



KRIEGER

SWISS 
QUALITY HOMOGENISING

STERILE CONTAINED POOR OF GERMS

**NEW
C-TF
HOMOGENISER**

**HOMOGENISER
&
CLEANING
SYSTEM IN ONE**



- superior product quality
- long product life for on the shelf products
- balanced shear force for sensitive components
- reproducible viscosities
- suitable for low to high viscosity products
- control of the product flow in the vessel (UP/DOWN)
- fast CIP processes
- easy powder dissolving
- no product losses as no circulation loop is required

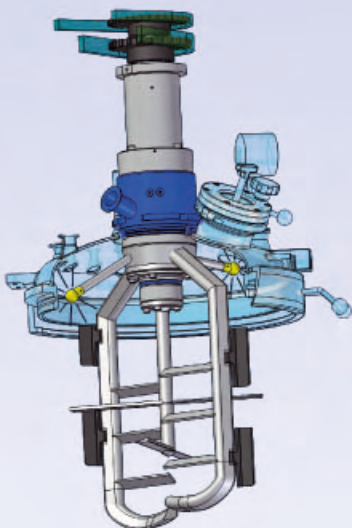




MMD 500 for the production of a sterile wound creme.

Main Features:

- Krieger C-TF Homogeniser
- Counter rotating mixing elements and gear box with the famous integrated (rotating) CIP/SIP system.
- Double mechanical seals coolable by a sterile liquid or a sterile condensate.
- Gamp IV Siemens or Allen Bradley software concept
- integrated automatic CIP/SIP of all utility pipes with visual front control and/or probe.
- on board temperature verification system
- sterile bottom outlet valves
- PED/ASME 3 to 4 bar vessel design
- IQ/OQ Documentation,... complete validation packages



The integrated CIP/SIP system has spray balls that rotate together with the outer agitator arm. As such the cleaning medium and the sterile steam is brought directly under the nozzles of the vessel cover, thus allowing a faster cleaning and an optimal sterilisation. Combined with the Molto Mat's automatic CIP/SIP system for utility connections, valuable process cycle time is gained, compared to traditional systems.

STERILE

Mixing & Homogenising

The Krieger MOLTO MAT is a standard when it comes to manufacturing of sterile:

**creams
ointments
suspensions.**

The overall cGMP design and many powerful integrated CIP/SIP systems, make the Molto Matt the chosen machine by major pharmaceutical companies around the globe for their sterile applications



MMD 600, DPT labs, Lakewood, NJ, USA

Sterile & Contained Suspension production

Magnetic mixer: Working capacity: 7 liter to 75 liters

Integrated Load cells
Application: eye drops
Innovative construction of the vessel bottom enables a process with minimum volume of 7 liters in a 75 liter capacity reactor with a magnetic mixer.



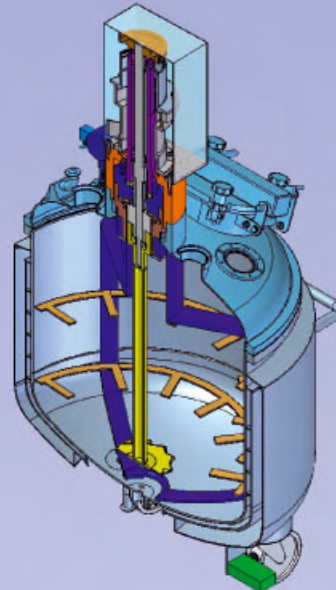
Suspension plant, Alcon Labs, Spain

CONTAINED

Mixing & Homogenising

Krieger's mixing and homogenising system for contained applications is „state-of-the-art“ technology that is widely used by major pharmaceutical companies around the globe for:

- ophtalmic viscoelastics**
- orthopedic viscosupplements**
- injectables**
- suspensions**



500 liters homogenisation system with high speed Z blade, near to the wall scraper and CIP/SIP mechanical seal containment chamber

All of these products require processes with enhanced mixing functions, heating/cooling operations and CIP/SIP cycles with one stringent requirement : CONTAINMENT i.e. : creating a pure environment for the process chamber, where the product and its components can be processed without contact to mechanical seals and/or cooling liquids, scrapers and outside atmospheric conditions.

Kriegers contained mixing & homogenisation technology provides a technology platform that separates physically the process product chamber from the technical mixing mechanism. As such, a mixing and homogenising process under a totally contained and sterile environment has become possible.



KRIEGER BIO - MIXER

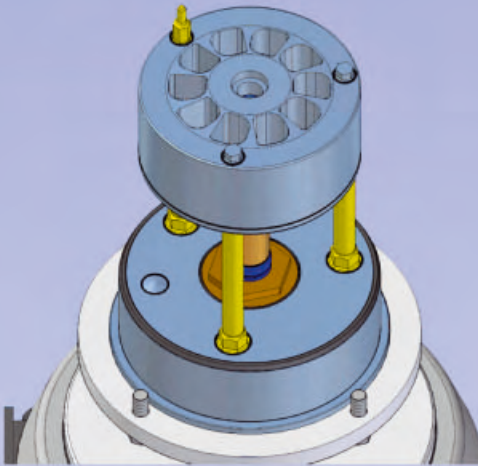
Mixer for Shear Sensitive Bio Materials like Hyaluronan

- counter rotating mixing elements
- homogenisation process with low shear
- double seal containment chamber
- contained SIP/CIP design
- near to the wall scrapers
- wide viscosity range
- fast mixing process
- changeable mixing tools for different viscosities

25 liters biomixer
Mixer for creating a hydrogel using Sterile Hyaluronic Acid powder for production of ophtalmic viscoelastics.



SWISS QUALITY HOMOGENISING



cutting edge „C-TF Homogeniser“ provide a powerful inside cleaning tool that cleanses the entire vessel with a minimum water quantity over a short time period.

The Krieger C- TF homogeniser is manufactured in Switzerland to the highest precision standards, with constant shear and flow rates in order to guarantee perfect reproducibility and scale up of products manufactured in the MOLTO MAT and the K- Mix machine range.

POOR of GERMS

Mixing & Homogenising

The K-mix machine range provides a fast and easy process for emulsifying, dissolving & homogenising all kinds of creams, ointments, mascara, suspensions,... within the low to high viscosity range.

The K-mix is designed for clean and aseptic processes under vacuum



K- mix 300 liters



K- mix 2500 liters with automatic CIP System

The powerful C- TF homogeniser enables fast and easy dispersing, emulsifying and homogenising of the introduced phases and the entire product batch without the necessity of a recirculation loop. As such product losses are minimised and the cleaning and sanitisation cycle is substantially more efficient.

A special characteristic is the balanced shear force of the homogeniser that makes it difficult to damage batches due to over homogenising and safeguards valuable share sensitive ingredients.

The Molto MAT and the K- mix range have been executed with the new C- TF homogeniser design that is capable of processing lower to higher viscosity products. The new homogeniser is self cleaning, sterilisable and the higher flow rates of the

Main Features K- mix line:

- Krieger's C – TF Homogeniser
- patented counter rotating mixing tools that guarantee a controlled product flow and a homogeneous temperature distribution inside the vessel
- patented wall scraper design to guide the product from wall to inside of vessel
- Flush mounted, aseptic crevice free bottom valves
- Crevice free vessel design for clean and aseptic applications
- 0.5 bar to 2 bar designs
- Upscaling guaranteed: Sizes from 50 liters to 5000 liters
- Plc control and temperature monitoring
- FDA approved design
- Precise repeatable processes
- CIP systems and sanitisation optional



KRIEGER

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