

Automating Industrial Cannabis & Hemp Oil Extraction

ETHANOL EXTRACTION
Warm and Cryogenic

WINTERIZATION
Standard and Automated

ETHANOL RECOVERY
With Decarboxylation and Water Removal

FRACTIONAL DISTILLATION
Ethanol Water Removal

WATER EXTRACTION
Hash Production, Oil Extraction and Biomass Refining

OIL POST PROCESSING
Distillation, Isolation, THC Remediation, MIPs

ENGINEERING SERVICES
Facility design and Production Engineering

TURNKEY SOLUTIONS
Enclosures and Turnkey Facilities



All equipment is engineered, sourced
and manufactured within USA and Canada

Cannabis & Hemp Equipment Family

Cryogenic Ethanol Extraction

EV-M Series

- Process up to 600 lbs of organic material in a 10 hour shift or run multiple units in parallel
- 95% extraction efficiency
- - 40° C Chilling
- Hosing and piping meet 3A sanitary standards
- Multi-Stage filtration and winterization
- Centrifuge rated for C1D2 hazardous locations
- 3 processes in 1 system
- Able to perform single, double, or triple washes
- Integration with OERS and Helios available



Maratek Advantage

Founded in 1967, our history as a company comes from the solvent processing and recycling industries. Our goal is to help customers to automate, optimize and scale their production process and business. Our products are designed to decrease labor, improve automation and provide remote access. Our variety of sizes and customizable options are designed to help you scale and expand your business.



EV-I Series

- For large scale extraction (200lbs per hr and up) our EV-I solutions can help you scale and automate your extraction
- Warm and cryogenic options available
- Integration with OERS and Helios available

Automate | Optimize | Scale

Cannabis & Hemp Equipment Family

Recovery and Decarboxylation Equipment - SC-Series, C-Series, Helios



Oil and Ethanol Recovery System - OERS-C

- 100-40,000 gallons/Day
- Completely automated operation
- 99+% ethanol recovery
- Optional decarboxylation phase
- Optional dewatering phase
- Clean in place and data logging
- Highest level of safety C1D1 certified
- Fully automated remote control
- EU GMP compliant designs | 3A and BPE available
- 4 processes in 1 system



Oil and Ethanol Recovery System - OERS-SC

- 150-600 gallons/Day
- Automatic operation with manual discharge
- 99+% ethanol recovery
- Optional decarboxylation phase
- Optional dewatering phase
- All units under 8 feet tall
- Highest level of safety, C1D1 certified
- Dual container filling & collection
- EU GMP compliant designs | 3A and BPE available
- 4 processes in 1 system



Helios-Energy Efficient Ethanol Recovery

- Minimum 60 gallons/hr of throughput
- Uses 65% less energy
- Siemens PLC and programmable recipes
- Data logging and secure remote access and control
- Clean in place system
- 99%+ ethanol recovery
- EU GMP compliant designs | 3A and BPE available
- Class 1 Div 1 Group D explosion proof and safety certified
- Recovers solvents such as ethanol, isopropyl alcohol, heptane, hexane, pentane and more

Turnkey Winterization Systems

Turnkey Automatic Winterization System TAWS

- Turnkey Solutions from 60 to 500kg of CO₂ extract per day
- Automatic homogenization, winterization, filtration, ethanol recovery, decarboxylation, and heated oil storage in 1 process
- Fast automatic closed loop operation
- Single and multi-stream configurations available
- Rapid winterization in -20°C and -40°C configurations in 4-10hrs
- Multi-stage filtration to below 1 micron for shelf stable product production
- Carbon filtration also available
- Class 1 Div 1 Group D explosion proof & safety certified (Metlab)
- Fully stainless-steel construction
- High pressure Clean In Place (CIP)
- Allen Bradley PLC with data logging and programmable recipes
- Secure remote access and control



Turnkey Winterization Systems TWS

- Turnkey Solutions from 3kg to 40kg of CO₂ extract per day
- Rapid -40°C Winterization
- Class 1 Division 1 Group D Explosion Proof and Safety Certified (Metlab)
- Fully stainless-steel construction
- High pressure clean in place (CIP optional)
- Multi-stage filtration to below 1 micron for shelf stable product, carbon filtration also available



Automate | Optimize | Scale

Oil Post Processing Equipment

Distillate Equipment

- Short path and thin film solutions available
- Flow rates between 2 and 50 liters per hour
- EU GMP solutions available
- Glass and stainless-steel options
- Dual stage solutions



Isolate Equipment

- 5, 20 and 5 liter filter reactor solutions
- Operating temperatures from -90°C to +200°C
- Operating pressure full vacuum up to +0.5 bar G
- Height adjustable overhead stirrer
- Built in safety overpressure valve
- Achieve pharmaceutical grade powder within 4-6 hours



THC Remediation Equipment

- High throughput and scalable
- Crude or distillate input material
- Average batch run time 12-24hrs
- Replaces expensive chromatography equipment
- No Solvents Used



MIPs Equipment

- Extraction of specific molecules at commercial scale
- Manufacture of MIPs at lab, pilot, and bulk scale
- Design, development, and commissioning of extraction and Purification systems
- Replaces the need for winterization, decarboxylation, and distillation



Cannabis & Hemp Equipment Family

Water Extraction and Refining - Trident and Poseidon

Trident Oil and Hash Production

- 316 stainless steels on all product contacting surfaces
- 100-gallon total volume / 80-gallon working volume
- Food grade pumps and sanitary connections
- Produces consistent and high-quality hash
- Easy to install - fits through a 48-inch doorway
- 0.5 - 1.5°C closed loop water chilling
- UltraVibe Filtration- FDA approved vibrating screen filter solution
- Maratek QuickSwitch Mixing Technology including interchangeable and customizable blades to optimize your hash yield
- Maratek 3C technology



Poseidon Continuous Cold Water Refining Equipment

- Up to 80% biomass reduction through Trichome refinement
- Automatic filtration from 200 to 25 Microns
- 100-200+ pound per hour processing
- Optimized for fresh or dried biomass
- Low cost of operation
- Increase your ethanol efficiency
- 304 stainless steel on all product contacting surfaces

Automatic Ethanol Reproofing & Dewatering - F-Series

F-Series

- 300-40,000+ gallons/day
- Ethanol, methanol and more
- Fully automatic continuous operation
- Increase extraction yields and reduce solvent costs
- Reproof up to 99.9% ethanol
- Fully automated remote control
- Seamless integration with Allen Bradley PLC, data logging and programmable recipes



Turnkey Engineering Services

Engineering Services From Maratek

As an industry leader, we provide fully designed, safe, engineered and optimized turnkey facilities for the cannabis and hemp industry. We pride ourselves in our ability to offer high efficiency, low labor, turnkey facilities with both production and up-time guarantees - fully automating your extraction and recovery process from biomass to oil.

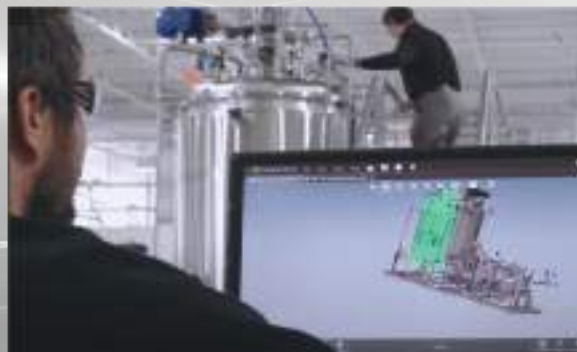
Our manufacturing facility and team of in house engineering puts us at the forefront of design, implementation, integration, and service.

Turnkey Enclosures

Ask us about our Extraction and Recovery turnkey facilities that can be provided in a self contained C1D1 enclosure.

Plant Engineering Consulting and Services

- Plant engineering, layouts & design services
- Project management
- Safety and C1D1 consulting
- Building and room design
- Production optimization
- Explosion proof safety
- Compliance verification equipment training & education
- Utility optimization & energy reduction
- Custom equipment engineering
- Automated sample collection
- Research & development agreements and engineering contracts
- Intellectual property agreements & sharing
- Engineered compliance certification
- Data logging and tracking



TURNKEY SOLUTIONS FOR ALL EXTRACTION METHODS

We can offer full facility design and build out services or if you are already operating we can help expand or optimize your production. We can supply turnkey extraction solutions for warm and cryogenic ethanol extraction, CO₂ extraction and solventless extraction.



About Maratek

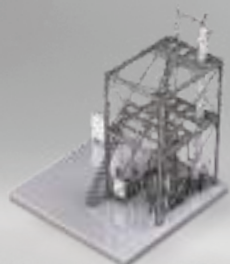
Maratek is an award-winning industry leader in the solvent recycling and cannabis & hemp oil production industries. We strive for the highest safety and quality standards with all our equipment designated as Class 1 Division 1 certified, and UL listed using only **North American stainless steel, parts, and labour.**

With over 50 years of experience in solvent waste and recovery industry, Maratek has solved a wide variety of engineering challenges. Let us provide world-class engineering services to integrate systems and provide closed loop cannabis & hemp oil production processes.

Cryogenic Ethanol Extraction
Series - EV - M



Oil and Ethanol Recovery Systems - OERS & Helios



Fractional Distillation and
Dewatering Systems - F-Series

The Maratek Family of Cannabis & Hemp Equipment and Services



Water Extraction and Refining
Trident and Poseidon



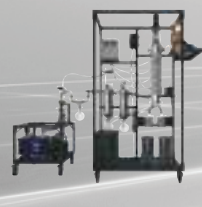
Turnkey Automatic
Winterization Systems - TAWS



MIPs



Isolate
Production



Oil Distillation
Systems



Engineering
Services

Contact

References available upon request with installations in facilities across the US, Canada and globally. Contact us now for a quote on our family of cannabis and hemp solutions!

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