PROTECTION FOR MACHINE TOOLS AND METAL WORKPIECES



BERYLANE
Purity and performance: the winning combination for **metalworking fluids and lubricants**



specialfluids.totalenergies.com

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BERYLANE and BERYLANE BIOLIFE ranges

BERYLANE

Designed from an innovative selection of feedstocks, our high-purity range of low-viscosity base oils for metalworking fluids are among the purest on the market. Available in a range of grades fine-tuned for metalworking processes, the BERYLANE range ticks all the boxes in terms of stability and performance. The range is fully compatible with all types of base oils and can also be used to adjust the viscosity of your formulations.

BERYLANE BIOLIFE

BERYLANE BIOLIFE is a new generation of eco-friendly base oils custom-formulated for manufacturers seeking to reduce their impact on the environment while maintaining a very high level of performance. Produced from **100% biobased feedstock**, the BERYLANE BIOLIFE range offers very specific properties made possible by its highly isoparaffinic composition. BERYLANE BIOLIFE can be used pure or mixed with BERYLANE or other base oils for improved sustainability.

Applications

REMOVAL FLUIDS: cutting, grinding, honing, lapping, drilling, turning, and spark erosion

FORMING FLUIDS: rolling, drawing, and stamping

PROTECTING FLUIDS: against corrosion and oxidation

LUBRICANT FORMULATIONS

Two ranges tailor-made for metalworking

- ▶ **PEAK PERFORMANCE:** We offer a range of grades, ensuring you always find the viscosity, cold properties, and solvency power to match the specific metalworking processes that you target.
- ▶ **PHARMACOPEIAS AND FOOD CONTACT COMPLIANCE:** Our HDA* technology produces highly refined, de-aromatised light base oils that are crystal clear and odourless. They comply with the purity criteria of the EU and US Pharmacopeias for white oils, as well as with the standards for the manufacture of food packaging materials, FDA 21 CFR 178.3620(b) and NSF-H1.
- ▶ **PRIME PROTECTION FOR MACHINE TOOLS:** Our products are non-corrosive and do not stain yellow alloys or aluminium, ensuring that tools and workpieces stay in top condition.
- ▶ **COST EFFECTIVE APPROACH:** Excellent oxidation and thermal stability boosts the service life of your lubricants and machinery, cutting costs and enhancing customer satisfaction.
- ▶ **SAFETY:** Low evaporation points minimise exposure to vapours and high flash points ensure safe use at higher temperatures.

*HydroDeAromatisation

A customer-centric approach

- ▶ **GLOBAL REACH:** Wherever in the world you operate, we are close by, with passionate international teams of experts on hand to provide expertise up to the task.
- ▶ **CUSTOMER CARE:** We build close-knit relationships with our customers over the long term and always take the time to listen attentively to their needs and anticipate emerging priorities.
- ▶ **EXTENSIVE SUPPORT:** We offer technical and regulatory support for all of our products.
- ▶ **FLEXIBILITY:** We adjust our packaging and transport methods based on your requirements.

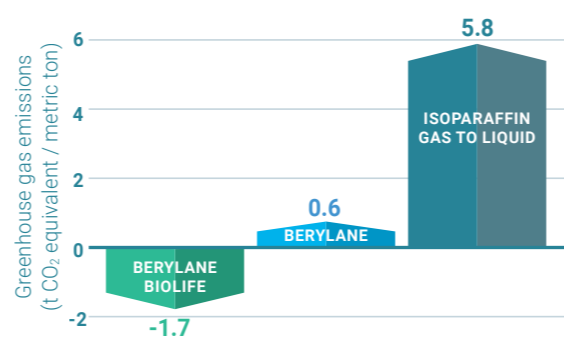


Unparalleled environmental, health and safety performance

The metalworking industry has to anticipate the global trend toward more environmentally friendly formulations, while protecting worker health and safety.

- ▶ **OUTSTANDING PURITY:** BERYLANE and BERYLANE BIOLIFE products are fully saturated hydrocarbons that have extra-low content of aromatics, in compliance with the most stringent international standards and HSE guidelines.
- ▶ **READILY BIODEGRADABLE:** In the event of accidental release, BERYLANE and BERYLANE BIOLIFE will not accumulate in the environment. By using our products, you may be able to claim partial or complete biodegradability, depending on the other substances in the formulation.
- ▶ **LOWER CARBON FOOT PRINT:** We integrate environmental and HSEQ considerations into every aspect of the product lifecycle, from manufacturing to transport.

GREENHOUSE GAS EMISSIONS COMPARISON



Results obtained from the TotalEnergies Fluids Cradle-to-gate LCA studies, peer reviewed in November 2018 and in May 2021 respectively. Study reports are available on demand.

“ BERYLANE and BERYLANE BIOLIFE are top of class for safety and environmental aspects. First of all, there is very low content of molecules such as benzene, toluene, xylene and PAH*. What is more, both product ranges are classified as readily biodegradable according to OECD guidelines. This is an exceptional result that makes BERYLANE BIOLIFE the only biodegradable isoparaffinic range on the market. And last but not least, thanks to the products' low carbon footprint compared with other technologies like GTL**, BERYLANE and BERYLANE BIOLIFE reduce the carbon footprint of the final formulation – one of the main objectives in industry today. ”

B. SWOBODA, Head of the Regulatory Affairs Department and Prospective/Research Innovation Manager The Special Fluids division of TotalEnergies.



*PAH: Polycyclic Aromatic Hydrocarbons **GTL: Gas to liquid

BERYLANE BIOLIFE label & certification



BERYLANE BIOLIFE has been awarded the TotalEnergies Ecosolutions* label, a TotalEnergies company standard developed in compliance with ISO 14020 and 14021 that recognises our most efficient solutions in terms of energy efficiency and environmental impact. <https://specialfluids.totalenergies.com/en/certifications/our-certifications-and-standards>

*The standard's methodology and principles have been verified via an audit by an independent firm.



The eco-friendly range has also earned ISCC Plus Certification, a well-respected environmental standard for bio-based approaches that verifies compliance with sustainability and traceability criteria throughout the product lifecycle. <https://specialfluids.totalenergies.com/en/iscc-plus-certificate>