



Making sense of solid state chemistry

The need for investigations to optimise physical properties.

To mitigate challenges that may arise in the future and advance the most effective form of an API, a pharmaceutical or biotechnology organisation should carefully consider a target solid form early in development. An API's solid form has important implications for its physical properties down the line, including solubility and bioavailability, and can also be useful in controlling impurities and generating intellectual property. **A partner with a dedicated solid state team and extensive knowledge of the molecule lifecycle can empower your organisation to achieve an ideal target solid form.**

An estimated **90% of small molecules discovered over the last several years display poor solubility.**¹

The components of solid form selection and the importance of collaboration.

Solid form investigations typically include salt and cocrystal screening, polymorphism screening, pre-formulation evaluation, and ultimately, crystallisation development and bulk particle manipulation where necessary. For most solid state projects, solid form investigations can go on indefinitely; additional screening will result in the discovery of additional solid forms. As a result, organisations must be pragmatic in their investigations to achieve an ideal target solid form while considering budget and time. An experienced and collaborative solid state partner can leverage a tailored approach that meets the organisation's specific project requirements.

How can the right partner streamline solid form selection?

Solid form selection is imperative to ensure that an API has the desired qualities and efficacy. By fully understanding an organisation's specific project objectives, the right outsourced partner will help to achieve an optimal target solid form and ensure its suitability for manufacture and commercialisation. **Here are some key advantages for organisations that collaborate with an experienced solid state partner.**

Solid state chemistry at-a-glance

Solid state chemistry can involve:

- **Salt and cocrystal screening** to enhance solubility
- **Polymorphism screening** to understand form change
- **Pre-formulation evaluation** to evaluate versions under various conditions
- **Crystallisation development** to achieve the target version for manufacture
- **Bulk particle manipulation** to further optimise physical properties



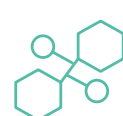
Solid state expertise

The right solid state partner will have a dedicated team and specialised equipment to perform the full range of solid form investigations, crystallisation, and any bulk particle manipulation like milling and micronisation that may be required to further optimise properties. **In addition, your partner should offer solid state work as an integrated service or standalone offering, based on your specific requirements.**



Long-term considerations

An experienced partner can also deliver comprehensive knowledge of the entire molecule lifecycle, from pre-clinical to commercialisation. This enables your partner to better understand requirements for storage, manufacturing and commercialisation to simulate these conditions in the lab and ensure that the API version will behave as anticipated in the long run.



Tailored approach

No two molecules are alike, and it is important that your partner fully understands your project objectives as they begin solid form investigations. Your partner should customise their approach based on budget, time and your desired physical properties to ultimately achieve the best possible API attributes to suit your needs.



Collaboration and transparency

Solid form selection can present a number of obstacles, and it is important for your partner to carefully address each of these while adhering to tight timelines and avoiding cost overruns. **A partner that maintains open communication through the process enables you to work collaboratively to overcome project challenges as they arise and receive guidance on optimal solid form candidates.**

Expertise and partnership to achieve your optimal solid form.

At Sterling, we understand that every molecule is unique, and we closely collaborate with customers to tailor our approach to solid form selection based on their specific requirements. With a world-class Material Science Centre and a team of skilled solid state chemists, we deliver expertise across a variety of solid form investigation elements, crystallisation, and milling and micronisation to bring forth the optimal solid form of our customers' APIs into manufacturing and commercialisation.



Service

We pride ourselves on being easy to do business with, removing layers of complexity, maximising flexibility and adaptability to your requirements, and doing what we say we will do, again and again.



Passion

We promise to treat your molecule as our own, drive progress by continually exploring new and emerging capabilities, and do the right thing for our people and planet.



Science

We combine our expertise in complex and hazardous chemistry, our world-class facilities and our full-lifecycle capabilities to place scientific excellence at the core of every solution we deliver.



Are you ready to set your solid state chemistry project up for success?
Visit www.sterlingpharmasolutions.com to learn more.