

Inhalation Product Testing

Inhalation products are drug-device combination products that incorporate drug products, drug delivery devices, and container closure systems. These products deliver drugs directly to lung to control chronic conditions such as asthma or COPD, as well as treat acute respiratory attacks and infectious diseases.

Types of Inhalation Product

- Metered-Dose Inhalers (MDIs)
- Dry Powder Inhalers (DPIs)
- Aqueous Droplet Inhalers (ADIs)
- Nebulized Solutions/Suspensions
- Nasal Sprays

STEMart provides a comprehensive suite of testing services to help manufacturer assess compliance with standards and regulatory requirements.

Test Capabilities

- **Delivered Dose Testing:** Measure the total amount of drug emitted from the drug device that a patient might be expected to receive during a treatment period.
- **Delivered Dose Uniformity (DDU) Testing:** Evaluate the uniformity of the delivered dose within and between devices.
- **Delivered Efficiency Testing**
- **Particle Size or Droplet Size Testing:** Measure the size of particle or droplet with laser diffraction to provide valuable performance data for early stage of formulation development.
- **Aerodynamic Particle Size Distribution (APSD) Testing:** Measure the drug particle size distribution to investigate how much drug is delivered and where it will deposit in the lung.
- **Particle Loss Testing**
- **Mass Median Aerodynamic Diameter (MMAD) Testing**
- **Plume Geometry Testing:** Determine the shape, angle and duration of plume which have a great influence on the uniform delivery, absorbance and bioavailability of the product.
- **Spray Pattern Testing**
- **Nebulizer Compressor Testing**
- **Pressure and Flow Testing**

- Respiratory Filter Testing
- Foreign Particulates Testing
- Microbial Limits
- [Extractables & Leachables](#)
- [Chemical Characterization](#)
- [Impurities Identification](#)
- [Stability Testing](#)
- [Packaging Solutions](#)

STEMart provides comprehensive testing services to help manufacturer investigate the interactions, safety and efficacy of all component materials and the drug products in the inhalation products. If you want to learn more detail about our testing services, or would like to consult with the experts at STEMart, please feel free to [contact us](#).