

Spray Dryer System Specifications

NASA/KSC is seeking a spray dryer system. The spray dryer system will be used to dry small particles that are mixed or dissolved in a liquid. The spray dryer shall take a liquid feed, spray it through a nozzle into a heated region, and collect the dried free flowing particles. The requirements for the spray dryer system are as follows:

1. The spray dryer system shall contain a complete spray dryer with glassware, feed nozzle and all necessary feed pumps, high performance collection vessel, outlet filter and inert loop.
2. The spray dryer shall meet the following characteristics:
 - a. Have a capacity of at least 1.0 liters/hour evaporation of water.
 - b. Come with a nozzle that can be used for either single or dual liquid feeds.
 - c. Must be able to sit on a bench. The spray dryer must not have a height greater than four feet or a depth greater than 2.5 feet.
 - d. The spray dryer must specify successful operation with 1 micron size particles.
 - e. The spray dryer must come with a safety curtain.
 - f. The spray dryer must come equipped with hosing and tubing to handle either aqueous or organic solvents.
3. The high performance collection vessel must enhance collection efficiency for the smallest particles (1 micron size) and for small quantities.
4. The system must come with an outlet filter.
5. The inert loop must provide closed circulation so that the system can be operated with organic solvents. The inert loop must have a cooling unit to condense the solvent, should have an oxygen sensor and a safety circuit in case oxygen is detected.