



KINEMATICA

Homogenizing perfected.



MEGATRON®

PILOT PLANT LINE

MEGATRON® MT-MM 1-55

Inline Membrane Emulsifying unit



*«Homogenizing
perfected for a
healthier, tastier
and cleaner world.»*

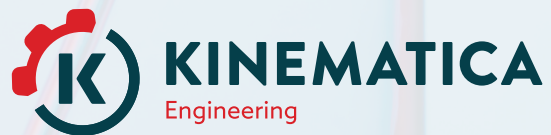
-

This is our purpose and promise to you!

Kinematica - Machine manufacturer?

We are more than that!

Kinematica is not only a producer of industry-leading machinery, we maximize your success by offering expertise in **SCIENCE - ENGINEERING - EQUIPMENT**.



Ideation, Prototyping and Scientific Consultancy – this is what we offer with Kinematica Science & Development since 2020. The main focus lies on connecting our huge experience in the homogenizing technology with science for **more innovation and creation** for our customers together with us.

For over 60 years Kinematica has built process equipment for the most challenging dispersing and mixing tasks. The requirements of customers have evolved and the need for more integrated complete and efficient mixing skid solutions is constantly increasing. Unique challenges need to be met and that is exactly what our engineering team specializes on. **One solution, out of one hand.**



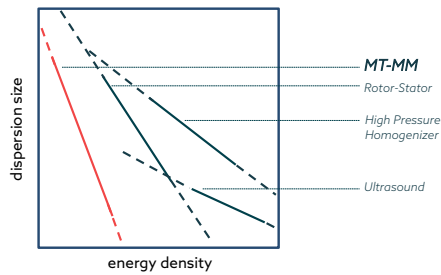
MEGATRON® MT-MM 1-55

Dispersing, homogenizing and emulsifying.

The MEGATRON® MT-MM convinces with advantageous qualities compared with conventional emulsifying methods:

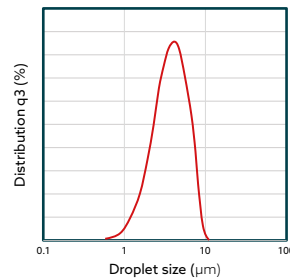
LOW ENERGY INPUT - GENTLE PROCESS

Ideal for sensitive material.



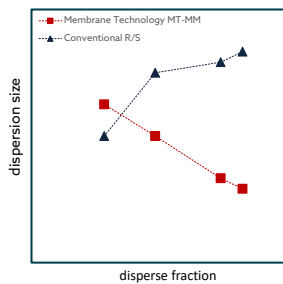
NARROW DROPLET SIZE DISTRIBUTION

Ideal for monodispersed emulsions and foams.



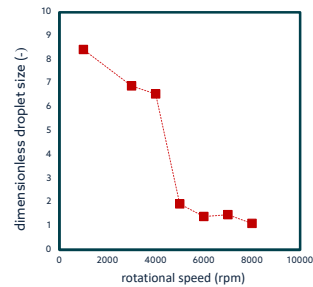
STABLE EMULSIONS AT HIGH DISPERSED FRACTION

Ideal for highly stable emulsions and foams.



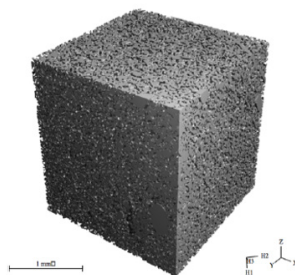
CONTROLLED FLOW FOR A CONTROLLED PROCESS

Ideal for best process reproducibility and control.



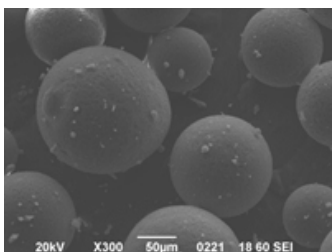
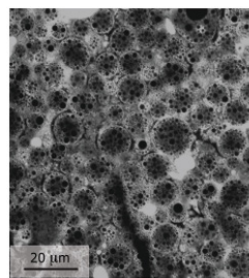
PROCESSING WITHOUT ADDITION OF EMULSIFIER / STABILIZER

Ideal clean label products.



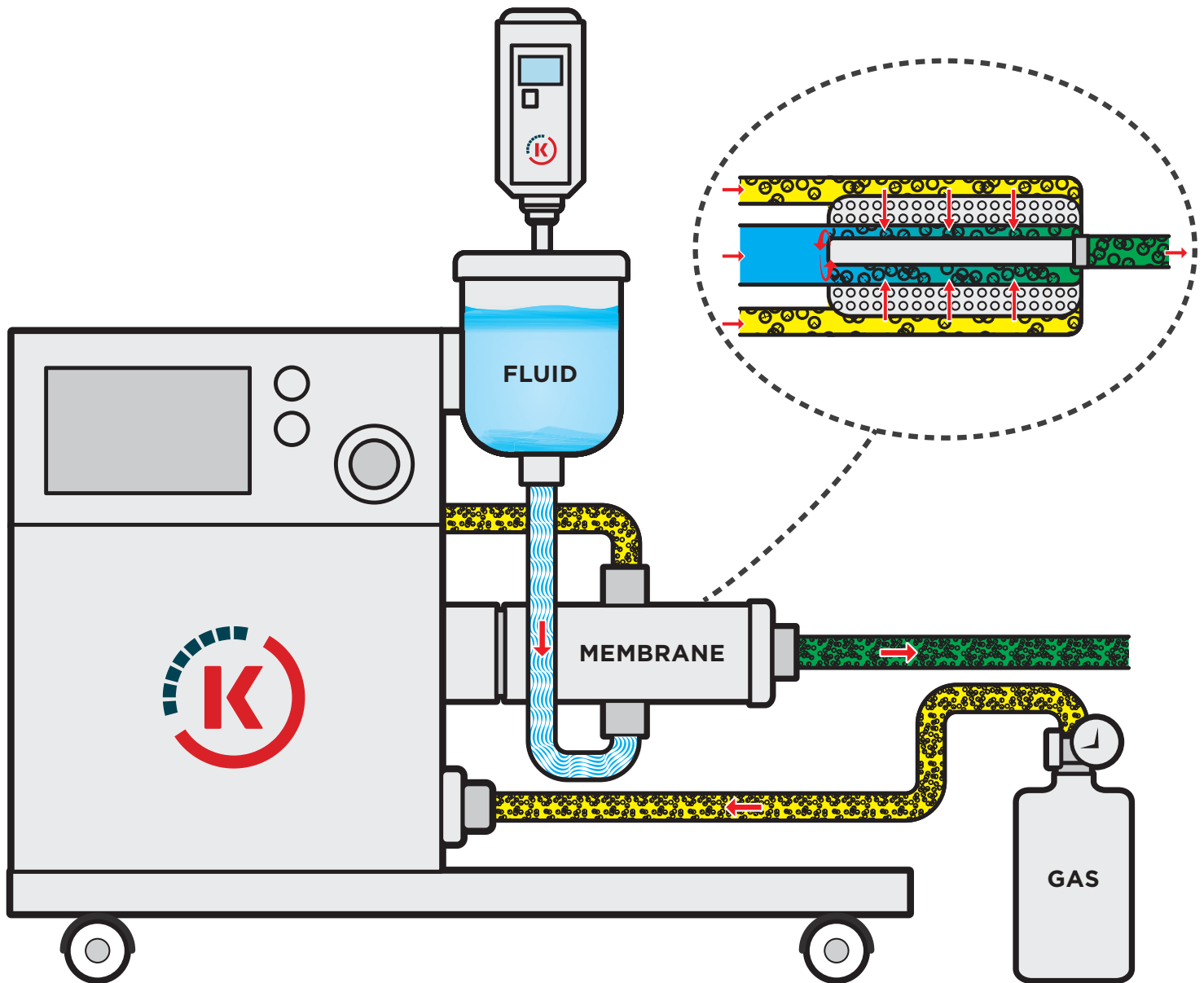
STABLE DOUBLE-EMULSIONS

Ideal for efficient encapsulation.



Most gentle emulsification & foaming

The patented solution for every foam and emulsion.



PRINCIPAL OF PROCESS

A MEGATRON® MT-MM machine consists of a cylindrical working chamber in which a membrane is installed coaxially over a shaft. The working chamber has two product inlets, one for the disperse (inner) phase and one for the continuous (outer) phase. The disperse phase streams radial through the porous membrane and will be dispersed into the continuous phase while flowing through the pores of the membrane. The drop detachment is additionally supported by the fast rotation of the inner cylinder. The drop formation or its size distribution depends on the process parameters: Speed, pore diameter of the membrane, viscosity of the continuous phase and the shear gap. The formed drops are continuously taken away by the outer phase.

MEGATRON® MT-MM 1-55

Dispersing, homogenizing and emulsifying.



TECHNICAL INFORMATION

Max. throughput	Approx. 5 – 50 l/h of liquid phase
Max. working pressure	6 bar(g) for continuous phase 20 bar(g) for dispersed phase
Max. product temperature allowed	90°C
Material	All wetted parts are made of SS 316L, electro-polished All wetted O-rings are made of EPDM (other materials are available on request)
Motor	High frequency motor, 4.0 kW, 10000 rpm, 3x400 V, 167 Hz, IP 55, Design B3/B5 Suitable for operation with frequency inverter (must be operated with a frequency inverter)
Speed control	By frequency inverter, Type RECO® 34 / 4.0 integrated in the stainless steel housing
Working chamber	Type: MMK 1-56 DW, horizontal design, with heating / cooling jacket, with double mechanical seal, product inlet G ½", product outlet G ½", material 316 L; electro-polished, dosing connection before and after the membrane (other connection types or adapters are available on request)
Membrane module	Type MMG 55/2, material: stainless steel 316L
Mechanical seal	Double mechanical seal
Sealant pressure system	Pressure vessel with volume 3 l with cooling coil, analogue manometer and analogue thermometer
Pump with frequency converter for continuous phase	Pump unit with gear pump head and magnetic coupling, flow rate up to approx. 40 l/h, controlled by frequency converter through touch screen panel
Gas flow meter	To control the gas flow Gas flow: up to approx. 40 l/h
Plant control	Touch screen panel 6.4" TFT color Network; 10 / 100 Mbit USB- and RS232-Connection Windows CE Core Protection class: front IP 65 / back IP 20



According to the latest Pharma and Food standards

MT-MM 2x2 140

NEW

For industrial applications.

Due to high demand, the existing MEGATRON® MT-MM has been further developed and is now also available with an increased throughput capacity up through 300 L/h.



A solution for every need

Application overview.



FOOD

- Coffee extract foam
- Chocolate foams
- Caramel emulsions or foams
- Flavour/Colour encapsulation
- Ice cream foams
- Dysphagia food
- Foamed crème gentile
- Butter spread
- Praliné fillings
- Mousse products
- Marshmallows
- Ravioli fillings



PHARMA

- Drug encapsulation
- Vaccines
- Foamed patches
- Dragée coatings
- Liposome encapsulation
- Suppositories
- Foamed drug blisters
- Probiotic solutions
- Ointments and creams
- Fat particles
- PLGA capsules



COSMETICS

- Deodorant
- Soaps
- Toothpaste
- Natural cosmetics
- Creams
- Balm
- Paraffin wax emulsions
- Probiotic cosmetics

NEW



SWT-20-RH

Efficient cool.

Kinematica's newly developed surface scraped heat exchanger enables efficient cooling for perfected slurry production and fractionation. The compact size is ideal for pilot and industrial scale applications for the food, pharmaceutical and cosmetics sectors.



Our mission. Your solution.

Homogenizing perfected: for every industry.

Kinematica's broad portfolio of solutions can address almost every dispersing application for the pharmaceutical, cosmetic, chemical, food and life science industry. Innovative powder-induction systems, solutions for completely sterile environments, or fully-compliant ATEX architecture are just some examples of the broad portfolio that Kinematica can offer with true scalability from pilot-plant to large plant configurations.

Our state-of-the-art technology, in addition to a professional consulting and engineering suite of services, can address a variety of processes such as blending / mixing / stirring, emulsifying, deagglomerating, foaming, crushing and homogenizing with particle size reduction from a few micrometers down to nanometers in size: the proprietary design and innovative geometry of our aggregates / generators can downsize and provide perfect statistical particle distribution for the finest emulsions / suspensions and foam dispersions.



PHARMA



CHEMICAL



COSMETICS



FOOD



LIFE SCIENCE



HEADQUARTERS

Kinematica AG

Werkstrasse 7 c-d
6102 Malters
Switzerland

Phone +41 41 259 65 65

Fax +41 41 259 65 75

info@kinematica.ch

kinematica.ch

EUROPE

Kinematica GmbH / Germany / Phone +49 7634 504 800 0 / info@kinematica.de

-

NORTH AND SOUTH AMERICA

Kinematica, Inc. / USA / Phone +1 631 750 6653 / info@kinematica-inc.com

-

RUSSIA AND CIS

Kinematica AG / Switzerland / Phone +41 41 259 65 65 / info@kinematica.ch

-

GREATER CHINA

Kinematica Asia Limited / Hong Kong / Phone +852 249 769 65 / info@kinematica.ch