SMELLING OF ROSES: TREATMENT OF WASTEWATER FROM AROMA PRODUCTION

Compact wastewater treatment technology installed in an EnviModul

Whether in food and drink, cosmetic products, cleaning products or perfumes – consumers encounter International Flavors & Fragrances (IFF) products everywhere. The company, with its headquarters in New York, is one of the world's leading producers of fragrances and flavourings for industrial clients. IFF uses may different basic substances in the production of their products, for example highly-concentrated oils. When the stainless steel tanks and pipes are cleaned after production, a trace of these substances end up in the wastewater – this is obvious from the smell. Therefore this mixture must first be treated before it can be discharged into the public sewers. Otherwise it can overstep legal thresholds and heavy polluter penalty levies may be applied. For this treatment, IFF's fragrance production location in Tilburg in the Netherlands has relied for some years on a combination of a grease separator and an active charcoal plant. "But the operating costs were very high", said Rob de Hoog, Project Engineer at IFF. "That is why we were looking for a new, cheaper, total solution, which we could use to eliminate certain organic substances which cannot be discharged at all, and at the same time to reduce the chemical oxygen demand (COD) by around 70 percent."

Project Data

Application	Production of fragrances and flavours
Wastewater volume	150 m³/day (peak level 70 m³/hour)
Discharge	Indirect discharge
Targets	eliminate organic substances, reduce COB load by 70 per cent
Plant technology	an EnviModul including the main components of a Flomar® HF 20 flotation tank, grease separator type HAB, buffer tank

A flexible modular system provided the solution

The choice was EnviModul from EnviroChemie. "This is a flexible modular system for decentralised treatment of process and wastewater, which we can adapt to the specific customer requirements", says Sicco Hilarius, Sales Manager at EnviroChemie in the Netherlands. For IFF this means an HAB type grease separator and the Flomar® HF 20 flotation plant. The elements are housed in a twelve metre long steel module. The benefit: no dedicated building had to be built for wastewater treatment. The system is extremely flexible, so the capacity can easily be expanded by additional modules and – if necessary – the module can also be moved to another location quite easily. "Those were also important aspects for us, because we do not have a lot of space on our site and we

do not know if and when we might expand our production. With EnviModul we can retain our flexibility – if necessary we can just move the water treatment to another spot", says Hoog.

The right combination

The EnviModul plant was manufactured and accepted for operation by IFF in Rossdorf. Since June 2013 it has been in use in the aroma production site in Tilburg. Up to 150 m³ of wastewater is created each day there. Because the wastewater inflow and its composition are not regular, and when cleaning is under way it can even rise to 70 m³ per hour, a 50 m^3 buffer storage tank has been installed upstream of the actual treatment. "The wastewater is collected there initially. That way we can ensure that the input to the plant is as constant as possible – both with an eye on the quantity as also in relation to the proportions of its contents", Hilarius explains. From the buffer tank the wastewater then flows into the grease separator. There the oils rise to the surface, thanks to the difference in gravity, and are skimmed off and collected. The pre-cleaned wastewater is then fed into the high performance flotation process. Here the plant uses a computer controlled programme to dose the wastewater with so-called flocculants, which bind the impurities into flakes. These are then floated to the surface using micro-bubbles and removed. After this, IFF can discharge the wastewater into the sewer leading to the public treatment plant – totally odourless.

The plant can be expanded

In future IFF could expand the plant further. The company is currently testing another EnviModul which could cut the costs of disposal of the sludge which is created during the water treatment by around 80 per cent.

EnviModul – a flexible system

EnviModul system solutions are modular plants for industrial water treatment, pre-treatment and wastewater treatment. They can be created more quickly, flexibly and cheaply than classic plant solutions. In addition they are expandable and can be moved to a different site.

Benefits

- Single source: EnviModul offers a full solution for the entire treatment process.
- Rapid installation: Modules are manufactured in Rossdorf and assembled locally.
- Cost savings: No dedicated building required.
- Individual: Modules are adapted to customer requirements.
- Flexible: The unit can easily be expanded or moved to a different location at any time.
- Made in Germany: Design and quality production carried out in Rossdorf

Very happy with the installed EnviModul technology for wastewater treatment, Hans Ides, Senior Advisor & Support Engineer Fragrance Operations and Rob de Hoog, Project Engineer at IFF and Sicco Hilarius, Sales Manager Benelux at EnviroChemie (from left)