

Amorphous Solutions and Dispersions

About 40% of newly developed medicinal chemical entities have poor water solubility, and 90% of drugs under development can be classified as poorly soluble drugs. In response to this problem, synthetic chemists have made salts with weak bases or weak acids and poorly soluble drugs, but in fact only 20% ~ 30% of new chemical entities are easy to form salts, and the remaining 70% ~ 80% of new chemical entities. A solid dispersion (SD) refers to a dispersion system in which the drug particle size is within the range of 0.001 to 0.1 μm in a certain state and uniformly dispersed in a solid carrier. As an intermediate of pharmaceutical preparations, solid dispersions can increase the dissolution of poorly soluble drugs, improve bioavailability, delay drug release, increase drug stability, and solidify liquid drugs.

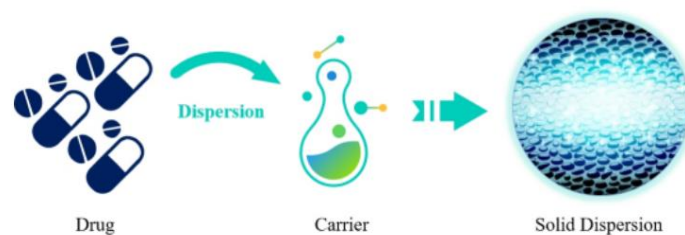


Fig.1 Schematic diagram of solid dispersion formation

Our Services

As a supplier of pharmaceutical preparations, **CD Formulation** has pharmacy and other professional researchers and experimenters, and has extensive experience in drug development. Our company can customize the carrier

material of the solid dispersion for the customer, and provide corresponding product solutions to facilitate the commercialization of the customer's drug.

The carrier services we can currently customize for customers include the following:

- [Custom Immediate Release Solid Dispersion Carriers](#)
- [Custom Slow \(Controlled\) Release Solid Dispersion Carriers](#)
- [Custom Enteric Carriers](#)
- [Custom Joint Carriers](#)

In addition to the above-mentioned different carrier services, we can also choose a suitable preparation method according to customer requirements. If your drug is poorly soluble or insoluble, please contact us in time and we will customize an exclusive solution for you.

Characteristics of Pharmaceutical Solid Dispersions

- Realize the solidification of liquid medicine.
- The drug exists in the carrier in a highly dispersed state.
- The carrier can mask the bad smell of the medicine and reduce the irritation.
- Hydrophilic carriers can increase the solubility and dissolution rate of poorly soluble drugs and help improve the bioavailability of drugs; poorly soluble carriers can delay or control the release of drugs; enteric carriers can control the release of drugs in the small intestine.

- The drug has a high dispersion state, poor physical stability, and prone to aging after long-term storage.

Techniques for Preparing Solid Dispersions

The traditional preparation methods of solid dispersions include solvent method, solvent-melting method, melting method, spray (freeze) drying method, and grinding method.

- Electrostatic spinning
- Hot melt extrusion technology (HME)
- Supercritical fluid technology
- Fluidized bed coating technology
- Liquid filling hard capsule technology
- Microwave quenching technology

Source: <https://www.formulationbio.com/amorphous-solutions-and-dispersions-technical-services.html>