

TIGER-VAC · II 2GD EX D IIA T3 GB -- EX T IIIC T200°C DB IP6X -- 0 °C ≤ TA ≤ +40 °C -- LCIE 03 ATEX 6297 -- EN 17348 WT

Tiger-Vac EXP1-10 (IT-40L) EX (CFE) HEPA W/3D TOOL KIT



The Tiger-Vac EXP1-10 (IT-40L) EX (CFE) HEPA W/3D TOOL KIT is a mobile immersion separator -- a vacuum where the recovered powder does not land in a dry container but is drawn straight down into a liquid bath. Tiger-Vac describes the principle as recovery and inertisation of combustible dust into a liquid immersion bath: as long as the particles stay wetted they cannot form a dust cloud, which removes one of the five conditions a dust explosion needs. That is the essential difference between this machine and a conventional ATEX vacuum with a bag filter. This model is intended for water (not oil) and needs 12.3 L of water in the recovery tank before use. Collection itself happens in a conductive disposable wet bag rated at 3 L, which can be sealed and removed without the powder ever being dry. A degassing vent releases gas from the unit automatically, and a liquid level indicator lets you check the bath without opening the tank. CFE stands for Coalescing Filter Element -- a coalescing filter that strips moisture from the outgoing air and filters at HEPA grade, which Tiger-Vac states as 99.97 % at 0.3 micron. The motor is a single-phase 1 kW TEFC unit (Ex d IIA T3 Gb) delivering 224 m³/h at 1550 mmH₂O. The tank is AISI 304 stainless steel and the machine stands on a four-wheel dolly. A complete static-dissipative (SD) accessory set is included, together with a dedicated 3D tool kit for print chambers and powder handling.

APPLICATIONS

- Recovery of reactive metal powder from SLM and DMLS printers -- aluminium, titanium, magnesium
- Emptying and cleaning of build chamber, overflow container and sieving station
- Powder handling where dry collected metal dust would itself be an ignition risk
- Zone 1 gas and Zone 21 dust, where both vapours and combustible dust may occur
- Cleaning around powder stations in additive manufacturing and metallurgical laboratories

Technical specifications

ATEX marking	II 2GD Ex d IIA T3 Gb -- Ex t IIIC T200°C Db IP6X -- 0 °C <= Ta <= +40 °C -- LCIE 03 ATEX 6297 -- EN 17348 WT
Internal / external zone	-- / 21
Motor type	1-faset TEFC-motor, eksplosionssikret (Ex d IIA T3 Gb / Ex t IIIC T200°C Db IP6X), 1 kW / 4,5 A
Airflow	224 m³/h
Vacuum	152 mbar (1550 mmH ₂ O)
Container	3 L
Sound pressure	79 dB(A)
Filter class	H class
Filter type	CFE koalescensfilter i HEPA-grad -- Tiger-Vac angiver 99,97 % ved 0,3 mikrometer
Primary filter	Væskebad (immersion) -- pulveret opsamles vådt i en ledende engangspose
Cleaning system	Væskebad -- ingen tør filterrensning; badet skiftes sammen med vådposen
Collection system	Detachable container
Material	AISI 304 rustfrit stål
IP class	IP6X
Power	1.0 kW
Current	4.5 A
Voltage	230 V / 50 Hz / 1~
Inlet	Diameter 38 mm
Dimensions (L x W x H)	480 x 460 x 860 mm
Weight	31.8 kg

Questions and answers

Why should metal powder be collected wet?

Because dry metal powder in air is among the most dangerous combustible dusts there is. Aluminium, titanium and magnesium have low minimum ignition energy, and a dry container full of fine metal powder is effectively an explosive chamber waiting for an ignition source. In an immersion separator the powder is drawn straight into a liquid bath. The particles are wetted and cannot form a dust cloud -- and without a dust cloud there is no dust explosion. Tiger-Vac calls the principle inertisation in a liquid bath. Note that the method places demands on the liquid: some reactive metals react with water, and there you need a model that can run with oil instead. If you are unsure what your powder tolerates, talk to us before choosing a model.

What does EN 17348 WT mean?

EN 17348:2022 is the product standard for vacuum cleaners used in explosive atmospheres. It classifies machines by how the collected dust is handled. DT means dry type -- dry collection in a container or bag. WT means wet type -- wet collection, where the dust is held in a liquid. This model is WT, and that is not a detail: the classification says the machine is designed and tested specifically to keep combustible dust wet, not to collect it dry. A DT machine must therefore not be substituted for reactive metal powder, even if it carries the same ATEX marking.

What is the difference between this model and the DT version?

The two models share the same motor, the same airflow and the same ATEX marking. The difference is tank and liquid. This model, the EXP1-10 (IT-40L) EX (CFE), sits on a four-wheel dolly, runs on water only and has a 3 L wet bag. The enhanced version, EXP1-10 (IT-40L) EX DT (CFE), has a detachable tank (DT) so the tank can be wheeled away and swapped without downtime, runs on either water or oil, and has a 4.5 L wet bag. Choose the DT version if your powder does not tolerate water, or if you empty often enough that a detachable tank saves real time.

Where may the machine be placed?

The marking is II 2GD, that is ATEX category 2 for both gas and dust externally. Specifically the unit may be placed in Zone 1, where an explosive gas atmosphere is likely to occur in normal operation, and in Zone 21, where the same applies to explosive dust. Ambient temperature must be between 0 °C and +40 °C. The machine does not carry a separate internal Zone 0/20 marking; internal safety rests on the liquid bath, not on a zone certification of the internal space. If your print room is not zone classified at all, an ACD machine to IEC 60335-2-69 Annex AA may be enough -- but not for reactive metal powder.

Contact and advisory

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