



Spray Drying Technology

Spray Drying is a unique drying process involving both particle formation and drying. The powder characteristics can be controlled and powder properties maintained throughout a continuous operation.

The ability to rapidly isolate solids from both aqueous and organic-solvent based feed solutions or suspensions makes spray drying ideal for particle engineering (e.g. micro-encapsulation, production of dry emulsions, or amorphous material), as well as the ability to adjust particle size distribution, particle shape, and density that can improve powder bulk properties such as flowability and dispersibility.

Spray drying is an ideal technology for generating high-energy composite materials to enhance the bioavailability of a poorly water soluble API. For example, obtaining a physically stable amorphous dispersion that achieves supersaturation relative to the intrinsic API solubility can increase in vivo exposure. This can provide important information for the decision to advance NCEs during pre-clinical and clinical studies on the basis of reaching a clear toxicological or efficacious endpoint. Further, this approach applied during late-stage clinical studies can improve exposure variability and lower the required dose leading to less API consumption and, overall cost savings.

Aptuit is equipped with flexible laboratory spray dryers useful for preclinical research and non-cGMP production as well as aqueous based GMP production facilities. The following processes/applications of spray drying are supported at our West Lafayette, Indiana and Verona, Italy sites:

- Transforming liquid into solid bulk (drying starting from solution, suspension, and nano-suspension; creation of co-processed systems; increasing of bulk flowability)
- Screening of API and excipients for bio-enhancement and improved bulk properties (e.g. dissolution rate, flowability, and wettability enhancement)



Additional Aptuit Capabilities

Aptuit offers a comprehensive suite of drug development services that range from drug discovery through to market, including consultancy services, API development and manufacture, preclinical technologies, clinical sciences, pharmaceutical development services, large and small scale manufacturing, IVRS and clinical packaging and logistics, across a wide range of compounds, dosage forms and delivery systems.

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Engineering a better drug development process through scientific excellence.