

Maintaining Powder Quality with the ASURE3D™ Powder Cabinet.

Perfect way to store additive manufacturing powders.



The ASURE3D™ Powder Cabinet, atmosphere control for powder metal storage quality, from Messer was designed specifically to retain and protect the quality of valuable, sensitive additive manufacturing (AM) metal powders from the adverse effects of ambient air and humidity.

Benefits of the ASURE3D Powder Cabinet at a glance

- Optimized storage of high-value AM powders
- Consistent powder quality levels – from delivery to application
- Enhanced operator safety
- Less gas wastage with demand-driven purge gas flow and two different purge modes
- Ease of operation and straightforward commissioning

Today's AM storage challenges

Similar to the gas used in AM processes, the metal powder also has a huge impact on the microstructure and physical properties of the printed product. The powder must be of a defined and consistent quality, which means that correct storage and handling are essential.

Typically, powder is stored on an open shelf somewhere near the 3D printer until it is needed. However, ambient air and humidity in particular affect the powder and its chemical and physical properties, causing it to age. Some manufacturers store powder in a closed cabinet, but here also, it can react with the atmosphere in the cabinet. Even if the cabinet is purged, ambient air and humidity flow in each time the doors are opened, resulting in contamination and degradation of the powder.

Advantages of the ASURE3D Powder Cabinet

We developed the ASURE3D Powder Cabinet to resolve this storage challenge. It uses a selective purge gas stream to maintain a non-critical moisture value in the cabinet. The ASURE3D Powder Cabinet works by continuously measuring humidity levels. Whenever the doors are opened and humidity rises, the cabinet triggers a high-volume purge gas flow as soon as the doors close again to rapidly remove moisture in the air. It then applies a lower stream of gas to ensure a consistently low level of humidity until the doors are opened again to remove more powder. It thus protects sensitive substances from ambient air and humidity, making them less prone to contamination while improving safety for operators.

Secure handling customized to your needs

Our solution includes:

- An ASURE3D Powder Cabinet with moisture control and monitoring unit, a flow control unit for the purge gas stream and a specially designed purge gas supply logic
- Supply scheme for purge gas
- On-site support – process and technical support, maintenance included
- Gas safety – equipment, safety checks and training



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