Introduction
Metabonded inhaled MDIs are the most widely used inhaled dosage form, yet important pharmaceutical development challenges remain unmet for this drug delivery system. These challenges include:
- High fine particle fraction (>50%) with low throat deposition for all products
- Physical and chemical stability even under stressed conditions across a wide range of storage conditions
- Long term storage stability at ambient (25°C/60%RH) and high temperature (40°C/75%RH) conditions
- Excellent dose content uniformity
- Ability to develop very low doses of potent molecules
- No pharmaceutical effect observed when developing combination drug products
- No degradation of glycopyrrolate seen at any condition. No significant degradation of formoterol fumarate seen at room temperature.

Materials and Methods

Pearl’s porous particle platform is ideal for the development of robust MDI products in timelines and with technologies that are unique to each project. Pearl is well positioned to further develop its MDI products. Pearl’s MDI products demonstrate the following characteristics:
- Physical and chemical stability even under stressed conditions across a wide range of products
- Ability to develop very low doses of potent molecules
- High fine particle fraction (>50%) with low throat deposition for all products
- Excellent dose content uniformity
- No pharmaceutical effect observed when developing combination drug products
- High speed of development; < 9 months from first formulation to dosing patients
- No degradation of glycopyrrolate seen at any condition. No significant degradation of formoterol fumarate seen at room temperature.

Conclusions
Pearl is well positioned to further develop its MDI products. Pearl’s MDI products demonstrate the following characteristics:
- Physical and chemical stability even under stressed conditions across a wide range of products
- Ability to develop very low doses of potent molecules
- High fine particle fraction (>50%) with low throat deposition for all products
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References