

Quality testing: Nutriswiss tests oil in BINDER vacuum drying chamber



Switzerland is home to three refineries for cooking oils, one of which is run by Nutriswiss in the town of Lyss. The company is a leading manufacturer of edible fats and oils, whose customers include some of the largest food producers in Switzerland and the world. Dr. Mario Lehmann is the company's lab director and he relies on a BINDER vacuum drying chamber for his work in the lab. Anyone visiting Nutriswiss finds themselves confronted with a refinery full of large containers, towers, and countless pipelines



› Even lab director Mario Lehmann has a weakness for cocoa butter. Instead of spitting out his sample, he prefers to savor it.

that are almost impossible to tell apart. And indeed it would be impossible if it weren't for the savvy lab director Mario Lehmann. He leads us straight to the lab, which contains a huge number of fat and oil samples – including his own personal favorite unrefined cocoa butter, which smells heavenly and tastes even better.

The majority of oils that Lehmann tastes on a day-to-day basis tend to be spat straight back out again, just like you would when tasting wine. The only time he makes an exception is with cocoa butter, as he explains with a smile. In fact, none of the oils that are processed at Nutriswiss should taste of anything – they are tasteless by the time they are delivered. That is the goal.

However, the method used to process the oil can also lead to process contamination – in other words, the formation of 3-MCPD and glycidol, small molecules. Even the smallest trace of these could have a harmful

Remit

- Validation at 80°C
- Gentle vaporization of solvents with high boiling points in a pump
- Suitable for tests involving food
- Explosion-proof
- Suitable for permanent operation

BINDER solutions

- Temperature range: ambient temperature of +15°C to 200°C
- ATEX conformity for unit interior: Ex II 3/-G Ex h IIB T1-T3 Gc X
- APT.line™ preheating chamber technology
- Controller with time-segment and real-time programming
- 2 aluminum expansion racks
- Inert gas connection
- Shatterproof, spring-mounted safety glass panel
- Pressurized instrument panel with compressed air connection
- Pressure control device for heating activated < 125 mbar
- Flame protection gasket

effect on our health. It is the lab director's job to prove how many of these substances are contained in the final product. After all, the oils are used to produce baby food. Until very recently, Mario Lehmann had outsourced this analysis to external providers – however, this stopped making economical sense and, above all, took too long.

This is how the company Nutriswiss came across BINDER. They then ordered a vacuum drying chamber, which is now serving them well. Mario Lehmann is impressed with how well the first validation of the 3-MCPD method went thanks to the chamber from Tuttlingen: “We added 3-MCPD dissolved in toluene to some olive oil and stored the mixture in our chamber at 80°C and 400 mbar overnight. The next day we were able to verify that the toluene, which has a high boiling point, had been completely volatilized and the 3-MCPD was still in the oil” explains Mario Lehmann. He goes on to say that “We were unable to achieve this result with conventional rotary evaporators, which meant that we weren't able to make any headway with validating the method.” Now that the validation is successfully complete, it is now possible to prove that the oil that Nutriswiss supplies for baby food is of a high standard. The drying chamber is essential for further validation processes



› Lab director Mario Lehmann tests the quality of a wide range of oils and ensures they are tasteless before delivery.

Our vacuum drying chamber runs constantly and is reliable. We use it to conduct a wide range of tests. It is reliable and explosion-proof.

says lab director Mario Lehmann, Nutriswiss



› André Roger, Alexia Mohler and Mario Lehmann (from left) work with a BINDER vacuum drying chamber and are very happy with it.

at Nutriswiss. Lehmann has already used the vacuum drying chamber to conduct an aging test with an aluminum bottle. The aim of this process was to detect whether the coating inside the bottle would affect the oil inside it. To perform the test, he stored the bottle in the BINDER chamber at 80°C for four weeks. “Our vacuum drying chamber runs constantly and is reliable. We use it to conduct a wide range of tests. It is reliable and explosion-proof.”

Advantages of vacuum drying chambers from the VDL series

- Fast, gentle drying
- Direct heat transfer through large thermal conducting plates
- Safe work thanks to proven safety concept
- Coordinated complete modular system with vacuum pump and module



› VDL model

Further models are available here › go2binder.com/en-vacuum-drying-chambers



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