Product Video

Mixing Dry Powders - Vrieco-Nauta Conical Screw Mixer Demonstration

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The Vrieco-Nauta® Conical Screw Mixer is a batch mixer specially designed for segregative, free-flowing powders and pastes. It is well-known for its low-intensity mixing and is a leading-edge product in the mixing industry. The conical screw mixer is well suited for delicate products and offers high-accuracy processing. It provides gentle mixing of large volumes of up to 100,000 liters.

Key features include:

- Cantilevered screw design (no bottom support)
- Belt-drive systems available for sanitary applications (no lubrication inside the vessel)
- Clean-in-place designs (CIP/SIP)
- Chemical, pharmaceutical, mineral, and food uses

Targeted applications:

- Mixing and homogenization of powders, pastes, and slurries
- Granulation or agglomeration of powders Addition or injection of liquids into dry powders
- Reaction under vacuum or pressure conditions
- Heating and cooling of powders
- De-aeration or densification of powders
- Homogenization of particle size and color

This video demonstrates the mixing of dry powders utilizing Model 80 LDC41, an 80-liter low-shear batch mixer. The unit incorporates a drive on the top, mixing vessel, discharge vessel, and control panel. The conical screw mixer has an augur which is supported by an orbital arm on the top. The augur and orbital arm rotate and material is transferred from the bottom to the top by the augur. The unit is cantilevered with a screw that is fully supported by the orbital arm. There is no bearing or support at the bottom.

Fine granular sugar (particle size of 400 microns) is mixed with iron oxide pigment (less than 20 microns). The total mix is comprised of 99.2% sugar and 0.8% iron oxide. The mixture is homogenized after four minutes and material is discharged in about 15 sec. There is no material build-up and just a small amount of residue of iron oxide is found on the vessel wall.