

CASE STUDY

Chemical Applications

Upcycling used cooking oil into Biodiesel with the Cricketfilter® filtration system

AMAFILTER® SIGNIFICANTLY IMPROVES THE PLANT'S CRYSTALLISATION PROCESS INCREASING EFFICIENCY, REDUCING COSTS AND IMPROVING SUSTAINABILITY.





BACKGROUND

Our Netherlands-based client produces 125-million litres of second-generation biodiesel per year, made from oils and waste fats.

A key component of their process is the crystallisation process of the polyethylene within the oil. By crystallising the polyethylene until large crystals form, it becomes much easier to filter the impurities from the cooking oil and upcycle it into bio heating oil.

THE CHALLENGE

The used cooking oil (UCO) that needs to be filtered contains a large concentration of polyethylene, including bottle caps and plastic bottle chips. Although the bulk of the larger polyethylene parts are filtered out before the used cooking oil is processed, small pieces make it into the reactor and the filtered biodiesel.

This can cause problems for the end-user, including the clogging of burners.

THE SOLUTION

Amafilter® provided expertise and equipment to update and fix the clients' complete system, including upgrading the parts we did not supply, like the equipment for crystallising the polyethylene in the used cooking oil.

The Cricketfilter® significantly improved the client's crystallisation process by filtering out the small parts of polyethylene previously causing issues for the end user. With the addition of the Cricketfilter® only pure oil now makes it into the reactor.

THE RESULT

With Amafilter's filtration expertise, the client's end product improved dramatically.

Before Amafilter's intervention, the client had to store a large amount of used cooking oil contaminated with polyethylene. With the installation of the Cricketfilter®, the client can now process all their contaminated cooking oil into pure biodiesel heating oil.

This means they no longer have an unusable stream of cooking oil, making the plant more efficient, cost-effective and ultimately more profitable.



OUR PRODUCT

The Cricketfilter® features and benefits:

- Up to 40% larger filtration area than traditional pulse tube filter systems.
- Large filtration area within a small footprint.
- Hermetically closed system and can be fully automated.
- Suitable for direct cloth filtration or precoat/body-aid filtration.
- High filtrate quality.
- The Cricketfilter® is simple to clean. It uses air or gas pulses for cleaning the elements section by section, without requiring a vibrator.
- Low maintenance.
- Suitable for a wide range of applications.
- The Cricketfilter® can be used with filter cloths of various pore sizes and materials. This reduces and at times eliminates the amount of extrapre-coating needed, making filtration more economical.
- Cricketfilter® automation. It is possible to automate, therefore ensuring low necessary maintenance.

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