

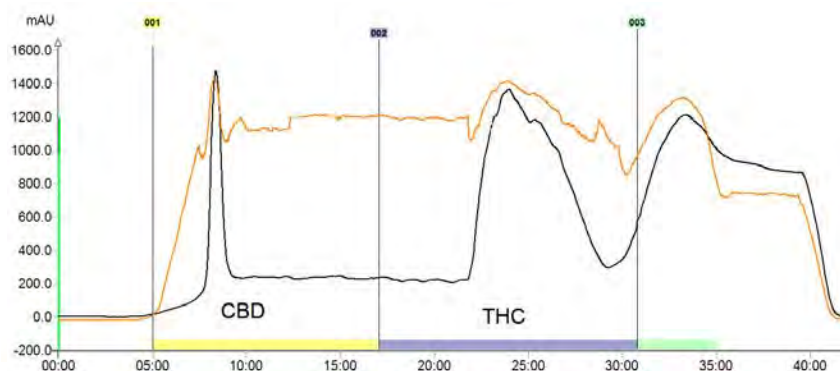
CBD Purification



3.1 - 12.6 kg Per Day

CBD purification is achieved using reverse phase flash chromatography. The bench-top unit supports this technique with ease and simplicity. The large touch screen interface displays all operating parameters of the method in progress. A UV diode array detects the cannabinoids which are collected in 1 liter flasks or diverted to high capacity carboys with a funnel rack.

In this example a 180 gram hemp distillate (80% CBD) sample is purified in under 40 minutes.



Model	Daily Output	Flow Rate
ITM-420	3.1 kg	1 - 300 ml/min
ITM-800	12.6 kg	1 - 825 ml/min

Continuous processing is achieved using sequence programming. The following output data is based on running 24 hours a day. Due to the variability in the cultivation and manufacturing processes the CBD output value is a realistic expectation but does not constitute a guarantee.

ITM-420 10.5 cm Column

Load per Run	180 g
Load per Day	5.2 kg
CBD Output	3.1 kg

ITM-800, 12.8 cm Column

Load per Run	270 g
Load per Day	7.8 kg
CBD Output	4.7 kg

ITM-800, 20 cm Column

Load per Run	700 g
Load per Day	21.0 kg
CBD Output	12.6 kg

ITM25-XL, 100 cm Column

Load per Run	16.7 kg
Load per Day	484 kg
CBD Output	290 kg

Pilot and process scale instruments are built to specification and utilize hydraulic piston columns with inner diameters up to 1.2 meter.

Interchim is a well established manufacturer of low and high pressure chromatography instruments. The company was founded in 1970 to manufacture innovative products for pharmaceutical R&D. Years of experience have been applied to provide the cannabis market with a simple and cost effective purification solution.



interchim

Purity ♦ Speed ♦ Peace of Mind

www.interchiminc.com/hemp Tel: 800.560.8262

CBD Daily Throughput and Solvent Consumption

ITM420 10.5 cm Column

Load per Run	180 g
Load per Day	5.2 kg
CBD Output	3.1 kg

ITM800, 12.8 cm Column

Load per Run	270 g
Load per Day	7.8 kg
CBD Output	4.7 kg

ITM800, 20 cm Column

Load per Run	700 g
Load per Day	21.0 kg
CBD Output	12.6 kg

ITM25-XL, 100 cm Column

Load per Run	16.7 kg
Load per Day	484 kg
CBD Output	290 kg

Solvent	Liters	Gallons
Water	42	11
Methanol	203	54
Acetone	61	16

Liters	Gallons
69	18
323	85
127	34

Liters	Gallons
186	49
731	193
174	46

Liters	Gallons
3,946	1,042
18,922	5,003
5,714	1,516

24Hr Total	307	81
------------	-----	----

519	137
-----	-----

1091	288
------	-----

28,582	7,561
--------	-------

Pricing based on media life of 100 cycles

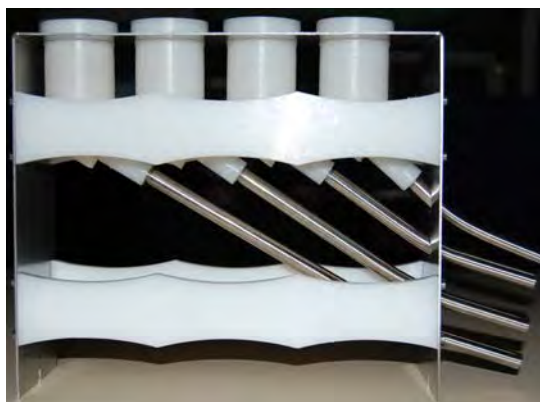
	C18 Media	Column Price	Cost/g
420 240 ml/min		\$6,100	\$0.565
800 Flash 360 ml/min 12.8 cm column		\$9,950	\$0.614
800 Steel 800 ml/min 20 cm column	\$1300/kg 7 kg	\$9,100	\$0.217
100 cm hydraulic piston 22.3 L/min	\$1200/kg 175 kg	\$210,000	\$0.209

Daily throughput is running three shifts for 24 hours. The feedstock is a third pass distillate with >80% CBD and 2-4% THC. The funnel rack is placed in the collector which diverts fractions into carboys beneath the instrument. A typical fraction scheme is 1) CBG/CBD 2) CBD 3) CBD/CBN/THC 4) CBC/THC.

Continuous operation is achieved by programming the instrument using the sample queue. The only limitation is the solvent (mobile phase) and collection capacity. Due to the variability in the cultivation and manufacturing processes the CBD output value is a realistic expectation but does not constitute a guarantee.

Sample Queue									
N°	Title	Sample	Column	Inj. Vol.	Cycles	Flow Rate	Signal 1	Signal 2	
1	THC Removal	Hemp Distillate 700 g, Lot 13-4	1	1750.0 ml	32	800.0	254 nm	200-400	

Funnel Collection for Continuous Operation



www.interchiminc.com/hemp Tel: 800.560.8262