











Hovione has developed a range of customized particle engineered APIs with superior powder properties and a suite of innovative, highly specialized Device Platforms that are able to address the challenges in your formulation development.

## Inhalation

### Particle Engineered/Customized APIs

#### Corticosteroids

PRODUCT	ROUTE OF ADMINISTRATION	CAS NUMBER	CUSTOMIZED PARTICLE SIZE	REGULATORY STATUS
<b>Fluticasone Furoate</b>	 Inhalation  Nasal	397864-44-7	✓	US DMF
<b>Fluticasone Propionate</b>	 Inhalation  Nasal  Topical	80474-14-2	✓	CEP, US DMF, JP DMF, CN DMF, KR DMF
<b>Mometasone Furoate Anhydrous</b>	 Inhalation  Nasal  Topical	83919-23-7	✓	CEP, US DMF, JP DMF
<b>Mometasone Furoate Monohydrate</b>	 Inhalation  Nasal	141646-00-6	✓	CEP, US DMF, JP DMF, CN DMF







#### LABA/LAMA

PRODUCT	ROUTE OF ADMINISTRATION	CAS NUMBER	CUSTOMIZED PARTICLE SIZE	REGULATORY STATUS
<b>Umeclidinium Bromide</b>	 Inhalation	869113-09-7	✓	DEV, TECH PACK
<b>Vilanterol Trifenatate</b>	 Inhalation	503070-58-4	✓	GMP, TECH PACK
<b>Salmeterol Xinafoate</b>	 Inhalation	94749-08-3	✓	CEP, US DMF

### Formulation Services

- Carrier-based, composite and carrier-free formulation development
- Generic deformulation and formulation services
- Novel formulation development
- Spray Drying, Jet Milling and Wet Polishing particle engineering capabilities
- API particle customization to tailor formulation performance
- Dry powder inhalation drug product manufacturing:
  - High and low shear powder blending
  - Capsule, reservoir, and blister filling
- Biorelevant analytical formulation testing
- Integrated API, excipient, blending, device and analytical formulation capabilities

### Patented Device Platforms

DEVICE	ROUTE OF ADMINISTRATION	TYPE	DOSING	DOSE RANGE	APPLICATIONS
<b>Nasal Powder Device</b>	 Nasal	Capsule	Single-use	Up to 40mg	Acute treatments and Rescue therapies
<b>Sunriser® DPI</b>	 Inhalation	Capsule	Multi-use	Up to 50mg	Asthma, COPD, Cystic Fibrosis and more
<b>TwinCaps® DPI</b>	 Inhalation	Reservoir	Single-use	Up to 2 x 30mg	Anti-virals, Vaccines, rescue therapies and more
<b>Large Dose DPIs</b>	 Inhalation	Reservoir	Single-use	Up to 8 x 50mg	Antibiotics, Biologics, Anti-virals and more
<b>PowdAir® DPI</b>	 Inhalation	Capsule	Reusable	Up to 50mg	Asthma, COPD, Cystic Fibrosis and more
<b>Papillon DPI</b>	 Inhalation	Blister	Reusable	Up to 50mg	Asthma, COPD, Cystic Fibrosis and more

- Available for integrated formulation-device development, licensing, supply and customization
- Active collaborations with device partners to bring the right dry powder inhalation device for every formulation

**From feasibility to commercial**



**Contact our experts today** to know how to integrate API, excipient, blending, device and analytical formulation capabilities.

**hovione.com**



## Oral, Injectable, Topical and Ophthalmic

### Security of supply

Hovione provides the peace of mind of a high-quality manufacturer who is a founding member of Rx-360 and has an unblemished regulatory track record.

### Antibiotics

PRODUCT	ROUTE OF ADMINISTRATION	CAS NUMBER	CUSTOMIZED PARTICLE SIZE	REGULATORY STATUS
Doxycycline Hyclate	Oral, Injectable	24390-14-5	✓	CEP, US DMF, JP DMF
Doxycycline Monohydrate	Oral	17086-28-1	✓	CEP, US DMF
Minocycline Base	Oral, Injectable	10118-90-8	✓	US DMF
Minocycline Hydrochloride	Oral, Injectable, Topical	13614-98-7	✓	CEP, US DMF, JP DMF, CN DMF

### Corticosteroids

PRODUCT	ROUTE OF ADMINISTRATION	CAS NUMBER	CUSTOMIZED PARTICLE SIZE	REGULATORY STATUS
Betamethasone Acetate	Ophthalmic, Injectable	987-24-6		US DMF
Betamethasone Disodium Phosphate	Ophthalmic, Injectable, Topical	151-73-5		US DMF, JP DMF, CA DMF
Halobetasol Propionate	Topical	66852-54-8	✓	ASMF, US DMF, CA DMF
Hydrocortisone Aceponate	Topical	74050-20-7	✓	ASMF & VMF

### Antiparasitic

PRODUCT	ROUTE OF ADMINISTRATION	CAS NUMBER	CUSTOMIZED PARTICLE SIZE	REGULATORY STATUS
Ivermectin	Oral, Topical	70288-86-7		CEP, US DMF, JP DMF

### Excipients

PRODUCT	ROUTE OF ADMINISTRATION	CAS NUMBER	CUSTOMIZED PARTICLE SIZE	REGULATORY STATUS
DTPA (Pentetic Acid)	Injectable	67-43-6		GMP, TECH PACK, CN DMF

- High-purity, cGMP bio pharmaceutical excipient and bioprocessing chemical

### Drug Delivery Expertise

- Solubility Enhancement Platforms:
  - ASD-HIPROS, Dispersome®
- Sustained Release
- Ophthalmic
- Inhalation and Nasal

### Manufacturing Services

- Integrated offer: from chemical synthesis to drug product manufacturing
- Bottom-up and Top-down particle engineering by:
  - Spray drying, Spray congealing, Hot melt extrusion, Co-precipitation, Crystallization and Milling
- Batch tableting and precision capsule filling
- Continuous Tableting

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