MUSA

SHIELDED ISOLATOR FOR ^{68}GA AND ^{18}F DISPENSING

FLEXIBLE | VERSATILE | SAFE

COMECER

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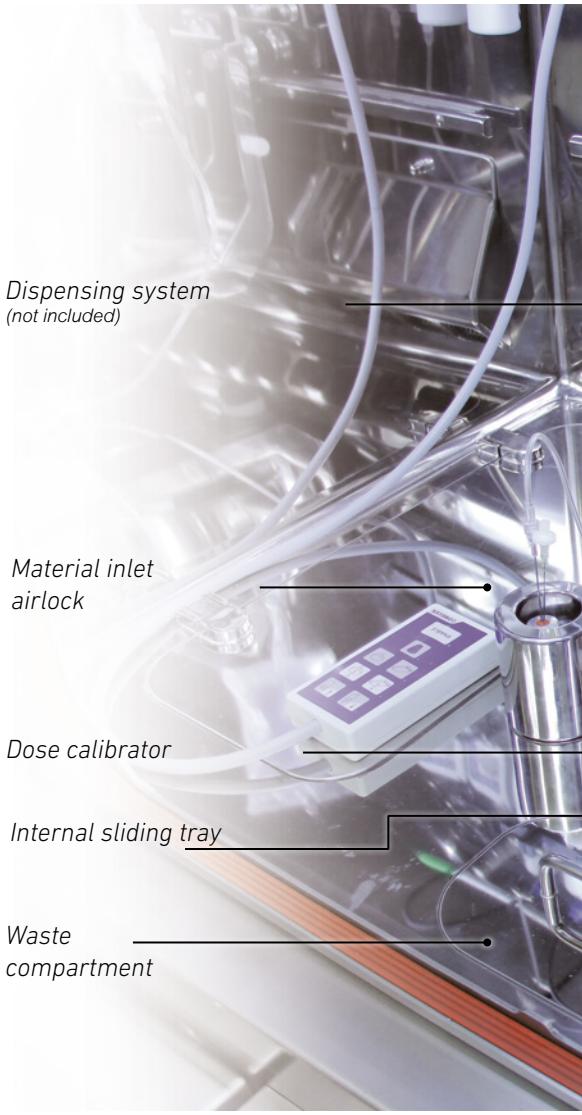
MUSA is a shielded laminar flow isolator suitable for handling beta- and gamma-emitting radiopharmaceuticals in an aseptic environment, in accordance with the Good Radiopharmacy Practice Standards in the Preparation of Radiopharmaceuticals in Nuclear Medicine (simple preparations and extemporaneous preparations).

- *Flexible and modular configuration*
- *Designed to optimise the processes of products based on ^{68}Ga*
- *Suitable for labelling or fractioning of various radioisotopes, including beta emitters such as ^{177}Lu and ^{90}Y*
- *VPHP Connections (Vapor Phase Hydrogen Peroxide)*
- *Dose calibrator (available in versions 2 Ci or 20 Ci) with a touch screen console*
- *cGMP compliant*

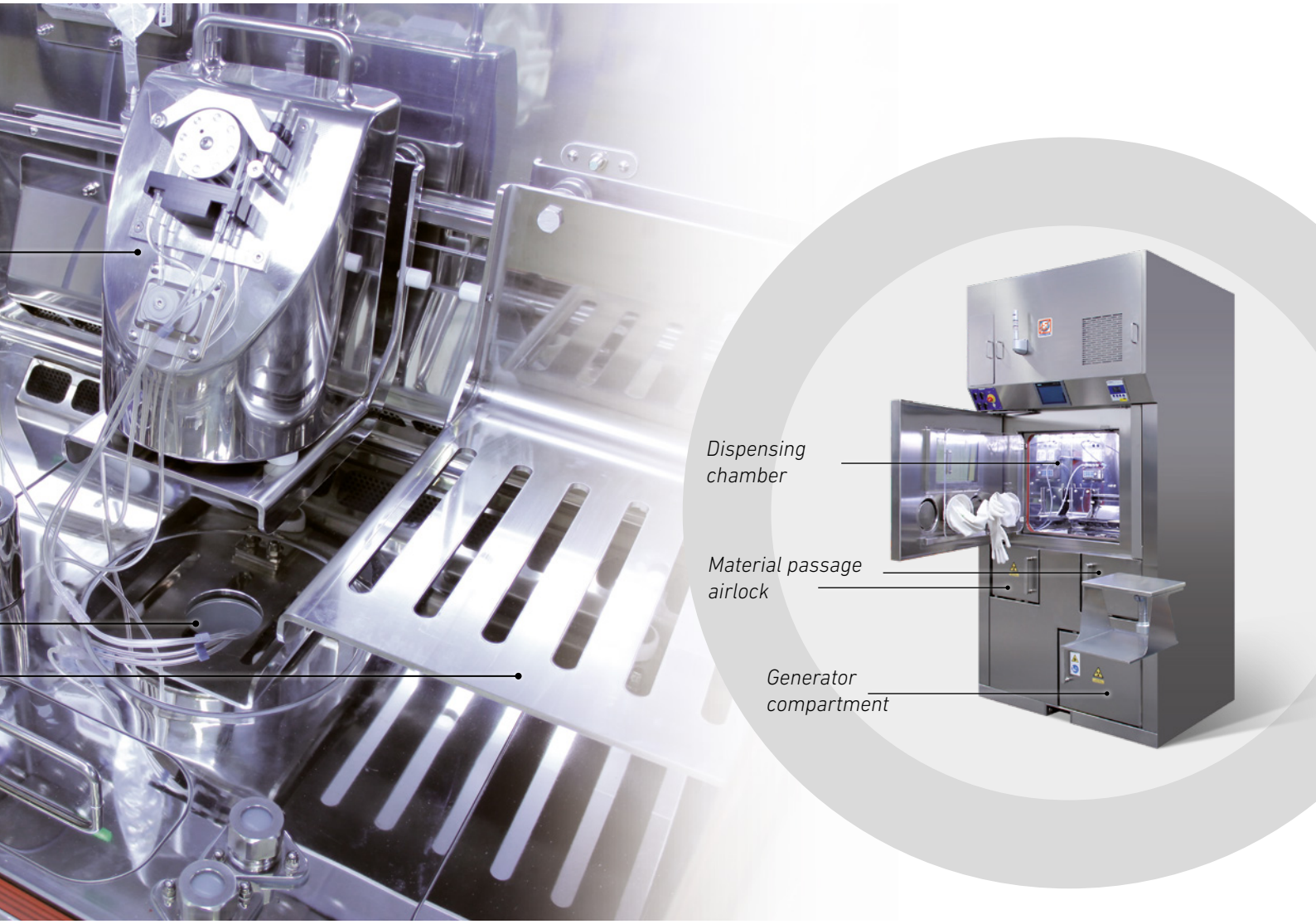


MUSA is designed to optimise the processes with ^{68}Ga (generator elution ^{68}Ge/^{68}Ga, synthesis and dispensing) and dispensing of radiopharmaceutical based on ^{18}F. In addition, MUSA is adequate for labelling and fractioning various emitting beta radioisotopes such as ^{177}Lu and ^{90}Y by means of compact synthesis modules and thanks to the specific configuration for beta emitters.

MUSA is available in various models, which correspond to the following operating modes:

- **Fractioning of ^{18}F or PET/SPECT emitters**: thanks to the input and output pre-chamber the isolator can be used for fractioning of aseptic processes of PET or SPECT radiopharmaceuticals loaded through a shielded container. The pre-chamber is designed to allow access and automatic lifting onto the work surface of the bulk container or the discharge of the vials/syringes in shielded containers.
- **Synthesis and dispensing in main chamber (Class A LAF)**: thanks to two sliding support surfaces, you can install a compact module in the main chamber for the synthesis of ^{68}Ga or ^{177}Lu and ^{90}Y and a peristaltic pump dispenser (177Lu) (Comecer mod. TIMO2) that can fractionate the product in syringes and calibrate the active dose. ^{68}Ga generators are housed in a separate compartment isolated from the main chamber.
- MUSA has been designed to guarantee radioprotection to the operator and the utmost decontamination and cleaning procedures effectiveness.

It is possible to equip the cell with lateral pharmaceutical prechamber.



Main technical features

- Class A dispensing chamber equipped with laminar flow on the entire area and fitted with handling gloves
- Class B material passage chamber (airlock) equipped with an automatic lifting system
- Dose calibrator equipped with pneumatic system to handle the vial
- Class B side material passage pre-chamber (side airlock) equipped with handling gloves*
- Class B waste compartment
- Class B generator compartment
- Front shielded door fitted with a shielded window and hand passage doors
- Shielded chambers under constant negative pressure
- Filtration system for laminar flow made with a ULPA U15 type absolute filtering cartridge
- Air inlet filtration system made with a HEPA type absolute filtering cartridge
- Air outlet filtration system made with active carbon filtering cartridge
- Touch screen operator panel
- Particle counter sensor*
- Geiger-Muller probe to detect radioactivity inside the cell and door interlock management*
- Sliding trays inside the chamber to increase the actual work area*
- Automatic ventilation closing system (AVCL) with set-up for connecting hydrogen peroxide solution generators (VPHP)*
- UVC germicide lamp*

** On the customer's request*

Equipment lines

The machine is available in different equipment lines to fulfil any requirement.

Models / Main equipment	MUSA ^{68}Ga 50 SINGLE AIRLOCK	MUSA ^{68}Ga 50 SINGLE AIRLOCK AND GENERATOR COMPARTMENT	MUSA ^{68}Ga 50 DOUBLE AIRLOCK AND GENERATOR COMPARTMENT	MUSA ^{68}Ga 50 DOUBLE AIRLOCK GENERATOR COMPARTMENT AND LATERAL PRE-CHAMBER	MUSA ^{68}Ga 50 BETA ANTI-ACID SINGLE AIRLOCK AND GENERATOR COMPARTMENT
Shielding					
Lead (mm of Pb)	50	50	50	50	50
Polypropylene (mm of PP)	-	-	-	-	20
Temperature and humidity sensor	S	S	S	S	S
Anemometer for laminar flow	S	S	S	S	S
Dose calibrator	S	S	S	S	S
Generator compartment	-	S	S	S	S
Sliding trays for modules/dispensers	-	S	S	S	S
Left lower pre-chamber	S	S	S	S	S
Right lower pre-chamber	-	-	S	S	S
Side pharmaceutical pre-chamber (left)	-	-	-	S	S
Waste compartment	S	S	S	S	S
Hand insertion doors	S	S	S	S	S
Smart Geiger (internal environmental monitoring system)	O	O	O	O	O
LED bulb lighting	S	S	S	S	S
Notebook support	S	S	S	S	S
Light column signalling machine status	S	S	S	S	S
Internal connections for technical gases	S	S	S	S	S
Sealed cable inlet	S	S	S	S	S
Shielded holder					
Shielded container for vials mod. CF18	O	O	O	O	O
Shielded container for vials mod. CF18-T	O	O	O	O	O
Shielded container for cartridge mod. Letho	O	O	O	O	O

S= Standard; O= Optional

Technical data

Support frame material			Carbon steel treated with epoxy paints
External casing material			AISI 304 - Scotch-Brite™
Working chamber material			AISI 316L - Mirror-Bright Polypropylene
Lead purity	Title		Pb 98% + Sb 2%
Shielded glass dimensions	mm		400 x 250 (w x h)
Weight	kg		from 6500 to 8500
Side pre-chamber internal dimensions*	mm		601 x 662 x 589 (w x d x h)
Working chamber internal dimensions	mm		970 x 590 x 738 (w x d x h)
Net dimensions on the lower pre-chamber tray*	mm		155 x 400 x 160 (w x d x h)
Generator compartment dimensions*	mm		300 x 485 x 280 (w x d x h)
External dimensions	mm	Without side pre-chamber With side pre-chamber*	1276 x 1160 x 2600 (w x d x h) 1864 x 1160 x 2600 (w x d x h)

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