

Equipment Range

www.biopharma.co.uk

**Your Partner for Upstream/ Downstream Bioprocess
Lab to Production Equipment Excellence**



Capital Equipment Overview

Genevac Solvent Evaporators

Pharma Freeze Dryers

Food Freeze Dryers

Fill/Finish Equipment

High Pressure Homogenisers

Bioreactors / Fermenters + TFF

UK + Ireland

- Medicinal Chemistry
- ADME
- HPLC
- Protac
- Drug Discovery
- Environmental Analysis
- Flavours + Fragrances
- Oligonucleotides
- ADC's
- Clinical Biochemistry
- Natural Products
- Cannabinoids

- Tissue Engineering
- Wound Care
- PCR Diagnostics
- Biologics
- Drug Development
- Drug Manufacture
- Injectables
- Fill/Finish
- Liposomes/Exosomes

- Pet Food + Treats
- Soft Fruits, i.e. Strawberries, blueberries and banana
- Vegetables, i.e. pets, carrots, wasabi
- Collagen Scaffolds
- Dairy, i.e. whey proteins, lactoferrin, dried probiotics
- Nutraceuticals
- Human Food

- Fill / Finish
- Injectables
- Vaccines
- Commercial Manufacture
- Sterile Liquid Filling
- Diagnostic Liquid Filling
- 3-piece Filling
- GMP
- Grade A – Isolators
- Aseptic Freeze Drying / Lyo
- Aseptic processing

- Cell Lysis
- Emulsions
- Dispersions
- Nanoparticals / Liposomes / Exosomes.
- Recombinant Proteins.
- Particle Size Reduction.
- Drug Delivery
- Vaccines / Drug Discovery
- Seaweed / Algae

- Probiotics
- Vaccines
- Antibodies
- Therapeutic Proteins
- ADC's
- Biologics
- Cell + Gene Therapy
- Stem Cells
- Biosimilars
- Fermentation
- Alternative Meats

- BPS Capital Equipment sales are restricted to UK + Ireland only



Laboratory and Pilot Scale Freeze Dryers



Superior control systems allow in depth monitoring, analysis, with options for GMP compliance on floor standing systems:

- 21CFR Part 11 (documentation)
- VHP (cleaning methods)
- Clean room configuration
- Moisture determination techniques:
 - Pirani/convectron vacuum transducer
 - MKS Capacitance Manometer
 - Pressurise Test

Suite of Scalable Technologies

Available across freeze drying equipment from R&D LyoStar to production:

- ❑ **AutoMTM/SMART™ Freeze Dryer Technology** – Primary drying cycle optimization tool
- ❑ **LyoFlux TDLAS® Sensors** – Accurate measurement of vapour mass flow for calculation of critical product attributes
- ❑ **Tempris®** – Wireless temperature Sensors
- ❑ **ControlLyo®** – Nucleation Technology: Precise control of the freezing point



****Cycle development times reduced by up to 79%******

****Annual cycle development costs reduced by 60%******

Production Freeze dryers

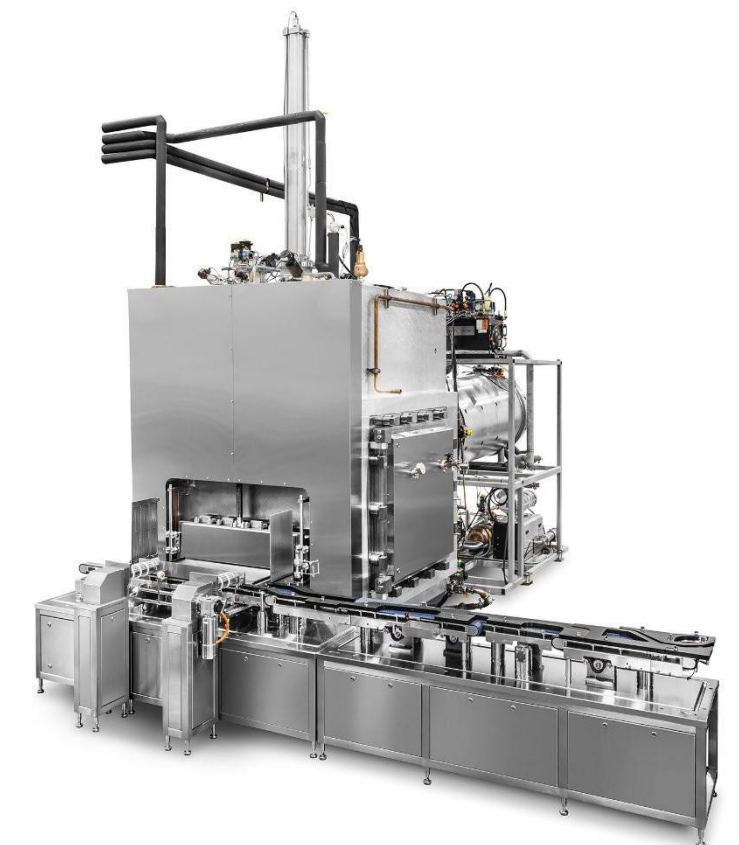
➤ Configured to order: Short lead-times to get you to market quickly and safely

➤ Scalable and transferrable: PAT tools and software facilitate scale-up from development to clinical phases

➤ Compact footprint: integrates with filling lines and semi-automatic systems

➤ CIP/SIP

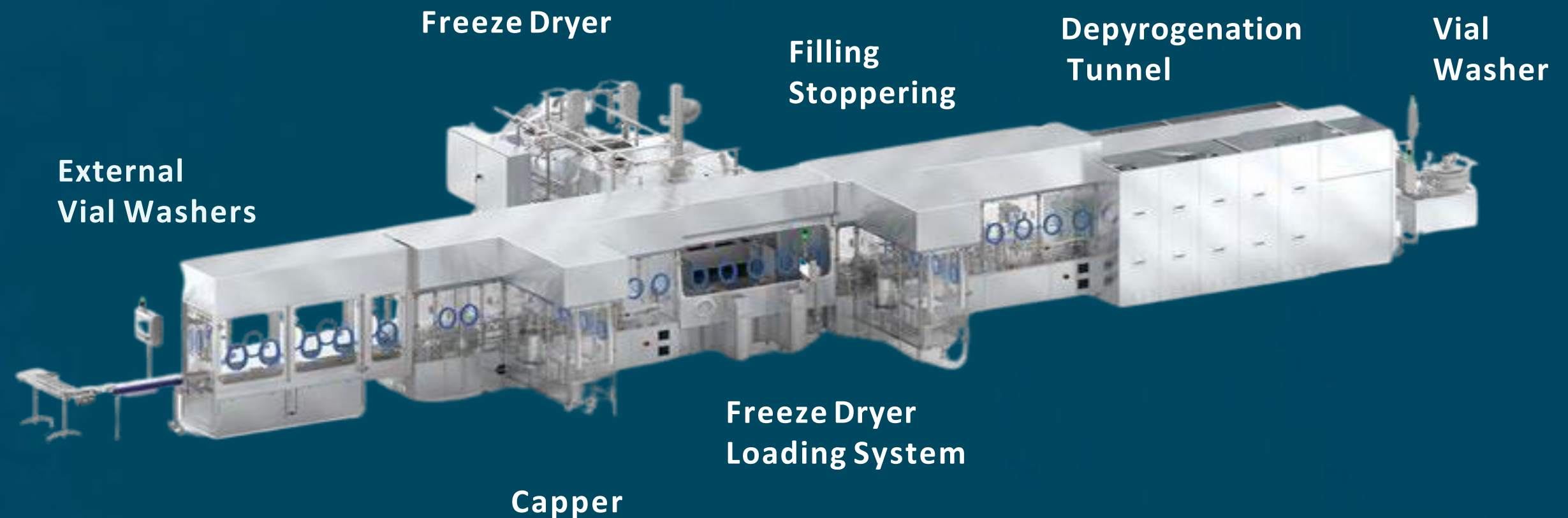
➤ Up to 100m² shelf area



* Hull LyoConstellation™ S10 Aseptic Freeze Dryer
as seen at the Biopharma Group GMP facility

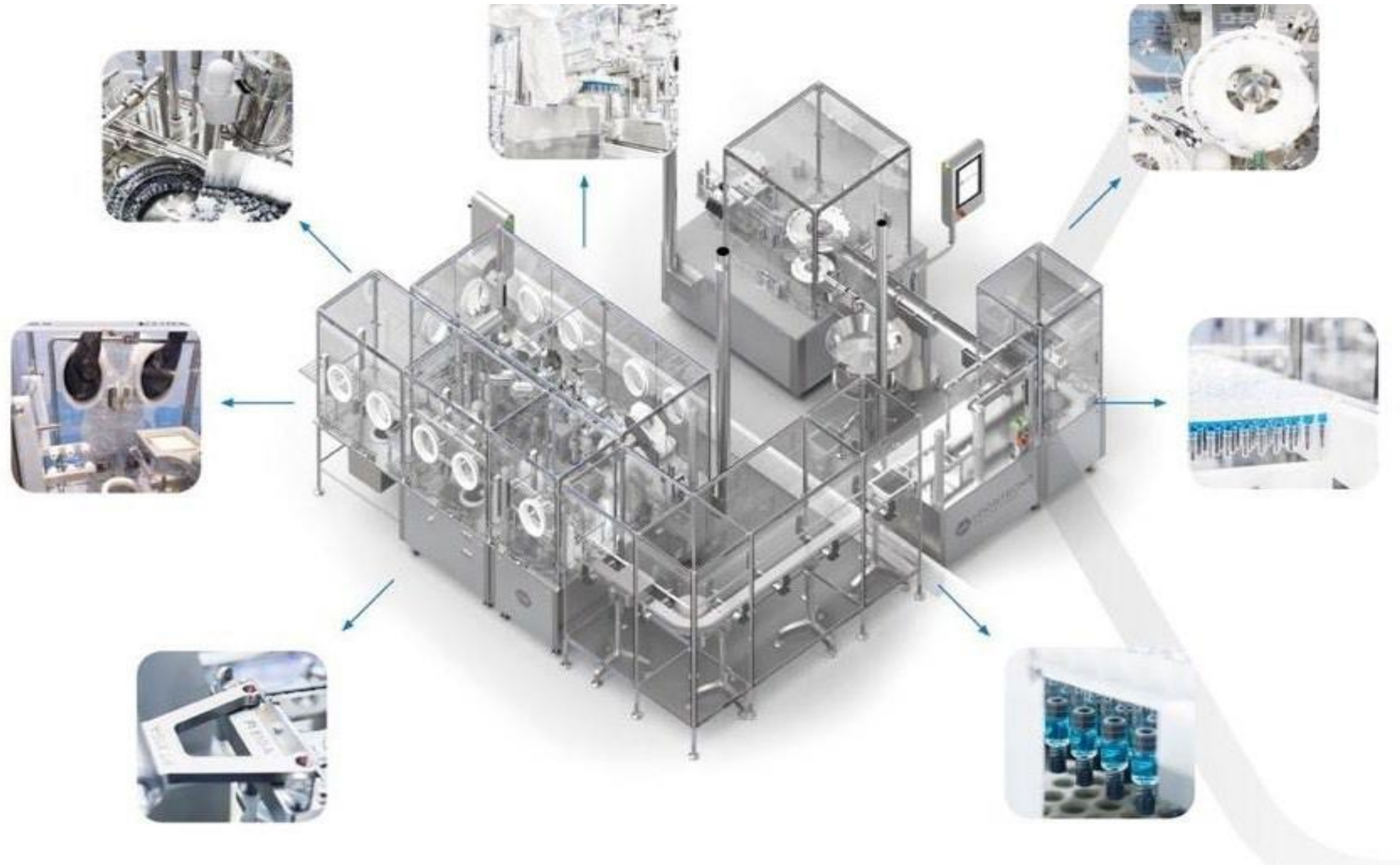
Liquid and Lyo Fill/Finish Systems

- **Vial Washers** – clean the inside and outside of the vial in a relatively small footprint
- **Depyrogenation Tunnels** – Sterilise vials with heat so they are pyrogen free
- **Fillers** – Fill the vials with product
- **Auto-Loaders** – Load the lyophilisation equipment (freeze dryers) with vials
- **Lyophilisers** – Freeze dry product
- **Capping** – Adds caps to filled or dried vials
- **External Vial Washers** – Clean outside the finished vial to remove any potential harmful drugs for the protection of operators and hospital staff
- **Trayloaders** – Load the vials for packaging



- **Modular standalone systems**
- **Turnkey fully automatic production line**

RTU Nested Vials, Syringe, Cartridge



Gellert Food Freeze Dryers



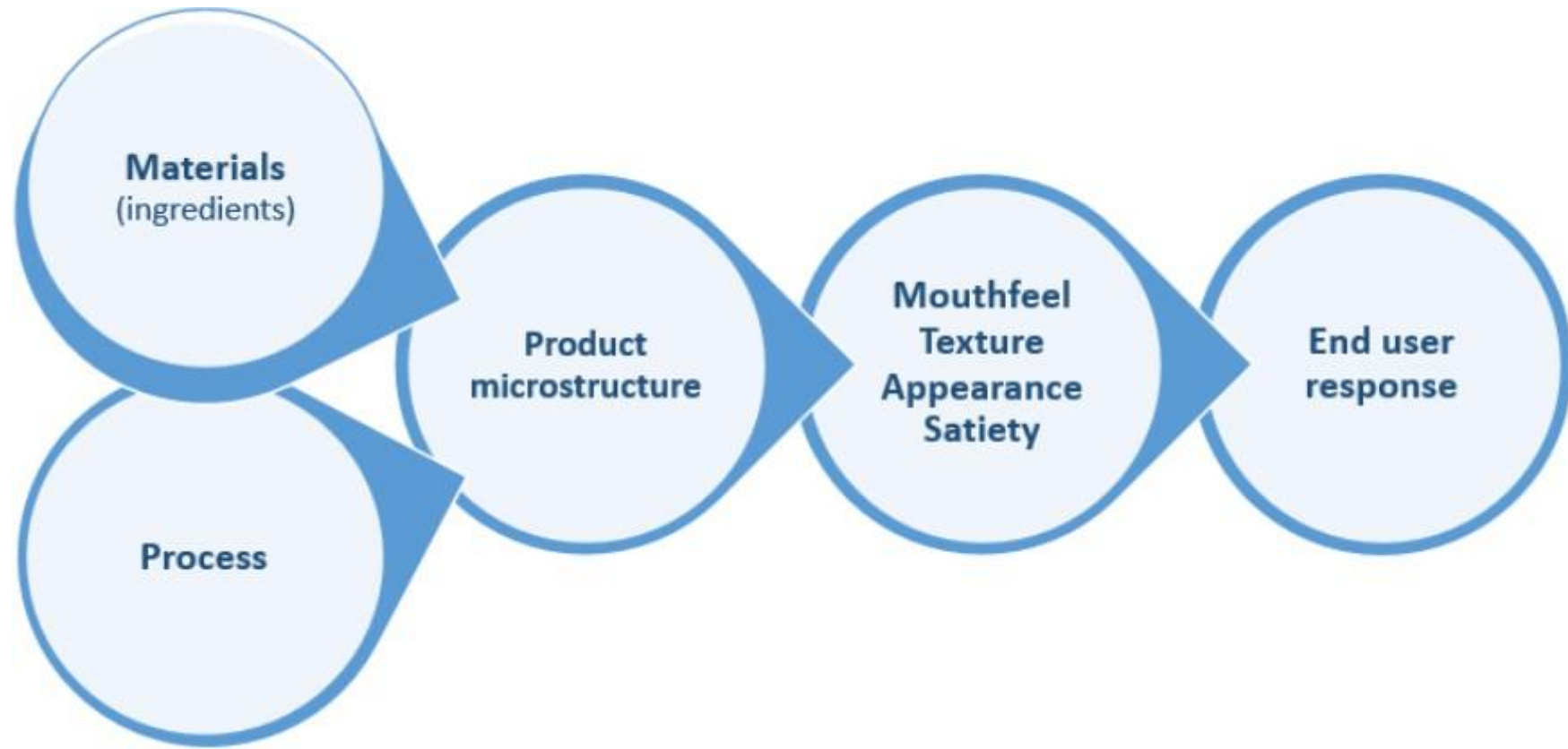
COMMON FREEZE DRYING APPLICATION AREAS



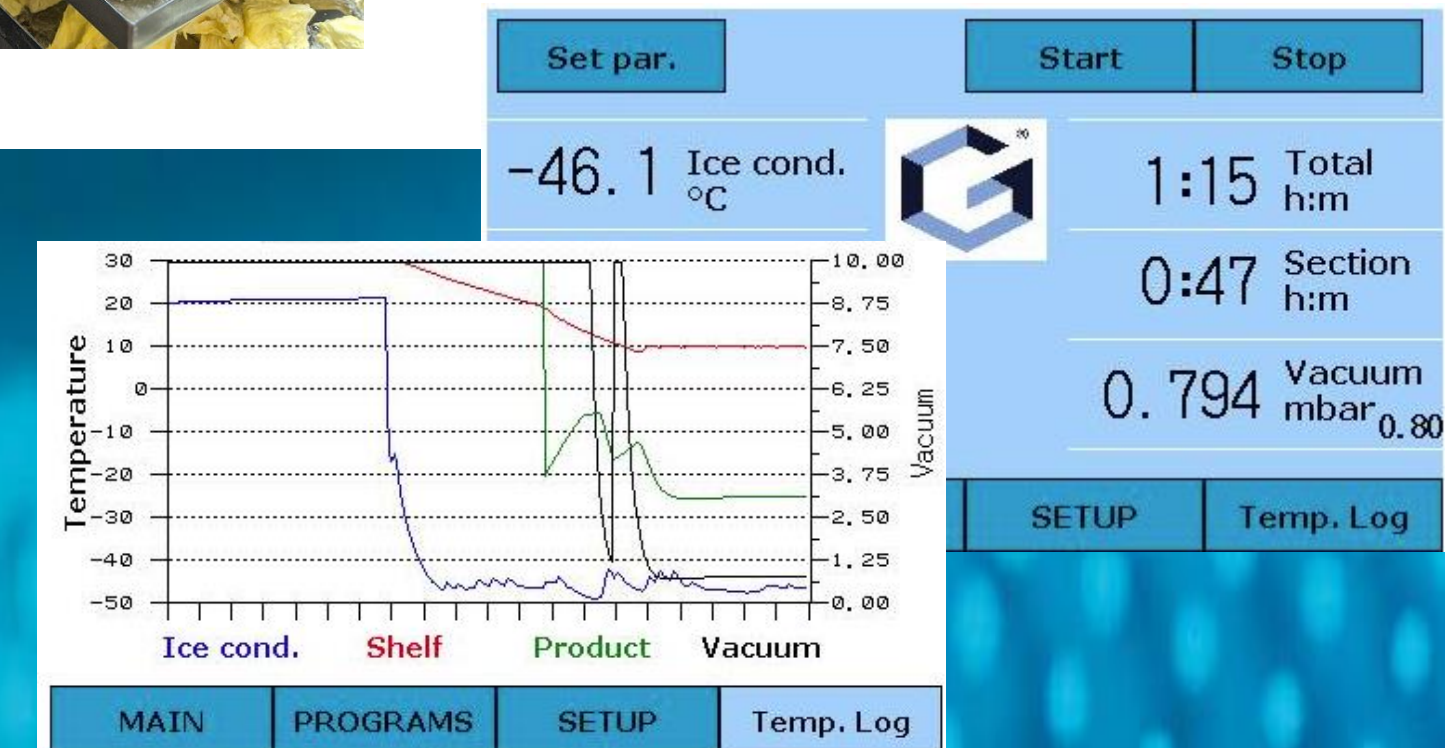
Gellert Freeze Dryers

- Built with scalability and ease of use in mind
- Auto Dry function minimalizes cycle time and user intervention whilst creating a smoother drying process
- Auto Dry even allows for multiple different products to be dried in the same cycle
- Silicon oil heat transfer system allows for precise control of material during the freeze drying cycle
- Available from 5L-1000L ice condenser capacity to accommodate for small scale projects to large scale production
- User friendly software / HMI

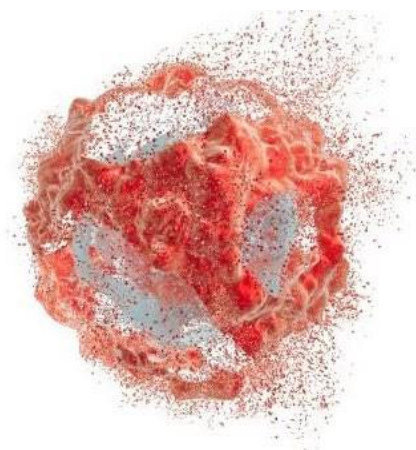
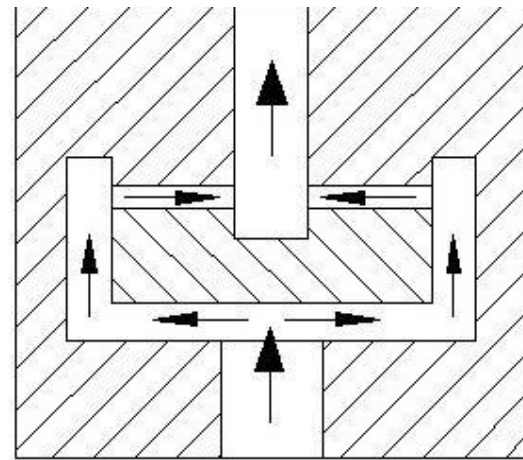
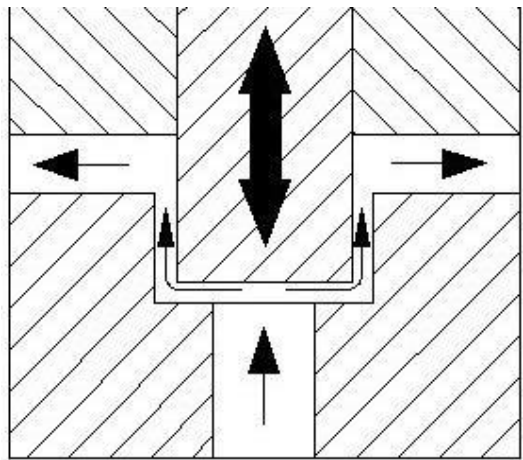
Freeze Dryers – Food & Nutraceutical Markets



In-Country Training, Service & Maintenance, Cycle & Formulation Development Support



High Pressure Homogenisers R&D to Commercial GMP



- Samples are forced through a narrow orifice at high pressures, which generates forces such as shear, cavitation, and turbulence
- Avestin high pressure homogenisers: adjustable from 500psi- 30,000psi homogenising pressure as standard
- Benchtop to production scale: ranging from 7ml batches up to 1,000L/hour
- Homogenisers are compatible with our optional Extrusion technology
- What cGMP options are available:

AVESTIN

Clean room suitable	✓
Data integrity/ 21 CFR Part 11 software compliant	✓
Stringent Cleaning Validation – CIP/SIP	✓
Sanitary extrusion technology	✓
Sanitary temperature control components	✓

Solvent Evaporation Equipment



Automate Your Way to Success!

The EZ-2 4.0 Bionic's automation friendly operation reduces human error, ensuring consistent and reliable sample runs every time.



- Designed with sample integrity in mind
- Built in functionality to minimise the risk of sample cross- contamination, loss, and foaming, due bumping
- Stringent temperature control possible, protecting samples against potential overheating
- Certain models are manufactured to withstand the presence of strong acids i.e. 6M HCL, or Nitric acid
- Designed with a small footprint in mind, for use in busy labs where space is a premium
- Able to select models capable of providing an inert gas purge (IGP)
- Options available for processes requiring crystallization for polymorph screening – Exalt

Solvent Evaporation Equipment



GENEVAC SOLVENT EVAPORATION

As the exclusive distributor of Genevac products across the UK, Ireland & France,

Biopharma Group

offers the next generation of high performance centrifugal solvent evaporators and concentrators for use in analytical science applications, chemistry and biology labs



Bionic EZ-2 4.0
Optimised
for
Automated
Operation



HT Series 3i
for
High Throughput



Rocket Synergy
for
High Speed
Evaporation



EZ-2 4.0
for
Parallel Sample
Evaporation



miVac
Centrifugal
Vacuum
Concentrators



Benefits include :

- Ergonomic Design
- Patented Temperature Control
- Built-in Bumping Prevention
- High Speed & High Throughput Systems
- Evaporation of multiple samples in parallel
- High Performance Pumps for optimisation and efficiency

Bioreactors and TFF Equipment



Designed to offer a high level of efficiency with an excellent level of flexibility, from smaller R&D through to full scale commercial production

- **Laboratory Scale:**
Bioreactor = 0.5 to 10L
TFF = 0.1m² to 0.7m²
- **Pilot Scale:**
Bioreactor = 10 to 50L
TFF = 0.5m² to 2.5m²
- **Production Scale:**
Bioreactor = 100 to 4,000L
TFF = 7m² to 65m²

CDMO Services



R&D



GMP



...THANK YOU!



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Your Partner for Lab Equipment Excellence