

CPM

CROWN
EST. 1878

PROVEN EXPERTISE FOR NEW SPECIALTY PRODUCTS AND PROCESSES



Partner with CPM's Crown
to accelerate time to market and maximize your opportunity

For emerging and existing markets, Crown delivers end-to-end solutions backed by 75+ years of extraction experience. Crown applies proven technologies and process engineering know-how to new applications at a scalable size for specialty platforms. Take advantage of our technical expertise in plant-based proteins, hemp processing and specialty products, coupled with our Global Innovation Center to develop a custom and cost-effective solution to fine tune your process while maximizing your opportunity with new products, new processes and increased efficiencies.

Crown's full process solution allows you to:

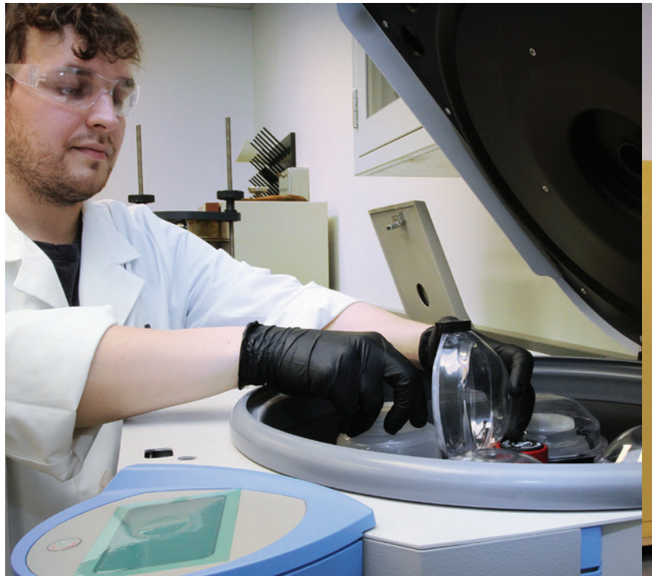
Test and develop products and processes
Reduce startup risk with feasibility testing and processing in our 15,000 sq. ft. pilot plant and analytical lab

Scale up with greater efficiencies / optimize
Scale up your operations with a continuous extraction system that lowers labor and operating costs

Utilize custom processing
Bring products to market faster with Crown's small scale custom processing









Plant Based Proteins
Hemp/CBD
Food/Beverage:
- Protein Concentrate
- Oils
- Spices
- Animal Protein
- Flaxseed/Chia/Hemp
- Beans/Grounds
- Cocoa/Coffee/Tea
- Beer
- Rendering

Fibers/Polymers/Waxes:
- Pulps (citrus pulp, paper, onion)
- Textiles
- Waxes

Nutraceutical/Botanicals/ Pharmaceuticals:
- Algae
- Alfalfa
- Cryl
- Hops
- Tree bark
- Polyphenols
- Antioxidants

Specialty Chemicals:
- Silica
- Acetaminophen
- Calcium Hydroxide
- Ink Toners

Specialty Product Examples (not comprehensive list)

Meet growth targets with lower manufacturing costs

For CBD oil, hemp seed protein, hemp seed protein concentrate, and pressed hemp seed oil, CPM Crown's Continuous Extraction and pressing technology allows you to boost processing capacity of high quality products with less environmental impact. Crown gets you up and running fast at input capacities up to 50+ MTPD with >99% solvent recovery and minimal labor requirements.

Advantages of partnering with Crown:

- Easily scale CBD operations with a continuous extraction plant proven to reduce labor and operating costs while increasing efficiencies and output, only 2 plant operators needed
- Our hemp protein concentrate process has proven to maximize hemp seed protein
- Crown efficiently presses hemp seed to under 10% residual oil for large scale operations
- Scalable up to 50+ MTPD input capacity to keep you on track with growth targets
- Environmentally responsible, >99% solvent recovery from oil and spent biomass with Crown's energy-saving desolventizing system
- Optimized for maximum oil extraction with lowest total operating costs
- Multiple solvent options tailored to operational needs
- Piloting capabilities from bench top to multiple tons per day, simulating real-world processing in a controlled, confidential environment









Achieve higher margins with premium plant proteins

Bring sustainable plant-based proteins to market with CPM's Crown. From feasibility, trials and custom processing to full-scale commercial size operations, Crown's experience, coupled with R&D provide guidance and support at every step. For dehulling, deoiling, white flakes and protein concentrate, Crown's plant protein technologies and custom engineered solutions allow you to develop and produce consistent products with the highest protein quality. As a committed life cycle partner, choose Crown to turn your plant-based protein ideas into profitable revenue streams.

Advantages of partnering with Crown:

- Crown's proven Plant Protein Concentrate process helps you achieve margins 10 – 20 times higher than commodity oil and meal products
- Efficient extraction technology with consistent product output yields the highest protein content and quality
- Our technical expertise and Global Innovation Center help you identify, test and deliver new products to market with reduced risk
- Crown's novel process brings new protein concentrates, such as rapeseed and canola to market
- Crown's processing technologies deliver unrivaled uptime with engineered designs that minimize downtime due to cleaning, maintenance and other needs
- Lowest operating cost with zero effluent during production, all recovered water is reused in the process
- Minimal ethanol loss – essentially all ethanol is recovered. Recovered ethanol is clean and continuously re-used in the process.
- Full lifecycle support includes a complete process solution tailored to your needs, development guidance, R&D support, pilot testing, commercialization, training and field & aftermarket services
- 25+ completed projects worldwide for Food, Feed and Aquaculture
- Execute a project anywhere in the world with our global reach

INNOVATION CENTER

Where your specialty ideas become a profitable reality

Establish your competitive advantage with CPM Crown's Global Innovation Center. Our fully functional 15,000 square foot plant offers piloting capabilities from benchtop lab scale to multiple tons per day of production simulating real life, allowing you to develop and test new product concepts in a confidential and controlled environment. With Crown's Innovation Center, technical expertise, R&D and full lifecycle process, we provide guidance and support at every step from feasibility, trials and custom processing through to commercial-sized operations and aftermarket services.

Global Innovation Center offers:

Proprietary Process Development
Engineer unique, better processes

Proof of Concept
Explore new products, new feedstocks and improve go/no-go decisions

Analytical Testing
Capabilities for every step of the process

Highly Instrumented
Collect and act on insights from PLC & Data Historian

Scalability
Go from benchtop to commercialization with confidence











Optimize your processes

Reduce downtime, increase efficiencies, accelerate speed to market, and more. We offer comprehensive optimization solutions from testing and analysis to process and technology development to help you identify new ways to operate faster and better.

Train your workforce

Boost productivity, processing capabilities, equipment longevity, and plant safety by building and expanding the knowledge and skills of your employees with classroom and hands-on education in real-world environments.

Leverage Crown's R&D experts

Tap into the product life cycle expertise of Crown's R&D engineers. Our experts not only design and engineer equipment they also possess the deep process knowledge required to drive your operation forward.

SPECIALTY EXTRACTION

Improve product recovery. Reduce solvent use.

For optimal specialty extraction, partner with Crown — the global leader in extraction technology, performance and innovation. CPM Crown's continuous and counter-current extractors are the reliable, low cost choice for improving product recovery from feed material while also reducing solvent use. Our pilot plant features both percolation and immersion extractors to help you determine which technology is the ideal match for your specific material.

Model IV Immersion Extractor – For granular or coarse products that sink in the solvent or are too fine for percolation-type extractors



Advantages:

- Complete immersion ensures good product contact with the solvent
- Complete bed turnover prevents solids compaction and packing
- Gentle motion and bed turnover minimizes product breakage
- Vapor-tight design for operation with volatile solvents
- Washing, dewatering, desolventization

Model V Percolation Extractor – For flakes, crushed beans, or leafy materials



Advantages:

- Shallow beds for materials that expand when wetted
- En-masse conveyors minimize product breakage
- Gentle paddle motion over stationary relieved screens prevent screen plugging
- Easy clean / clean-in-place designs
- Vapor-tight design for operation with volatile solvents
- Washing, dewatering, desolventization

Model III Percolation Extractor – For high volume extractions such as vegetable proteins, wood chips, polymers, or other well-draining products

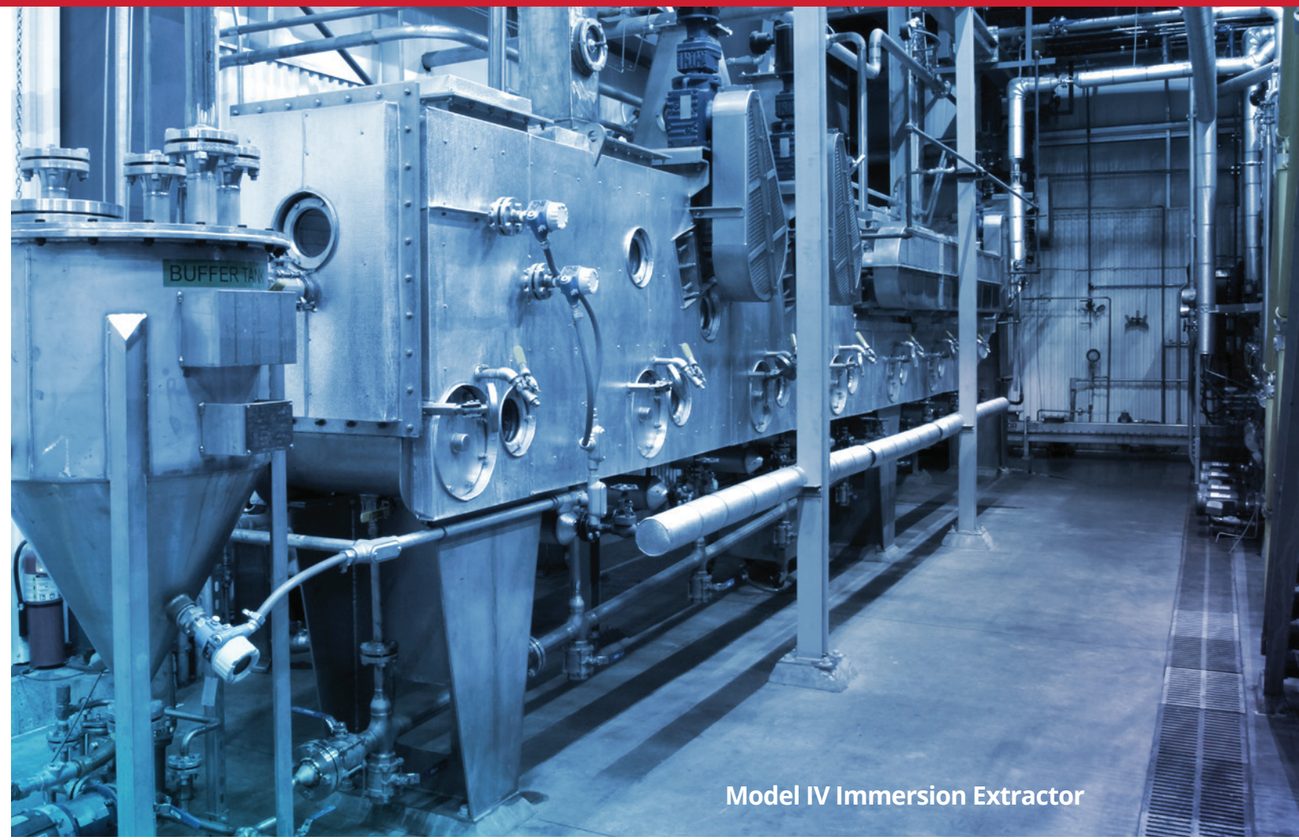


Advantages:

All the advantages of Model V, plus:

- High throughputs
- Complete bed turnover promotes good drainage
- Screen cleaning technology eliminates plant shutdowns

Oilseeds | Waxes | Proteins | Botanicals | Nutraceuticals | Products of Reaction | Continuous Washing of Recyclables



Model IV Immersion Extractor



Model V Percolation Extractor



Model III Percolation Extractor



For every application, a proven solution

Achieve a high quality, solvent-free end product regardless of input when you partner with CPM's Crown. With our industry expertise and range of versatile, drying and desolventization solutions, we'll help you identify your best options to maximize yield and minimize process costs.

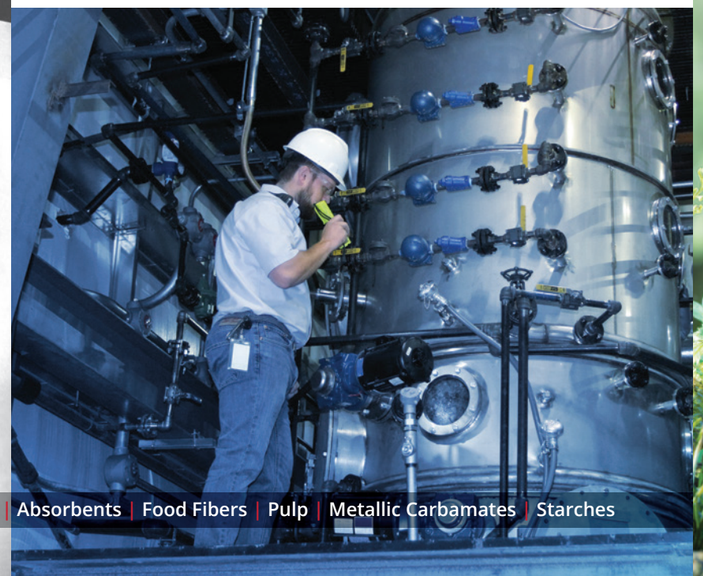
Milling Flash Dryer
No moving parts—for applications where a fine end product is desired

Vertical Flash Dryer
For temperature sensitive products where minimum heat input is desired

Down Draft Desolventizer
For larger particles that require extended residence times for drying

DTDC Desolventizer Dryer/Cooler
Vertically oriented tray/semi-fluid bed dryer for granular materials or flakes

Drying Under Vacuum
For heat sensitive products



Silicas | Toners | Fillers | Polymers | Specialty Chemicals | Absorbents | Food Fibers | Pulp | Metallic Carbamates | Starches

Working together for a better world

From risk management to environmental management, CPM's Crown offers engineering expertise that applies a global lens to your real-world manufacturing operations. Whether it's reducing energy and water consumption, helping you transform waste products into saleable goods, improving supply chain resiliency, worker health & safety or another initiative, count on our problem-solving expertise to help fulfill your sustainability commitments.

Partner with Crown on your key initiatives:

- Carbon Footprint Reductions
- Clean Manufacturing
- Emissions & Energy Reductions
- Operational Performance
- Regenerative Agriculture
- Renewable Resources
- Social Responsibility
- Supply Chain Resiliency
- Sustainability
- Zero Waste Targets







CHOOSE A PROVEN, PROBLEM SOLVING PARTNER FOR THE LONG RUN

Whether you're new to a specialty market or looking to diversify your portfolio, Crown offers you the greatest competitive advantage with our expertise, equipment and world-class Innovation Center. From specialty product development and testing to custom processing, full-scale commercialization, and aftermarket parts and field service support, Crown helps you meet ever-changing global demands with greater profitability, efficiency and sustainability.

Feeding, Fueling and Building **a Better World.**

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