



SOLVENT-FREE IN 2030?



„We are working towards production processes without harmful solvents.“

•• Jeroen de Jong - Manager QHSE



„If you don't set goals, nothing will happen.“

•• Mieke Sibeijn - R&D Manager

•• CARBOGEN AMCIS in Veenendaal, The Netherlands

CARBOGEN AMCIS B.V. is active in the manufacturing, marketing & sales and distribution of Vitamin D analogs, Vitamin D2, Cholesterol and Lanolin derivatives. These products are used in pharmaceuticals, cosmetics, (shrimp) feed, and industrial applications. A portfolio of Contract Research & Manufacturing Services (CRAMS) complements their activities.

•• GOAL: WORKING WITHOUT SOLVENTS IN 2030

How desirable it would be to replace the fire hazardous solvents with a less risky and sustainable alternative during the chemical manufacturing process. It would solve many security issues. The benefits may be clear, but how feasible is it to work without chemical solvents? Utopia or a unique breakthrough?

Jeroen: „We would rather exclude substances like ethanol, acetone and heptane from our production processes. Unfortunately, today, that is not possible. At the moment we only use organic solvents and we are working towards producing without harmful solvents and completely waste free in 2030.“

Mieke: „At first sight, producing cholesterol from wool grease without organic solvents seems to be impossible. We also have to keep in mind that the alternatives should be less harmful than the currently used solvents. Nevertheless, if you don't set ambitious goals, nothing will happen. I am convinced that it is possible, if not for the entire process, then at least for a part of it.“

Jeroen: „And if it doesn't work? Then we should also explain why it does not work. We are not going to exchange one problem for another problem. For example, we could already use supercritical CO₂ as an industrial solvent to replace heptane. But then we will consume a lot more electricity, which is also not sustainable. And one of the biggest challenges is to continue to deliver the same quality which we are committed to do at CARBOGEN AMCIS.“

Mieke: „From my perspective it is very interesting to be involved in this. First I went back to the basics of the process: what type of reactions and separations are required. Then I started thinking about ways how to achieve this. We contacted people from various fields for brainstorming about the topic. We challenge students, and discuss the topic in our network, such as the Institute for Sustainable Processing (ISPT) and the Dutch separation technologists network NL-GUTS. I also did a literature search by Igor AI from Findest to check for other alternatives. As soon as we have an alternative process concept, we start testing in a unique pilot installation.“

Jeroen: „After that, there will be a range of designs and calculations. What does it mean if we use a replacement solvent on our scale?

Microreactors are now available on a small scale. Wool grease, which is processed at the tonnage level, does not run through it. And then the question arises: are we going to replace the process at once or let it run out of risk considerations first? In short: we have a long way to go, but we believe in it!“



CARBOGEN AMCIS Veenendaal

Did you know that our site in Veenendaal...

- ...was built in 1948 as a Cholesterol production plant and has more than 70 years of experience in the development, production and distribution of cholesterol, lanolin derivatives and Vitamin D analogs?
- ...is cGMP, ISO 9001 & 14001, GMP+ and FAMI-QS certified?
- ...sources their own raw materials and is in full control of the complete supply chain?
- ...among other Contract Research & Manufacturing Services (CRAMS), offers photochemical (UV) reactions and has highly potent production capabilities?
- ...ships worldwide and provides a wide range of markets with their products (e.g. pharmaceutical, food, feed, cosmetic, veterinary market)?

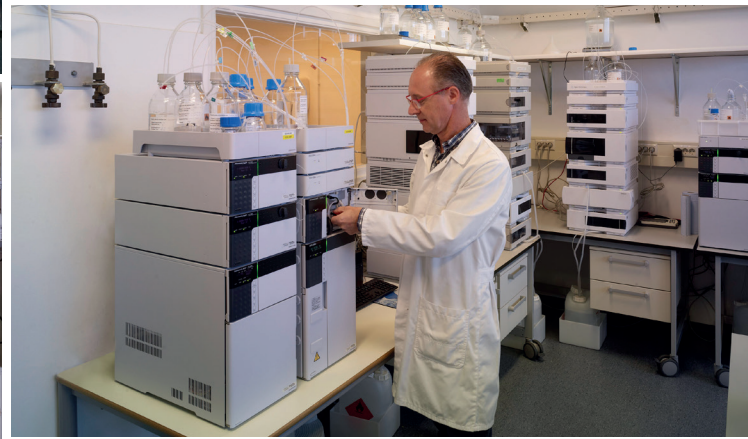
CARBOGEN AMCIS in Veenendaal, The Netherlands



CARBOGEN
AMCIS
A Dishman Group Company



CARBOGEN AMCIS Veenendaal



For more information about CARBOGEN AMCIS, visit www.carbogen-amcis.com

BRINGING
YOUR
SCIENCE
TO LIFE

April, 2019

www.carbogen-amcis.com