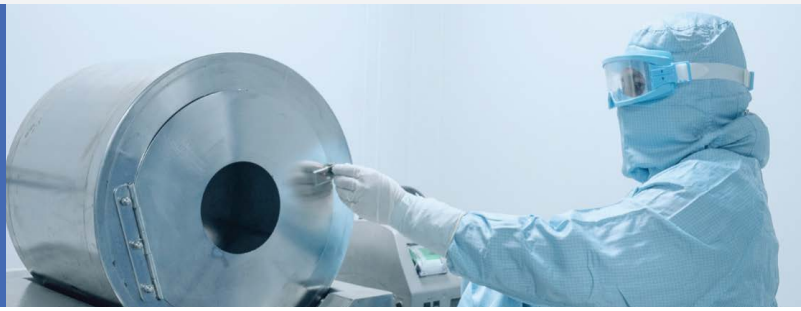
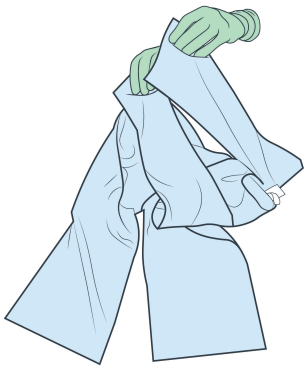
TECHNICAL
KNOWLEDGE
NOTES

HELMKE DRUM DATA INTERPRETATION

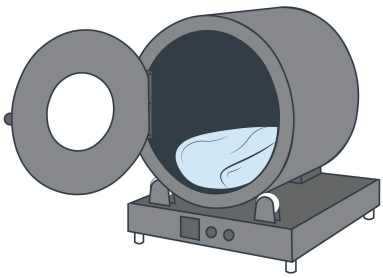


WHAT IS HELMKE DRUM TESTING?

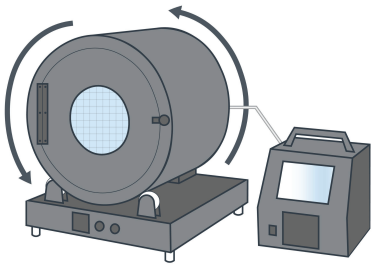
- A test to measure how many particles are released from a garment, or item, when it is moved.
- It follows the method described in the US standard IEST-RP-CC003.5.
- The garment is placed inside a rotating drum and tumbled under dry, controlled conditions.
- A particle counter then measures the particulate in the drum air during the 10-minute tumbling and calculates an average per minute, which is used to determine the particle emission rate from the garment.
- The particle emission rate is representative of how many particles a garment releases when worn.
- Helmke drum measurements are not suitable for mops/wipes/gloves (these use a different test).



Cleanroom garment is folded



Cleanroom garment is placed in the test drum



Particle sampling is conducted while the drum tumbles the garment

HOW ARE CLEANLINESS CLASSIFICATIONS DEFINED?

- The IEST standard for specific garment types defines limits for: frocks, coveralls and hoods.
- Limits are based on medium-sized garments.
- Based on the particulate levels, items will be assigned a ‘cleanliness category’.

WHAT DO THE CLEANLINESS CATEGORIES MEAN IN PRACTICAL TERMS?

Cleanliness categories indicate the expected particle release under normal use:

- **Category I:** Very low particle shedding = suitable for critical cleanroom areas
- **Category II:** Moderate particle shedding = suitable for less critical cleanrooms
- **Category III:** Higher particle shedding = may be used in non-critical or peripheral areas