



*Containment  
Product Range*



# *Telstar ACE Containment*

## *Leading where others follow*

With more than 35 years of combined experience and a continuous investment in R&D, TELSTAR ACE provides equipment that brings advanced levels of protection to those who work with hazardous and toxic materials.

The company resources ensure the ongoing capacity to handle large scale high value and turn key projects. Leaders in customizing fully integrated systems, working in partnership with our customers and key supply chain vendors to provide the exact solution for every specific project requirement.

TELSTAR ACE proactively maintains and conforms to the latest ATEX, cGMP, and FDA regulations ensuring that our customers are supplied with concise detailed information and documentation with all equipments packages.



*TELSTAR ACE systems are commissioned to operate at their*

## Process containment solutions

Effective operator and/or product containment is essential for safety and hygiene of the production process.

TELSTAR ACE advanced barrier isolator systems provide the highest specification containment for handling Active Pharmaceutical Ingredients (API). The downflow booths and pack off systems provide operator protection by uni-directional air flow, highly customizable, these products are suitable for a range of containment levels.

TELSTAR ACE offers a full range of options and accessories for each specific application delivering the highest levels of operator, material and environment protection.

OEB	OEL range ( $\mu\text{g}/\text{m}^3$ )	Toxicological/ pharmacological properties & potency	Containment technology	Product
1 or A	1000 – 5000	Harmful and/or low pharmacological activity	None	-
2 or B	100 – 1000	Harmful and/or moderate pharmacological activity	Primary containment: HVAC / LEV / flow booth	-
3 or C	10 – 100	Moderate toxic and/or high pharmacological activity	Secondary containment: directed flow, down flow booth	1, 3
4 or D	1 – 10	Toxic and/or very high pharmacological activity	RABs / flexible containment / rigid isolator	2, 4, 5
5 or E	<1	Extremely toxic and/or extremely high pharmacological activity	Glove box / rigid wall isolator	2, 4



*optimal level, guaranteeing maximum safety and performance*

## High containment isolator systems

With the increasing demand for high containment and improved operator protection TELSTAR ACE is a world leader in this technology, with installations validated down to 2 Nano-Grams we can provide isolator systems for a wide range of potent compound handling operations and process containment solutions:

Potent Compound Handling	Process Containment
<ul style="list-style-type: none"><li>• Dispensing &amp; Sub-Division</li><li>• Charging &amp; Formulation</li><li>• Off-Loading &amp; Sampling</li></ul>	<ul style="list-style-type: none"><li>• Micronzing Containment</li><li>• Tablet Compression</li><li>• Tablet Coating</li><li>• Freeze Dryer Unloading</li><li>• Vacuum Tray Driers</li><li>• Blenders / Sieves</li></ul>

TELSTAR ACE high containment isolator systems are individually designed to the customer's precise specifications. Using ergonomic modelling and 3D design the solutions are tailored to meet the exact user requirements.

Containment systems benefit from proven designs allowing in process safe change gauntlets and safe change inlet & exhaust filtration. With the ability to control and monitor the atmospheric conditions inside the isolator, the systems can be designed to handle any type of product.

Available in 316L stainless steel, Hastelloy or flexible PVC, TELSTAR ACE isolator systems are designed with GMP in mind. Incorporating a high quality polished finish and radiused corners for easy cleaning.



*Potent compound handling laboratory isolator*



*Multi chamber*



*Potent compound handling reactor charging isolator*



*Potent compound handling dispensing & subdivision*





## *Transfer systems*

One of the most crucial aspects of isolation technology is the transfer of product/waste into and out of the isolator while maintaining containment or sterile conditions.

### *Contained Transfer System*

Constructed primarily of 316L stainless steel and acetal, the CTS is available in five sizes - 100mm, 150mm, 200mm, 310mm, and 450mm.



### *Drum Handling*

Custom designed drum handling solutions providing high containment ergonomic transfer of bulk material quantities. Fully electrical or pneumatically operated providing ATEX compliance as required by the project.

*For API process containment*



*Process containment integration of a tablet compression machine*



*Drum handling*

## *Aseptic / sterile isolators*

Sterile Isolation systems require an environment free from biological hazards and are typically positively pressurized. TELSTAR ACE have significant experience in the use of Vaporised Hydrogen Peroxide (VHP), for the effective surface decontamination of the isolators.

A range of two-glove, four-glove and half suit Isolators are available for the safe and contamination free processing using industry standard integral and manifolded systems.

Small mobile transfer Isolators are used for the safe gassing of the external surfaces of the product containers, on a batch by batch basis using Vaporised Hydrogen Peroxide.



## *Process equipment*

### *Pack Off Heads*

To complement the range of TELSTAR ACE containment products, our process equipment containment solutions can be provided stand alone or incorporated into our isolators / downflow booths.

The TELSTAR ACE pack off head provides operator protection and a primary form of powder containment during the off loading of pharmaceutical product. Typically installed as part of a horizontal cross flow booth our pack off heads are suitable for use with continuous or single liners and can be sized to suit any drum, bag, box or FIBC.

Available in a number of configurations, TELSTAR ACE provide inward, outward or downward inflatable pack off heads.

Incorporating local ventilation and extraction our sealing heads are available for applications where space is limited and a high degree of containment is required.



## Downflow booths

TELSTAR ACE downflow booths utilize a proven uniform downward air pattern providing high levels of operator protection (typical exposure level from the standard booth using airflow only = OEL 50 to 100 $\mu\text{g}/\text{m}^3$ ) from harmful airborne contaminants generated during manual powder handling operations such as sampling, charging and dispensing. The downflow booths also provide protection to the product (Class ISO 5) from the surrounding area creating a clean and safe processing zone.

Down flow booths and workstations provide a safe, controlled working environment and are frequently used to carry out a wide range of powder handling operations. Operator protection is achieved by evenly distributing Hepa filtered clean air across and through the working area where the material is being handled, forcing airborne particles downward and away from the operators breathing area.

### Main features and options

- Stainless steel AISI 304L/316L or epoxy coated carbon steel frame
- Containment zone: 1,4m (4,6') or 1,8m (5,9')
- Laminar flow velocity
  - US: 0,5 m/s (98fpm)
  - EU: 0,45 m/s
- Two main filtration stages: EU8 pre-filter and Hepa H13 filter
- PLF air distribution screens
- F8 prefilter pressure gauge
- H13 filter pressure gauge
- Terminal Hepa filters
- Integrated lighting
- Packaged cooling options
- Alarms package and fully automated control systems



Compact recirculation SS downflow booth



Modular recirculation SS downflow booth



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