UDS are applicable for therapies where a small and very precise amount of active drug formulation is required in a single nasal shot. Where the dose required exceeds 100 µl, BDS are used to deliver two doses nasally.

Key Technical Characteristics

<table>
<thead>
<tr>
<th></th>
<th>LIQUIDS</th>
<th>POWDERS</th>
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</thead>
<tbody>
<tr>
<td><strong>UDS</strong></td>
<td>One 100 µl dose</td>
<td>Maximum filling volume 140 mm³</td>
</tr>
<tr>
<td><strong>BDS</strong></td>
<td>Two 100 µl doses</td>
<td></td>
</tr>
</tbody>
</table>

Key Benefits
- Disposable devices for single use
- Accurate one or two shot delivery
- Suitable for liquid and powder drug delivery
- Tamper-evident features
- Conventional filling techniques
- Customized design possible

Key Differentiators
- Convenient, ready-to-use primeless devices
- One handed actuation, can be used in any position
- Drug product and delivery device protected before use
- Microbiological integrity of primary container
- Patient-independent performance for UDS powder device
The UDS and BDS nasal spray devices are supported by the following associated Services to expedite your drug product development:

**Customized Drug Delivery Solutions**
- Designed and developed by multi-disciplinary project teams with a customer-centric approach
- Quality-by-Design

**Analytical Laboratories**
- Elastomer and plastic extractables, bioburden, silicone oil assay
- Full extractable and toxicology packages to support regulatory filing

**Physical Laboratories**
- Aerodynamic sizing and spray characterization
- Mechanical, stress and content uniformity testing, moisture content
- Non-destructive 3D tomography imaging
- IV BE testing
- Fully validated Nasal Casts

**Regulatory Expertise**
- Dedicated regulatory affairs experts
- 30 DMFs and over 50 pass NDAs and ANDAs generated
- Fast approval data packages