

A smarter, faster and more patient-centric future for **OSD manufacturing** awaits

Oral solid dosage (OSD) drugs have been described as **“the most popular mode of drug delivery worldwide”**, due to their high level of versatility in patient treatment.

However, there are many complexities in the journey to market for your OSD that can lead to delays and hinder the timely delivery of critical medicines to patients.

But what are the **key trends influencing these complexities**, and how can you best position your project for **future success**?

Trend 1: Changing lives by embracing Pharma 5.0 in OSD production

Companies adopting the latest advancements in technologies such as artificial intelligence (AI) and machine learning (ML), can benefit from:

- Robotics and automation, streamlining OSD production.
- Real-time monitoring of critical process parameters in OSD manufacturing.
- Digital twins to replicate OSD manufacturing processes and facilitate virtual experimentation.
- Process analytical technology (PAT) to improve OSD product quality.



Trend 2: Meeting the growing demand for patient-centricity

Patients are increasingly seeking therapies that are easy to administer and fit seamlessly into their lives. OSDs offer such convenience, particularly across formats such as:

- Modified-release formulations**
- Multiparticulates**
- Fixed-dose combinations (FDCs)**
- Coated tablets**
- Bilayer tablets**
- Orodispersible tablets**
- Mini tablets**

Companies offering these OSD formats will be able to meet patient demands for better centricity, but they must also be prepared to navigate the complexities of bringing them to market.

Trend 3: Overcoming the complex to prevent delays

Using complex active pharmaceutical ingredients (APIs) presents unique challenges in OSD development and manufacturing. If not addressed promptly, these can potentially lead to delays in the delivery of critical therapies to patients.

- **Poor bioavailability:** APIs with low solubility can hinder drug absorption. Innovative formulation techniques like particle size reduction (milling) and amorphous solid dispersions (spray drying) are vital to enhance bioavailability and therapeutic effectiveness.
- **Highly potent APIs:** These potent compounds require specialized handling and containment to ensure operator safety, prevent cross-contamination and meet stringent regulatory requirements.

By leveraging the knowledge and experience of OSD formulation experts, companies can optimize the delivery of poorly soluble drugs to ensure the development of safe and effective OSD therapies.



Trend 4: The need to offer greater flexibility in OSD manufacturing and packaging

The increasing diversity of OSD formats requires flexible manufacturing and packaging solutions to ensure its safe, compliant and effective delivery to patients. These require companies to offer:

- Versatile packaging formats, such as wallets, bottles and blisters.
- Custom options, such as online printing systems, color differentiation and specialized dose packs, to meet specific branding or regulatory needs.
- Scalable solutions across high-volume and small-volume packaging lines to accommodate varying production scales and market demands.



Making the complex simple for your OSD

As a leading global CDMO, powered by Pfizer, we stay ahead of the latest trends and harness a deep understanding of the therapeutic landscape to ensure your OSD project succeeds.

Find out how we can work with you to navigate your OSD complexities and deliver high-quality, patient-centric medicines to market quickly and effectively in our latest eBook.

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