All PSL high containment solutions benefit from:

- Nitrogen purge system
- VHP capability
- Clean-In-Place (CIP) and Wash-In-Place (WIP) systems
- Fixed or lift-up windows
- Safe change HEPA filters ("push-push")

Front and rear operator working positions
- From laboratory to production size
- Gaged 4mm SS construction
- World recognised components and solvent resistant materials
- Designed according to required universal regulations
- HMI / PLC control

FULL PROCESS INTEGRATION
ERGONOMICALLY DESIGNED
CONTAINMENT PERFORMANCE TESTING
PSL is an award winning international manufacturer providing quality innovative technology with process development expertise to the pharmaceutical, biopharmaceutical, chemical and laboratory industries since 1989.

Our experienced engineering teams work closely with our in-house chemists to accelerate process development and create the most suitable and ergonomic solutions.

PSL’s established supply chain management ensures all components, sourced from across the globe, are of the highest quality and value. This enables market savings to be passed directly onto our customers.

OUR GLOBAL OFFICE BASE

PSL continues to increase its number of global offices, agents and distributors to aid the smooth distribution of its equipment to any part of the world.
In conjunction with our clients, we define Containment Performance Testing to achieve OEL parameters for each containment system. Our containment solutions can then be tested and validated to achieve guaranteed containment to nanograms level.

PSL generate performance test protocol, following industry best practice guidelines, such as ISPE guidelines. We use a third party industrial hygienist to monitor testing and generate a final performance report. Micronized lactose is typically used as the surrogate powder and an independent analytical testing laboratory is used to generate the final result.

PSL provide 3D models and full-scale product mock-ups of your chosen containment equipment. This allows ergonomic aspects to be addressed and the placement of process equipment to be reviewed and modified prior to production. We guarantee reliable manufacture quality through precision built systems designed for performance longevity, up to commissioning and installation (including IQ/OQ service).
**PSL’s Dispensing & Sampling Isolator**

- Auto control valves
- Integrated multi drum hoists with double inflatable seal
- Continuous liner bagout port
- RTPs / Split valve / Integrated airlock
- Internal cGMP weigh scale
- RH measurement and control available
- Internal vacuum cleaner

**Sampling from drums**

- Warehouse drum sampling
- Liquid & powder sampling
**CHARGING**

**PSL contained charging**

Contained process equipment:

**SlurryBox**
- API reactor charging
- Slurry vessel charging
- IBC's

**PSL pressure rated plug**

Reactor charging under pressure after charging has taken place. Eliminating the need for an isolation valve.
**DISCHARGE AND CONTAINED OFFLOADING**

**Contained Discharging Offloading**
- Filter dryer
- FIBC

**Contained Sampling and Heel Recovery System**
- Sampling port
- Plug valves
- Raking tools
- Warehouse drum sampling
- Liquid & powder sampling from drums
PSL can combine all these processes into high containment synthesis facilities.
**MILLING AND MICRONIZING**

**Milling Glovesbox**

PSL integration with other suppliers provides a real time in-line milling suite.

- Universal Milling Glovesbox can accommodate different mills in a single glovesbox
- PSL qualified UL panel builder
- Specially designed purged airlock for multiple entries
- Into the glovesbox
- Full milling facility

**Contained Mills**

- Micronizing
- Ball mills
- Quadro mills
- Jet mills
- Fitz mills

Front and back view of Interchangeable Milling System

Integrated in-line Feeder, Micronizing Jet Mill and Particle Size Analyzer
Sieving and Blending

- Integrated processes available: milling, sieving, blending, granulator, weighing
- Operator lifting aids
- Interlocked glove guards

Tablets and Filling

PSL provide high containment retrofit systems to existing capsule filling machines and tablet presses.

Xcelodose®: Micro-Dosing system

Xceloprotect™: High Containment Xcelodose® Micro-Dosing system
PSL Drum Filling and Continuous Liner systems

Extraction booths and gloveboxes: **FlowBox**

- Roller track
- In-flight Sampler
- Continuous liner loading table

- Metering systems
- Integrated Weighing systems
- Automation
PSL can combine all these processes into high containment formulation facilities.

**Full Formulation:** Sieving, Blending and Milling Integration

**Purged airlock and Rear Access**

**Multi Drum Hoist**
PSL Serve is our dedicated after sales customer care, on-site service and spares team. They are technical specialists, here to aid the smooth installation of new equipment, along with the servicing and repairs of existing PSL equipment and any spare parts required.

PSL Serve offers full installation, commissioning, training and preventative maintenance contracts. Information on our IQ/OQ packages is available upon request.

PSL products range from R&D and lab scale development up to large scale commercial production.