

# NX PTU™

Our solution  
for second  
generation lipids  
pre-treatment



**NEXTCHEM**

MAIRE Sustainable Technology Solutions

## About NEXTCHEM

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NEXTCHEM is MAIRE's company dedicated to Sustainable Technology Solutions. Leveraging our profound expertise in nitrogen, hydrogen, carbon capture, fuels, chemicals, and polymers, we deliver groundbreaking solutions and processes that fully enable the energy transition.

Building on the rich legacy of our group for over 70 years, we are dedicated to developing and offering technology solutions, processes, basic engineering designs, as well as proprietary equipment and catalysts, to drive global decarbonization efforts forward.

## Enlarging feedstock availability for sustainable fuels

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In the broad push for the biofuel consumption, like Sustainable Aviation Fuel (SAF) and Renewable Diesel (RD, also known as HVO), the proper pre-treatment is essential to remove the contaminants and impurities in the feedstock (waste oils and fats) suitable for the HEFA process.

## Our solution for second generation lipids pre-treatment

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NX PTU™ is an innovative solution developed to respond to the growing need of processing different and increasingly contaminated feedstocks.

The technology has been successfully tested with Used Cooking Oil (UCO), Palm Oil Mill Effluent (POME), Animal Fats (Tallow), and others, reaching the outlet target values usually required by HEFA catalyst of:

- Total metals < 10ppm
- Phosphorus < 3ppm

NX PTU™ does not use bleaching earths providing higher yields and lower OPEX, avoiding the production of solid effluents.

NEXTCHEM can offer NX PTU™ combined with NX SAF™ BIO for the production of SAF and RD or as stand alone technology.



# NX PTU™

A reliable and flexible  
solution for multiple  
feedstock

## Raw Materials

Used Cooking Oil  
(UCO)

Distillers' Corn Oil  
(DCO)

Palm oil residue and  
by-products (POME,  
SBEO, PFAD)

Animal Fats  
(Tallow)

Other feedstocks  
can be evaluated

## Your benefits

- 1** **Pre-treatment yield up to 99%**  
with minimal oil losses
- 2** **High flexibility**  
to a wide spectrum of different  
feedstocks
- 3** **Low OPEX**  
no use of bleaching earths, no  
solid waste disposal, and  
minimal water consumption
- 4** **Easy integration with HEFA**  
heat consumption for  
evaporation can be provided  
by HEFA process
- 5** **Test your specific feedstock**  
pilot pre-treatment unit  
available to validate customer  
samples

# Technical overview

The process removes contaminants and impurities with low oil losses and low operating expenses. To do so, the following steps are included:

- Clarification unit
- Weak acid degumming
- Strong acid reaction
- Water washing and hydrolysis

Water recovery section allows to minimize the overall water consumption and waste water treatment costs.

