DEPURECO · II 1/2D EX H IIIC T140°C DA/DB

Depureco BL 45 DEX 1/2D INERT

The BL 45 DEX 1/2D INERT is the same physical unit as the BL 45 DEX 1/3D INERT (SKU A1295) -- it simply bears the ATEX marking II 1/2D Ex h IIIC T140°C Da/Db on this slug, which gives it access to stricter zone combinations: internal Zone 20 (continuous reactive dust atmosphere) and external Zone 21 (dust clouds occur occasionally). It is the choice when the collection chamber itself is located in a room where powder is continuously in the air -- e.g. battery material blending stations, aluminium grinding cabinets with constant process operation or lithium powder handling in pharma pilot production. The inerting container, safety hydrogen vent, spark-trap and cartridge HEPA13 filter are identical to the 1/3D slug; the difference lies in the installation's zone classification here requiring EPL Da internal (highest requirement) and EPL Db external. Same price (4,280 €), same documentation, same 1.1 kW brushless motor on 110/230V single-phase.

APPLICATIONS

- Battery blending station where lithium-bearing electrode powder is continuously in the air
- Aluminium grinding cabinet with process operation and closed work environment
- Pharma pilot powder handling with Zone 20 classified surface
- Titanium powder storage where explosivity-testing research requires inerting
- 3D-print cleaning room with continuous powder exposure (Zone 20) and dust clouds outside
- Magnesium foundry with moisture control and active collection of reactive material

Technical specifications

ATEX marking	II 1/2D Ex h IIIC T140°C Da/Db
Internal / external zone	20 / 21
Motor type	1x brushless ATEX-motor, 1-faset 110/230V 50/60 Hz
Airflow	220 m³/h
Vacuum	230 mbar (2345 mmH_2O)
Container	45 L
Sound pressure	72 dB(A)
Filter class	H class
Filter type	Cartridge-primaerfilter antistatisk polyester HEPA13 (EN 60335-2-69 klasse H) + E10 cooling-air + E10 absolutfilter-udblaesning
Primary filter	Cartridge antistatisk polyester klasse HEPA13
Cleaning system	Manuel filterrens (bagudtryk)
Collection system	Detachable container + INERT neutralisation bath
Material	Lakeret staalkonstruktion, AISI 304 stoevbeholder med N2-fluxet inerting-indsats
Power	1.1 kW
Voltage	230 V / 50-60 Hz
Venturi units	0 pcs
Inlet	Diameter 50 mm
Dimensions (L x W x H)	550 x 620 x 1400 mm
Weight	50 kg

Questions and answers

Why would I need the 1/2D variant rather than 1/3D?

It depends entirely on your installation's zone classification. 1/2D is required when the internal chamber (where powder is collected) is in Zone 20 -- i.e. explosive dust atmosphere is continuously or long-term present. 1/3D is sufficient when both internal and external are Zone 22 (short-lived, infrequent dust cloud). In practical terms, 1/2D is the choice if your work process *produces* the powder (grinding, milling, blending), 1/3D is the choice if it is only *collected* after the process ends. Price and hardware are identical; only the zone documentation differs.

How much N2 does it use per shift?

The consumption estimate for an 8-hour shift under normal operation is 3.8-7.2 Nm³ nitrogen (i.e. 8-15 Nl/min continuously plus initial flushing at start). Expect around 5 Nm³ per shift for reactive aluminium collection at normal factory humidity. A 200 bar N2 bottle (50 L, 9.3 Nm³) lasts two shifts; a 300 bar fibre tank (50 L, 14 Nm³) lasts just under three. If your consumption exceeds 3 shifts daily, it is economical to consider a local N2 generator (PSA or membrane). We can help with sizing.

Can I mix powder types in the same container?

No. Reactive metal powders can react with each other -- e.g. aluminium + rust-bearing iron oxide can form a thermite reaction when rubbed together. Thermite is *self-sustaining* and cannot be extinguished. Similarly, lithium can react with copper carbonate or other transition-metal compounds. Rule of thumb: one powder type per collection cycle, empty and clean the container between shifts if the powder type changes. Our service package includes cross-contamination protocols for multi-production environments.

How do I empty the container safely?

Emptying must happen in an inerted environment -- either a glovebox with N2 atmosphere or a ventilated take-down station with continuous N2 flux. The BL 45's container is constructed so that it can be removed in closed form (sealed clamp-lock top) and transported to an external station for emptying. For manual emptying: (1) close N2 supply, (2) wait 2 minutes for pressure to equalise, (3) remove the container in closed state, (4) open only at the emptying station. Reactive powder must be handled by trained personnel with PPE (IIB-certified suit and full-face mask) per EN 14491 and the relevant SDS.

Contact and advisory

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