**CLAIMS**

1. A spray drying system for drying liquid into powder comprising:

an elongated body supported in an upright position;

said elongated body forming a drying chamber within the elongated body;

an upper closure arrangement at an upper end of said elongated body and a lower closure arrangement at a lower end of said elongated body;

an electrostatic spray nozzle assembly supported in said upper closure arrangement;

a supply of liquid to be spray dried;

said electrostatic spray nozzle assembly including a nozzle body having a liquid inlet; said liquid supply being coupled to said liquid inlet for supplying liquid to be dried to said electrostatic spray nozzle assembly; a discharge spray tip assembly at a downstream end of said nozzle body for directing liquid to be dried into the drying chamber and an electrode for coupling to an electrical source for electrically charging liquid passing through the spray nozzle assembly into the drying chamber;

said upper closure arrangement having a drying gas inlet;

a supply of heated drying gas;

said supply of heated drying gas being coupled to said drying gas inlet for directing heated drying gas into the drying chamber; and

said lower end closure arrangement including a powder collection vessel for collecting powder dried in the drying chamber, an upper end of the powder collection vessel being in communication with the drying chamber, a supply of blanket gas having a temperature less than the temperature of the heated drying gas; said powder collection vessel having a blanket gas inlet at an upper end of the powder collection vessel; said supply of blanket gas being coupled to said blanket gas inlet and said blanket gas inlet being oriented for directing blanket gas having a temperature less than the temperature of said heated drying gas into the interior of the powder

collection vessel across the upper end of the collection vessel above the dried powder in the collection vessel to prevent the drying gas from entering the collection vessel and blanket the powder in the powder collection vessel, thereby shielding the dried powder in the collection vessel from exposure to heat, moisture, and oxygen of the heated drying gas from the drying chamber.

2. The spray drying system of claim 1 further including a blanket gas feed system interposed between the blanket gas inlet and the blanket gas supply.

3. The spray drying system of claim 2 wherein the blanket gas feed system includes an adjustable flow control device that is configured to adjust the flow of the blanket gas from the blanket gas supply to the blanket gas inlet.

4. The spray drying system of claim 1 wherein the blanket gas contains no amounts of moisture or oxygen.

5. A spray drying system for drying liquid into powder comprising:

an elongated body supported in an upright position;

said elongated body forming a drying chamber within the elongated body;

an upper closure arrangement at an upper end of said elongated body and a lower closure arrangement at a lower end of said elongated body;

one of said upper and lower end closure arrangements including a drying gas inlet for coupling to a drying gas source and for directing drying gas into the drying chamber;

an electrostatic spray nozzle assembly supported in one of said upper and lower closure arrangements;

said electrostatic spray nozzle assembly including a nozzle body having a liquid inlet for coupling to a supply of liquid, a discharge spray tip assembly at a downstream end for directing liquid to be dried into the drying chamber and an electrode for coupling to an electrical source

for electrically charging liquid passing through the spray nozzle assembly into the drying arranged;

said lower end closure arrangement including a powder collection vessel for collecting powder dried in the drying chamber, an upper end of the powder collection vessel being in communication with the drying chamber, the powder collection vessel including a blanket gas inlet near the upper end of the powder collection vessel that communicates with a blanket gas supply and is configured such that blanket gas from the blanket gas supply may be directed into the interior of the powder collection vessel to blanket the powder in the powder collection chamber and thereby protect the powder in the collection vessel from exposure to the drying gas from the drying chamber; and

a blanket gas feed system interposed between the blanket gas inlet and the blanket gas supply, said blanket gas feed system including an adjustable flow control device configured to adjust the flow of the blanket gas from the blanket gas supply to the blanket gas inlet, and a relief valve interposed between the flow control device and the blanket gas inlet.

6. A spray drying system for drying liquid into powder comprising:

an elongated body supported in an upright position;

said elongated body forming a drying chamber within the elongated body;

an upper closure arrangement at an upper end of said elongated body and a lower closure arrangement at a lower end of said elongated body;

one of said upper and lower end closure arrangements including a drying gas inlet for coupling to a source of heated drying gas and for directing heated drying gas into the drying chamber;

an electrostatic spray nozzle assembly supported in one of said upper and lower closure arrangements;

said electrostatic spray nozzle assembly including a nozzle body having a liquid inlet for coupling to a supply of liquid, a discharge spray tip assembly at a downstream end of said nozzle

body for directing liquid to be dried into the drying chamber and an electrode for coupling to an electrical source for electrically charging liquid passing through the spray nozzle assembly into the drying chamber;

said lower end closure arrangement including a powder collection vessel for collecting a powder dried in the drying chamber, an upper end of the powder collection vessel being in communication with the drying chamber, the powder collection vessel including a blanket gas inlet at the upper end of the powder collection vessel that communicates with a supply of blanket gas and is configured such that blanket gas from the blanket gas supply may be directed into the interior of the powder collection vessel across the upper end of the powder collection vessel to blanket the powder in the powder collection vessel and thereby shield the powder in the collection vessel from exposure to heat, moisture, and oxygen of the drying gas from the drying chamber; and

said powder collection vessel including an adapter arranged at the upper end of the powder collection vessel with the blanket gas inlet being arranged in a side wall of the adapter, and said adapter being configured to removably attach the powder collection vessel to said elongated body.