Nanomilling Overview
LOCATION : CENTRAL MILLING BUILDING GSK Cork
Typical Process Flow

• Prepare liquid suspension
• Mill liquid suspension
• Collect milled suspension
• Spray Dry Milled Suspension
• Discharge Spray Dried Granule.
Main Process Equipment

• Batch Make-Up Vessel

• 8 Wet Bead Mills

• 2 off Suspension Vessels
  – Waste Receiver Vessel for off grade suspension.

• Spray Dryer Unit, complete with rotary atomiser, gas recirculation system (nitrogen) closed loop, product collection cyclone and filter, heater, and condenser and condensate collection system.

• Product Discharge System.
Process Engineering

• Glovebox technology to accommodate the complete range of OHC-3 compounds.

• Dedicated Purified water distribution loop within the facility.

• Dedicated dispensary within the facility, (to cater for OHC-3 compounds). This can operate in either a serial or batch mode for dispensing.

• Contained Solids charging to Batch Make-Up vessel using in-line high shear homogeniser.

• Batch Size Range within the facility 100-600 litres
Process Engineering

• Process areas clean room finishes, ISO 8.

• Dedicated HVAC extract, shared HVAC supply with core area. HEPA filtration on supply and extract.

• Design is based for Aqueous based products only. (No Solvents.)

• CIP skid and distribution for cleaning of complete installation. Dedicated sanitisation vessel.

• System Controlled by Delta V.
  • Data capture system for process parameters.
Spray Dryer

Details:

1. PSD 3 Unit from Niro
2. Droplet Formation Type: Rotary Atomiser
3. Gas Recirculation Loop - nitrogen or air
4. Evaporative Capacity: 13kgs/hr of water.
5. Product separation: cyclone and dust filter.
6. Co-current flow in drying chamber
7. Chilled water supply to condenser.
8. Two feed vessels, …… each vessel 600 litre capacity.
NIRO SPRAY DRYER : PSD-3-R-CC
Facility and Equipment Photographs
Dispensing GloveBox
Suspension Feed Tank to Spray Dryer.
Spray Drying Chamber

Inlet Gas HEPA Filter

Drying Chamber
Discharge Glove Box
Floor Layouts
Ground Floor