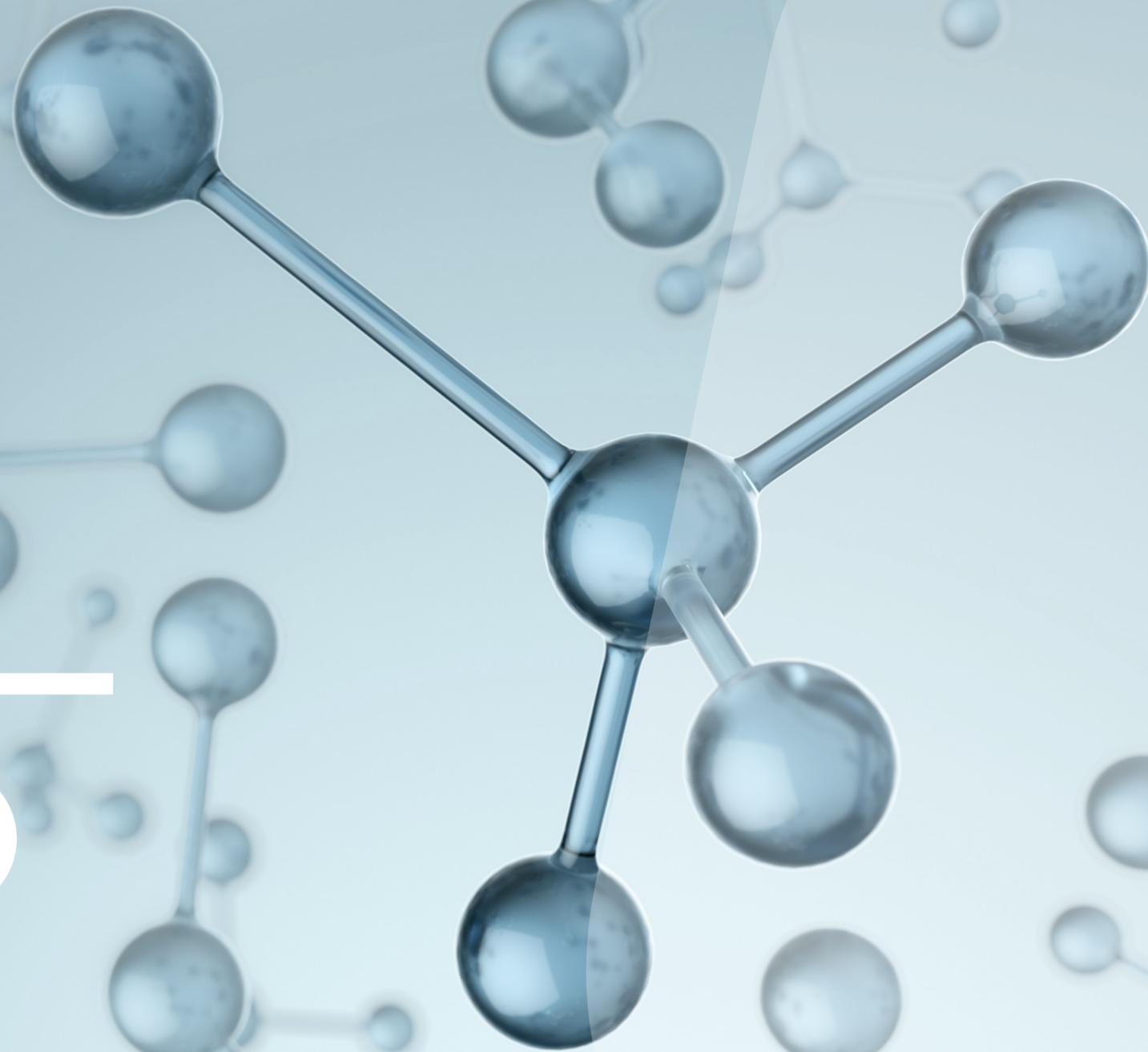
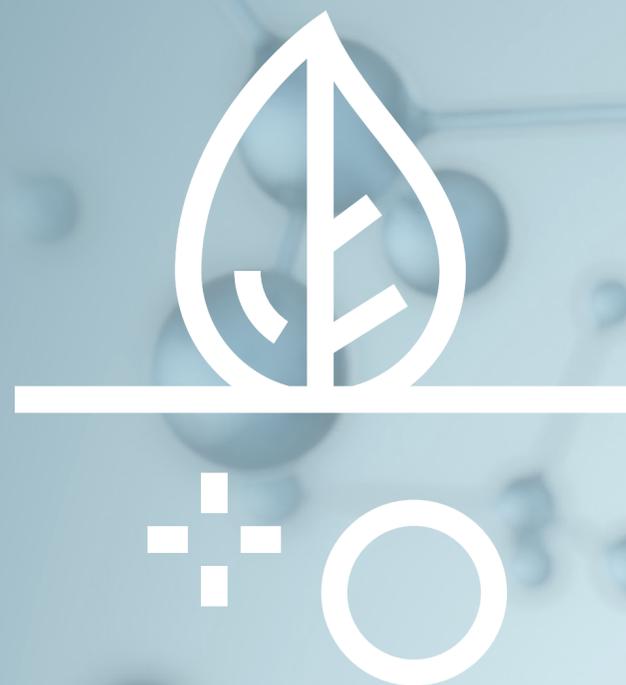




DETAL technology

Our most sustainable,
efficient and safe
technology



¿What is DETAL?

The **Detergent Alkylation process** (Detergent Alkylation) is a technology **for the production of LAB** (Linear Alkyl Benzene) that was developed and patented in the 1990s by Cepsa together with the North American company UOP (Universal Oil Products). **This technology was a pioneer in using the fixed-bed alkylation reaction and represented a major advance over previous technologies**, based on liquid catalysts (mainly with hydrofluoric acid, HF), with more complex operation and handling.



Technological Innovation

In our spirit of striving for excellence and continuous improvement, Cepsa has continued to work on its optimization ever since. **Detal technology is a commitment to innovation, and is currently the most modern and efficient process in the world of LAB production.** 1 out of every 4 tons of LAB consumed in the world is made from our technology; and since its development, more than 85% of the new capacity added in the world uses this technology.

DETAL

a commitment to sustainability

Detal Technology allow us to produce LAB in a more sustainable, efficient and safe way.

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|---|---|---|--|---|
|  <p>Optimizes the consumption of raw materials and water:</p> <p>-80.000 m³ of water per year*</p> |  <p>Reduce emissions and waste generation:</p> <p>-1.100 t of waste per year*</p> |  <p>Improves safety</p> |  <p>Simplifies the shutdown/startup process and optimizes production processes</p> |  <p>Improves the quality of the final product</p> |
|---|---|---|--|---|

*Conversion to Detal of the San Roque plant.



One of our latest developments has been the Detal Flex 2-Phenyl Technology, achieving today an even more flexible and versatile process, capable of producing different commercial grades of product (high and low 2-Phenyl) in the same facility. **This versatility allows us to adapt to the needs of each client.**



Awards

2021 Andalusia Environment Award



Processes Category Award in the Spanish Section of the European Business for the Environment



2019 Andalusia for the Development of Industry, from the Association of Industrial Engineers of Western Andalusia.



ICIS Surfactants Awards



What is LAB?

LAB (linear alkylbenzene) is the main raw material used in the production of **biodegradable detergents**. Through a process called sulfonation, it is transformed into LABSA which, after neutralization, become LAS, the most widely consumed surfactant in the world thanks to its versatility in formulations for all types of detergents (powders, liquids, capsules, bars and tablets).

Cepsa produces linear alkylbenzene (LAB) at its plants in Bécancour (Canada), Camaçari (Brazil) and Puente Mayorga (Spain), being the market leaders with the largest production capacity in the world. 12% of detergents worldwide are formulated with surfactants derived from our LAB.

