# THERE'S A SCIENCE TO SUCCESS.™

## serán

## HME Technology for Bioavailability

In addition to our wide range of technology solutions for poorly soluble compounds, Serán offers Twin Screw Extrusion for Hot Melt Extrusion (HME) and granulation.

More than 50% of active pharmaceutical ingredients currently under investigation are characterized as poorly water-soluble compounds resulting in low bioavailability. HME offers several process efficiencies and environmental benefits when compared to alternative manufacturing technologies



Leistritz ZSE 18 HP-PH Twin Screw Extruder
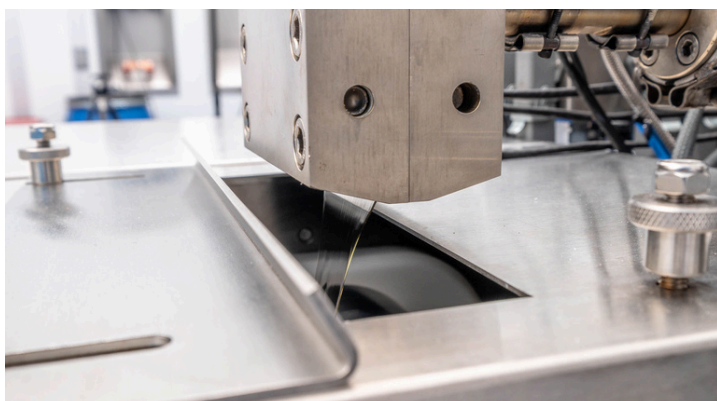
Seran's equipment supports available 16 and 18 mm configurations for HME plus configurations for continuous Twin Screw Wet Granulation (TSWG) and Twin Screw Melt Granulation (TSMG). HME is an efficient and scalable technology that provides a solvent-free alternative to spray drying.

**Solid dispersions**

**Continuous process**

**Granulation**

**Solvent-free processing**

# Increased Product Development
## Success Rate

## HME is a Mature and Robust Technology

**Hot Melt Extrusion**
- Molecularly disperse poorly soluble class II and IV drugs
- Enhanced solubility and bioavailability for poorly soluble drugs
- Solvent-free, continuous processing
- Compatible with a variety of dosage forms
- Pilot development to Phase III and commercial readiness

**Twin Screw Wet Granulation**
- Improved flowability
- Improved compressibility
- Reduced moisture exposure
- Uniformity and low-dose applications

**Dosage Forms**
- Granules with controlled release or taste masking properties
- Tablets
- Capsules

**Downstream process**
- Quenching through chilled rolls
- Pelletizer
- Quadro SLS Fitzmill

Serán prefers to evaluate extrusion in parallel with spray drying in a technology-agnostic approach to manufacturing. To reduce HME material requirements during technology selection, Serán utilizes the latest thermodynamic and process modeling tools to streamline excipient choice, drug loading, and processing conditions before making prototypes.

**Connect & Learn More**

www.seranbio.com
hello@seranbio.com