

## OLSA FOR LIQUIDS

### APPLICATIONS



#### TURN KEY PROCESSING PLANTS

Olsa has the competence and the capability to partner its customers in the development, design, manufacturing and validation of complete complex systems for any solid, semisolid and liquid product, including aseptic processing. This allows to realize complete plants fully automated with ancillary equipment, process piping, valves and including CIP/SIP system.

Large intensive and fully automated production of Small and Large Volume Parenterals, Vaccines, Blood Derivatives, Syrups, Suspensions, Emulsions, Creams and Gels.



#### LIQUID PREPARATION VESSELS

Portable and fixed vessels and systems with different mixing systems. Jacketed or single wall, full vacuum and pressure tanks with integrated stand-alone control panel. The preparation vessels are designed and manufactured in compliance with the strictest cGMP guidelines both for sterile and non-sterile productions. Size range from 2 up to 50.000 liters matching EU cGMP & FDA requirements as well as ASME/PED certification.

Oral and Injectable solutions and suspensions. Small and Large Volume Parenterals. Vaccines, Biological and Ophthalmic products.



#### LABORATORY AND INDUSTRIAL BIO REACTORS

Cell and bacterial culture units both standard and customized execution from laboratory size, autoclavable or in situ steam sterilizable, up to industrial scale. Product range is from 2 up to 50.000 liters matching EU Cgmp & FDA requirements as well as ASME/PED certification.

Vaccines (human and animal), Recombinant, Monoclonal Antibodies, Hormones and Antibiotics.

## OLSA FOR SEMI-SOLIDS

### APPLICATIONS



#### OLSAMIX

The Olsamix equipment is used for Pharmaceutical and Cosmetic batch production of semi-solids products. It is available in a full range from 5 to 30.000 liter large industrial equipment. Olsamix is equipped with an internal CIP/SIP system engineered according to GAMP standard.

Batch preparation of ointments, gels, creams, suspensions, emulsions, soft capsules, suppositories and toothpastes.



#### SPEEDYMIX

The Speedymix equipment is used for Pharmaceutical and Cosmetic batch production of semi-solids products with a mixing system based on three agitators: an anchor-type for a bottom-up recirculation, a blade-type for a top-down recirculation and a bottom-mounted homogenizer. In addition product mixing is further enhanced throughout an external recirculation.

Batch preparation of ointments, gels, creams, suspensions, emulsions, soft capsules, suppositories and toothpastes.



## MAXILAB

Maxilab is a mixer whose range varies from 3 to 30 liters replicating industrial units allowing the scaling up of laboratory results as well as small batches production. Maxilab is also used for scale-down applications. It is equipped with a touch screen panel with a set of video pages for very practical management.

Production and improvement studies of Pharmaceutical, Cosmetic, Food and raw material compatibility and rheology test.

## OLSA FOR SOLIDS

### APPLICATIONS



## HORIZONTAL AND VERTICAL VACUUM DRYING SYSTEMS

Olsa Drymix design is to create a comprehensive drying system that addresses all technical concerns while being compliant for use in areas of different classification (clean rooms, explosive atmosphere, etc.). Equipped with high speed chopper with rotatory blades has a unique system to solvent recovery and dust filtration for proper containment.

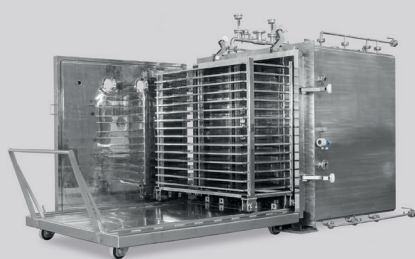
Pharmaceutical active ingredients, excipients, antibiotics and fine chemicals



## FILTERPLUS AND DRY FILTER

Olsafilter plus NUTSCHE type filter are type of process units for the solid liquid separation and cake washing having in one single equipment the solid liquid separation and, in addition, the drying operation. This allows to get a high containment and operator safety conditions.

Solid liquid separation and drying of API, excipients and fine chemicals



## STATIC VACUUM DRYERS

Heated shelves with improved heat transfer capacity. Equipped with a proper rack of shelves placed on wheel for easy removal from the drying chamber for complete cleaning operations. Process phases automation (heating, vacuum, inactivation and CIP) to assure parameters reproducibility and to avoid human errors.

Drying of granulates, powders and vegetables



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