

PRODUCT BULLETIN

# Quadro Ytron®

ZC0 2-IN-1 PILOT SCALE POWDER DISPENSER AND EMULSIFIER

*MAXIMUM FLEXIBILITY FOR YOUR PILOT SCALE MIXING NEEDS*



# QUADRO YTRON®

## NOW AVAILABLE

### POWDER WETTING, DISPERSING AND EMULSIFICATION AT A BENCHTOP SCALE

#### POWDER WETTING AND DISPERSING

Quadro has developed the Ytron Model ZC0 as a pilot scale in-line powder disperser that is directly scalable to the larger ZC1 and ZC3 models. The ZC is designed to disperse the most difficult-to-wet powders into solution in a **single-pass**.

##### ZC0 POWDER DISPERSER FEATURES

- No over-processing of shear-sensitive products.
- Higher product yield due to intensive wetting of the powders.
- Batch-to-batch quality consistency.
- Reduced batch times by up to 90%.
- Reduced energy requirements.
- Elimination of unnecessary air entrainment.
- Wets and disperses difficult powders at ambient temperatures such as:
  - Carbomers
  - Cellulose Gums
  - Hydrocolloid Gums
  - Many Others

#### EMULSIFICATION

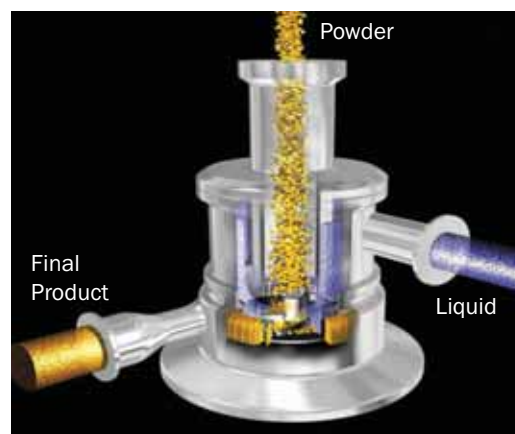
Mixer scale-up with inline mixing equipment eliminates the scale-up rules and problems associated when scaling up in-tank, high-shear mixers from bench scale to production. Quadro has developed the Model ZC0 Emulsifier as a pilot scale emulsifier that is directly scalable to the larger Z1, Z3 and Z5 production models.

##### ZC0 EMULSIFIER FEATURES

- Single-pass processing results in reduced batch times by up to 90% and repeatability batch-after-batch.
- Improved "sheen" and product texture.
- Improved product quality and shelf-life stability.
- Ideal for pilot scale
  - Immiscible Phase Emulsifying
  - Homogenizing
  - Wet Grinding
  - Texturing
  - Deagglomeration
  - Fine Dispersing

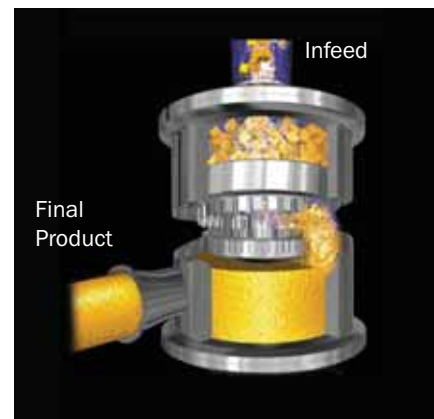
#### QUADRO'S APPROACH POWDER WETTING AND DISPERSION

The Quadro Ytron® ZC Powder Disperser incorporates a close tolerance high shear slotted rotor/stator design. The rotor is designed to create a liquid ring generating significant vacuum in the reactor head. This vacuum ensures that powders from the hopper above are drawn into the reactor head where they are sheared into the liquid phase before hydration takes place. The result is a smooth, consistent, lump-free slurry without recirculating and over-shearing the product after hydration takes place.



#### QUADRO'S APPROACH EMULSIFICATION

1. Product enters housing axially.
2. One or more liquid phases and suspended particles are pumped through toothed rotor/stator tooling.
3. Controlled, high-intensity shear is delivered equally to all fluid elements, regardless of product characteristics.
4. Shear rate is constant, dependent only on rotor/stator tooth selection and rotor tip speed.



# QUADRO YTRON®

## ZCO FEATURES

- Easily Converts From A Dispenser To An Emulsifier With A Simple Tooling Head Change
- Readily Scalable Results
- Sanitary Construction For Easy Clean-Up
  - Surface Finishes Meet FDA & 3A Standards
  - Self-Draining Design
  - No Dead Spots
  - CIP & SIP Capability
- Extensive Tooling Options
- Low Noise
- Designed/Manufactured To Meet Pharmaceutical & Food Industry Standards



## ZCO POWDER DISPENSER SPECIFICATIONS

| Model        |         |         |
|--------------|---------|---------|
| Power        | HP      | 3       |
| (Maximum)    | kW      | 2.2     |
| Liquid       | USGPM   | 3 - 12  |
| Capacity*    | L/min   | 11 - 45 |
| Powder       | lbs/min | 30      |
| Capacity*    | kg/min  | 14      |
| RPM          |         | 6500    |
| Inlet        | in      | 1       |
| Fitting Size | mm      | 25      |
| Outlet       | in      | 1       |
| Fitting Size | mm      | 25      |

## ZCO EMULSIFIER SPECIFICATIONS

| Model        |        |         |
|--------------|--------|---------|
| Power        | HP     | 3       |
| (Maximum)    | kW     | 2.2     |
| Liquid       | USGPM  | 1 - 15  |
| Capacity*    | L/min  | 4 - 60  |
| RPM          |        | 6500    |
| Operating    | psi    | 0 - 120 |
| Pressure     | bar(g) | 0 - 8   |
| Inlet        | in     | 1       |
| Fitting Size | mm     | 25      |
| Outlet       | in     | 1       |
| Fitting Size | mm     | 25      |

\* Actual capacities will vary depending upon tooling selection and product characteristics.



ZCO Emulsifier



## QUADRO PROCESS PRODUCTIVITY SOLUTIONS

*For over 30 years, Quadro has made an unparalleled commitment to delivering the highest production efficiencies, product quality and consistency to market leaders in the Pharmaceutical, Food, Fine Chemical, Personal Care and Cosmetics industries worldwide.*



With the engineering experience gained from developing reliable application-specific solutions for major processors in more than 80 countries, our knowledge of size reduction and dispersion is unmatched. In fact, meeting the evolving needs of our customers drives the development of some

of the industry's most advanced processing technologies and systems – such as the *Quadro® Comil®*, *Quadro® FlexSift*, *Quadro® Fine Grind*, *Quadro Ytron®* inline mixers, dispersers and emulsifiers, *Quadro® ShearFX* and *Quadro Vac®* vacuum transfer systems.

Since 1976, Quadro has led the industry in research & development. Through the Quadro R&D Test Center we work



directly with our customers to run real-world tests of their processes on the latest Quadro equipment. The result has been technical breakthroughs that have changed the way many of our customers manufacture, and led to new global processing industry standards.

As the world's leading supplier of size reduction technology – with a vast global network of agents, distributors, OEMs and partners – Quadro provides a level of service and technical support that is unequalled in the industry. Our passion for technology is exceeded only by our dedication to meeting the needs of our customers.



SIZE REDUCTION • FLUID MIXING • PNEUMATIC TRANSFER



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