HEIN

CHEMICAL ENGINEERING

Products for industrial wastewater treatment

WASTEWATER FROM OLIVE OIL PRODUCTION

Task:
Treatment of wastewater from olive oil production

Olive oil product

The production of olive oil results in three main elements:
olive oil, pomace and wastewater, which consists of the water from the olives and from cleaning the fruit.

It is difficult to break down the wastewater in biological treatment plants. The high oxygen depletion presents an environmental problem, since spreading the untreated fruit water on agricultural land causes the soil to become impermeable to water. As a result, the soil also becomes less fertile. Every year, more than 30 million cubic meters of such wastewater are produced worldwide (source Wikipedia).

The Hein-Chemie solution: VernEx P liquid

The **Hein-Chemie** process is ideal for treating the wastewater from olive oil production.

The liquid additive is added to the olive oil wastewater in a wastewater treatment plant at a concentration of 0.1%. It causes the solid and liquid components to separate and reduces oxygen depletion in the wastewater treatment plant in a fast, reliable and environmentally friendly manner without the use of chemical additives.

The process is:
- purely plant-based, organic
- biodegradable
- not hazardous
- not subject to labeling

Treatment of wastewater from olive oil production

Wastewater drainage

Untreated wastewater

On the one hand, the production process yields the extracted oil; on the other, the aqueous phase produces the polluting fruit water, the wastewater.
To treat this wastewater **Hein-Chemie** uses plant-based, biodegradable products and no harsh chemicals or hazardous substances.

After adding our liquid, the plant-based product VernEx P, the wastewater reacts immediately with flocculation and contaminant separation, followed by filtration.

The result

The filtered water contains about 90 % less contaminants. This means that it can be recycled as service water and used without hesitation for watering plants, such as olive trees.

The treatment also eliminates the soil's impermeability to water.

Professional wastewater treatment results in significant water savings.

Wastewater analysis

Measuring the pH value

RESULTS FROM THE TREATMENT OF WASTEWATER FROM OLIVE OIL PRODUCTION IN A 3-PHASE PRODUCTION WITH VERNEX P LIQUID

				(o)-sample 3-phase	Filtrate (3-phase) (2)(Vern-Ex P2m 800)
Parameter	**Method**	**LOD**	**Unit**	**V1923996**	**V1923997**
pH value (20°C)	DIN EN ISO 10523-C5:2012-04		-	5.3	4.9
SAC 620 nm	DIN EN ISO 7887:1994-12(C1)	0.05	1/m	1.5	0.31
SAC 436 nm	DIN EN ISO 7887:1994-12(C1)	0.05	1/m	15	1.3
SAC 526 nm	DIN EN ISO 7887:1994-12(C1)	0.05	1/m	4.3	0.59
Total content of dissolved solids	DIN 38409-1:1987-1	20	mg/L	4800	1200
Ammonium	DIN EN ISO 11732:2005-05 (E23)	0.01	mg/L	0.06	< 0.010
Total CSB	DIN 38409-H41:1980-12	15	mg/L	30000	3300

SAC: spectral absorption coefficient

The result: The CSB value could be reduced by 90 %; the wastewater can therefore be reused as service water.

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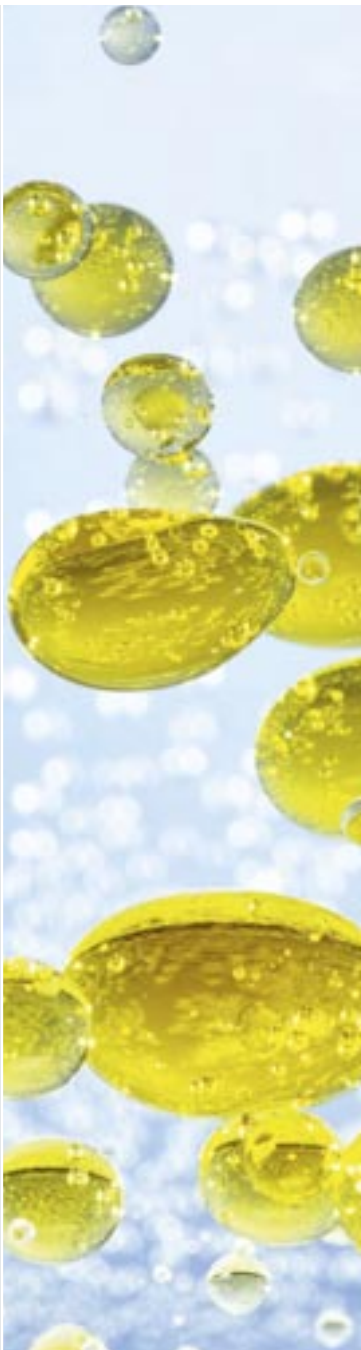

Wastewater treatment plant

The untreated wastewater is collected and mixed in a reactor.
Our VernEx P liquid product is then added. The reaction starts immediately and separates the treated wastewater into solid and liquid components.
The sludge then undergoes high efficiency dewatering.

Single-stage wastewater treatment system

Two-stage wastewater treatment system

Flotation tank

Separation of the flocculate sludge using VernEx P and aeration

Wastewater treated with VernEx P. Sludge floats

Sludge on the vacuum - belt filter

A selection of our specialty products

Our processes reduce contaminants to such an extent that limit values can be met and the environment is no longer harmed.

Of course, we would be happy to meet with you in advance for a consultation and analyze and evaluate your wastewater. We can also provide analytical support.

POWDER OR GRANULATE AS AN ALTERNATIVE FOR DECOLORIZATION

1. MONTALKAL CHROM-EX POWDER

Concentration as powder, approx. 500 g/m³.
No secondary treatment necessary.
Reduces chromium and decolorizes

2. QUICK FLOCK C31 POWDER

Concentration as powder, approx. 500 g/m³.
Decolorizes during mixing multiple contaminants.

LIQUID PRODUCTS

1. LIQUI CRACK A0 LIQUID

Pretesting in lab advisable.
Added dropwise in beaker until color changes.
Upscaling to plant size.
Breaks down emulsion.
Absolute clear phase is possible.

2. MONTALKAL 1007 LIQUID

High inside surface.
Strong decolorization due to absorption.
Practical as additive before **Liqui Crack A0.**

3. LIQUI FLOCK LF 05 LIQUID

The specialty product for decolorization.
Combination product.
Average concentration of 0.2 – 0.8 l/m³.
pH should be above 7.
Highly reducing product.
Can be combined with Montalkal 1007 to produce a stronger effect.

OUR DISTRIBUTION: EUROPE AND ASIA

Hein-Chemie, with operations in Europe and Asia, is based in the Upper Bavarian city of Eching, just a few minutes north of Munich by car.

Please contact us. Give us your problem with wastewater treatment – and we'll develop the best and most economical solution for you!