

**berkem**<sup>®</sup>  
*Active by principle*





Audacious manufacturers

### → Audacious and Creative

30 years ago, Berkem was the first specialist in polyphenol extraction.

Since its founding the firm has perpetuated the tradition of quality products and an authentic service to ensure the implementation of ambitious projects and customer satisfaction.

Berkem anticipates trends in addition to technological, regulatory and sociological developments on its markets.

### → Wisdom

Acquired in the Trade of extracting active plant elements from the bark of maritime pines and grape seeds.

Our know-how in plant extraction enables us to offer you a range of extraction technologies to promptly meet your demand in the best possible way.

### → Active by principle

> Motivated, reactive teams for each project.

Logistics, maintenance, purchases, trading, marketing, quality control, production and R&D laboratory; all these integrated departments work together in complete confidentiality for the success of the most audacious projects.

> High-performance tools at your service.

- Workshops organised in flexible units that can be adapted to your demands and technical developments.
- A pilot workshop for technology transfer.
- Production capacities adaptable to demand.

## Berkem in figures

- An independent SME on a human scale, a specialist in chemical formulation and plant extraction.
- 30 years' experience in the extraction of active principles.
- A 6ha site in the south-west of France in Gardonne.
- 50 000 m<sup>2</sup> of plant and buildings, of which 5000 m<sup>2</sup> covered.
- Present on the European and international markets, 50% of turnover recorded for exports
- An annual processing capacity of more than 5000 tonnes of plants



# Our know-how

## Unique plant extracts

### Tailor-made purified plant extracts and active principles

Produced from various types of plant raw materials: leaves, roots, barks, flowers, seeds, pips, fruits, vegetables, etc., and semi-transformed products (oils, powders).

### Services

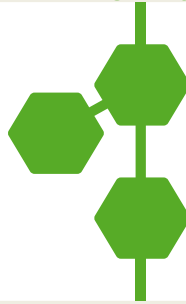


- Plant extraction, all solvents (Fresh or dry plants).
- Grinding and preparation.
- Concentration, purification.
- Static and dynamic drying.
- Atomization.
- Powder mixes.
- Fine chemistry: protection of active substances by esterification, etherification or hemisynthesis.

### Industrial solutions adapted to your procedures

- **Powder** forms: atomisat and powder premix.
- **Liquid** extracts: aqueous, alcoholic, hydro-alcoholic and hydro-glycolic solutions.
- **Semi-solid** forms: soft extracts, concrete
- Organic certified extracts and according to specifications: Kosher or Hallal.

### Antioxidant active principles



- Custom fruit and vegetable polyphenols.
- Grape and pine titrated antioxidants: **Vitisol®** and **Pineol®**.
- Vectorized polyphenols for cosmetics: **Berkemyol®** range.

### Intermediary capacities Flexibility

From 30 KILOS TO 500 TONNES:  
we can adapt to your demand.

### FIELDS OF APPLICATION



FOOD



COSMETICS



ANTIOXIDANTS



PHARMACEUTICAL



Your demand



Confidentiality agreement



R&D tests, discussions and development of optimal solutions for your extract



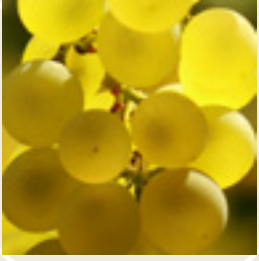
Compound characterisation



Pilot stage

# Our Commitments

## Production and Quality



### Our teams' commitment to confidentiality

Our teams, as a multi-disciplinary whole, are committed to protecting each customer's knowledge and know-how.



### A resource person dedicated to your project

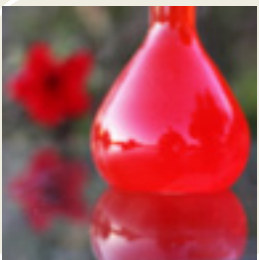
Berkem focuses on a local service and availability for its customers. Consequently, a specific person will be appointed at the very beginning of our collaboration to work alongside you throughout the entire process to extract your specific plant substance.



### From development to production: control of the key stages in your project

#### → Complementarity and integrated services

- Research & Development Laboratory, a 7-person team dedicated to the development of your project.
- Analysis laboratory and equipment for extract characterization, HPLC, CPG, IR, with reference to the European pharmacopeia.
- High-performance pilot installations to guarantee industrial transposition and allow relevant quantities to be produced.
- Production workshops organized in versatile, adaptable units.



### Requirements

Berkem's high-performance installations make it possible to achieve high extraction yields and levels of pureness that are among the best on the market.

### Quality and traceability guarantees

We guarantee the quality of the extracts through control at each stage of production. Production site with ISO 9001 certification (version 2008 ).

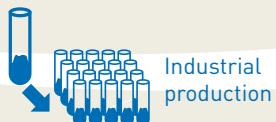


#### → Food safety approach

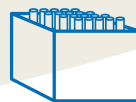
- Adoption of the HACCP approach.
- Goal: ISO 22000 certification meeting the food safety requirements.

#### → Good Manufacturing Practices

- AFSSAPS certification for substances for pharmaceutical use obtained respecting GMP.



Quality control  
at each  
production stage



Your extract



# Our Tools

## Extractors with filtering bottom

- Pilot Guédu 200 litres, stainless steel
  - Work pressure: Vacuum / Atmospheric pressure.
- Tournaire 3000 litres, stainless steel
  - Work pressure: Vacuum / Atmospheric pressure.

## Extractors

- 3 maceration tanks of 6000 litres (steam heating)
  - Characteristics Semi-continuous system.
  - Extraction rate for a simple extract: 30 tonnes of plant/week.**

## Falling film evaporator

- 3000 litres, stainless steel
  - Water 1 T/H-Solvent 3 T/H Continuous flow system.
  - Minimum batch: 4 to 5 m<sup>3</sup>.**
  - Work pressure: Vacuum / Atmospheric pressure.

## Filters

- Ultrafiltration pilot, area 9m<sup>2</sup>
  - Filtration threshold of 20KD, mineral membrane.
- Filter press 90m<sup>2</sup>
  - Work pressure: 15 bars maximum.
- Mobile filters

## Reactors

- 200 to 10000 litres
  - 6 enamelled reactors, Pyrex columns and accessories.
  - 10 stainless steel reactors.
  - Work pressure: Vacuum / Atmospheric pressure.

## Low-pressure purification columns

- 450 mm and 800 mm
  - Variable bed height.

## Ovens / drying

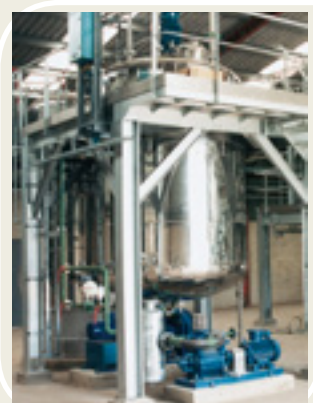
- 1 vacuum oven (100 kilos)
- 1 ventilated oven (300 kilos)
- 1 stirring dryer (50 kilos)

## Plough mixer

- Mix of powders.
- Capacity 1 tonne of powder/batch.
- Food and pharmaceutical industries.

## Atomizer

- 1 kilo pilot
- Turbine atomizer
  - Rate 100 litres water/ hour. Minimum batch: 100 litres of solution.
  - **Capacity of 2 tonnes of liquid for atomizing / 24 hour.**



# berkem®

Plant extraction



## An Ecoresponsible company

### Respect of the environment:

**Transparency and sustainable development for future generations.**

The firm supports, within the UIC (Union des Industries Chimiques – Union of Chemical Industries), the “commitment to progress” programme that aims to reduce the release of pollutants into the environment and improve staff safety.



**Berkem** has obtained certification attesting to its commitment to the respect of organic production methods and several certificates issued by the Ecocert body for the food processing and cosmetic fields.



Groupe **berkem®**

“Marais Ouest” - 24680 GARDONNE - France  
Phone. **33 (0)5 53 63 81 00** - Fax. 33 (0)5 53 63 81 01  
[www.berkem.com](http://www.berkem.com)