



# High-performance ethanol recovery from winterized Cannabis extract

Category: Rotary Evaporators  
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heidolph  
Made in Germany



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### Recovery of ethanol for re-use

Ethanol is one of the most preferred solvents for extraction and winterization processes. The main reason is the non-toxicity and easy handling compared to other methods and solvents. Since it is, mostly due to taxes, one of the more expensive solvents, recycling and re-use of the ethanol is very important to minimize production costs. This whitepaper shows how the high-performance recovery ethanol of winterized Cannabis extract was carried out with Heidolph's Hei-VAP HBX 24/7 package.

### Objective: High-performance solvent recovery

Ethanol that has been recovered from Cannabis extract can be re-used for the extraction and winterization processes for several times. The daily throughput of a manual evaporator is limited by many factors: the evaporation flask capacity, performance fluctuations, heating and cooling times, working shifts. For the performant throughput of large amounts a solution that rules out the named factors is required.

### The most efficient solution

Many manufacturers try to meet this challenge to deal with a bigger output by having technicians work in shifts to care for the refill of the evaporators, buying huge setups with larger evaporation flask capacities or several manual evaporators. Huge evaporators take away a lot of space and get more difficult to handle with increasing size. Also, running a manual evaporator for 24 hours, seven days a week requires running a three shift operation, including the wages of the technicians needed to ensure performance. These factors have to be taken into account when a higher output requires a solution.

With the Hei-VAP HBX 24/7 package, Heidolph offers a high-performance system solution that can increase efficiency and costs and does not take up more space than a manual evaporator. The automatic module Distimatic takes care of the automatic refill of the evaporation flask as well as the automatic drainage of the distillate and residue, therefore modifying a manual evaporator into a high-performance machine with a daily throughput up to 290 l per day with a distillation rate of up to 12 l ethanol per hour.



**Hei-VAP HBX 24/7 Package**  
Hei-VAP Industrial HBX A1  
with glassware A1 Distimatic



**Method:**  
**Successful high-performance recovery of ethanol with 12 l/h**

The Heidolph Hei-VAP HBX 24/7 package was used to recover the ethanol from winterized Cannabis extract. The extract content was 1%. The goal was to achieve a distillation rate of 12 liters of ethanol per hour, allowing that 290 liter mixture can be processed within one day. Therefore, the recirculating chiller was set to 5 °C, the heating bath was pre-heated to 60 °C, the rotation speed set to 130 rpm and the vacuum value set to 75 mbar. To achieve the maximum distillation rate,

the automatic module Distimatic was programmed to TIME mode. The FILL / EVAP ratio was set to 1:5 and about 500 ml of mixture were introduced with each STEP. At the end of each STEP 5 ml clear and golden colored Cannabis extract remained as residue in the rotation flask. To reach a final amount of 5 liters of solvent-free Cannabis extract the number of STEPS was set to 1000.

Like that every day 290 liters of ethanol/Cannabis extract mixture could be processed, yielding 2,9 liters of Cannabis extract daily. This means a throughput of 2030 liter mixture, yielding 20,3 liters of Cannabis extract in 24/7 use of the evaporator.

**Conclusion:**  
**Heidolph meets the challenge**

This example shows that Heidolph products enable high-performance ethanol recovery for a maximum daily throughput without the need of acquiring more employees or space-consuming manual solutions.

\*The Hei-VAP HBX 24/7 package is no longer available and has been replaced by the Hei-VAP HBX Pro 24/7 package.

- AUTOMATED UNLIMITED DISTILLATION 24/7**
- RECOVER UP TO 290 LITERS OF ETHANOL PER DAY**
- 99,9% PURE CANNABIS OIL**
- UNCOMPLICATED & BEST PERFORMANCE**

**HEI-VAP HBX 24/7 PACKAGE**

**Hei-Volume Distimatic**  
 Automatic Module



**Hei-VAP Industrial**  
 Large Scale Evaporator



**Rotovac 20**  
 Vacuum Pump



**Hei-CHILL 5000**  
 Chiller

**Tubing Set Industrial**  
 for vacuum and chiller connection





For any technical questions, application support etc. please contact us under:

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