

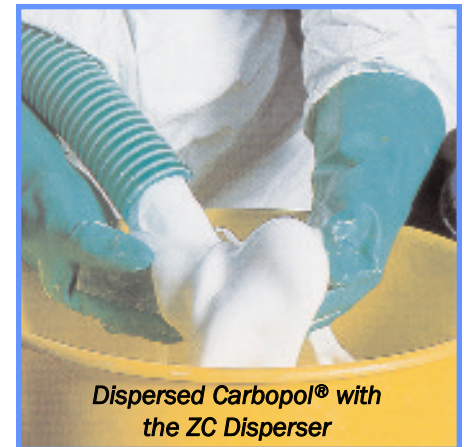
# Quadro Ytron®

MANUFACTURING CLEANING SOLUTIONS

## BACKGROUND / REQUIREMENT

In the manufacturing process of most cleaning solutions a polymer or rheology modifier such as Carbopol® or Polygel® is added to the liquid. These polymers are proven exceptional thickeners, suspending agents and stabilizers and provide the following benefits to cleaning solutions:

- Thickening:** Upon neutralization, the polymer instantly thickens to form a high viscosity clear gel.
- Shear Thinning:** Ensures easy pumping of the finished product and also enables even thick gel products to be easily dispersed via a pump or trigger sprayer.
- Yield Value:** Aids in the suspension of insoluble materials and enables "vertical-cling" - an enhanced performance benefit for products that are dispensed via trigger sprayer or nozzle.
- Emulsion Stabilization:** Stabilize oil-in-water emulsions for applications that contain ingredients such as silicone oil or mineral spirits.



Manufacturers have often raised concerns regarding the long mixing cycles and difficulty in dispersing hydrophilic polymers in water with-out 'fish-eyes' or agglomerates. 'Fish-eyes' are lumps of product with a hydrated skin but an unhydrated dry core. They are created when a hydrophilic powder comes in contact with water. The particles on the surfaces hydrate and cross-link to form a tough outer layer and the particles on the interior cannot be hydrated because they are shielded from the water.

The following problems can be encountered when using in-tank mixing technology to disperse polymers or rheology modifiers:

- Do not produce sufficient shear to reduce particle size and eliminate 'fish-eyes' or agglomerates.
- Long mixing cycles are required to obtain uniform dispersion and to complete hydration.
- As the solution viscosity increases, agitation of the solution and powder dispersion becomes increasingly difficult.
- Powders will raft, surface turbulence generated is not normally sufficient to draw powders off the surface.
- Most of the polymers have pseudoplastic or thixotropic properties. Over processing to eliminate lumps reduces the effective viscosity, forcing the processor to compensate with the addition of additional ingredients.
- At the end of the batch a significant amount of dry material is filtered out and ultimately wasted.

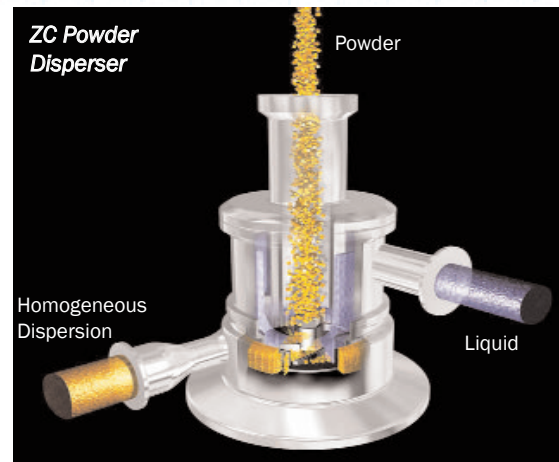


**ZC1 Toilet Bowl Cleaner Application**

# QUADRO YTRON®

## QUADRO'S APPROACH

The ZC Inline Powder Dispenser is designed specifically to disperse extremely difficult-to-wet powders such as Polymers and Carbomers, into a liquid stream in a single pass. Powder incorporation is achieved by the presence of significant vacuum in the reactor housing generated by the liquid seal created between the rotor and stator. This vacuum ensures that powders from the hopper above are drawn into the reactor head, where the particles are subjected to intense mechanical shearing PRIOR to hydration into the liquid stream. The result is a perfectly dispersed and homogeneous dispersion of hydrophilic powders WITHOUT 'fish-eyes'.



## QUADRO YTRON ZC POWDER DISPENSER

### ADVANTAGES

- *Single pass processing ensures lump free dispersions that provide repeatable and consistent product, batch to batch.*
- *Batch times typically reduced by 80%.*
- *Elimination of over processing to eliminate 'fish-eyes'.*
- *The energy applied is focused on the dispersion of the polymer. No energy wasted to recirculate.*
- *Eliminates powder build-up on tank walls and mixer shaft reducing cleaning time.*
- *Less air entrainment, eliminates the time to de-aerate and/or requirement to install expensive de-aerating equipment.*
- *A single ZC Dispenser can be used to feed multiple vessels. No need to marry a high shear mixer to each process vessel.*
- *Powders can be introduced and dispersed during the filling operation of the vessel, thus reducing batch times.*
- *Easy cleanup with 3A CIP approved design.*

## TYPICAL APPLICATIONS

- Cleaning Gels
- Cleaning Pastes
- Dishwashing Liquid
- Window Cleaner
- General Purpose Cleaner
- Mold & Mildew Remover
- Abrasive Cleaner
- Toilet Bowl Cleaner
- Oven Cleaner
- Waterless Hand Cleaner
- Car/Boat Polish
- Furniture Polish
- Silver/Metal Polish

### LOCAL REPRESENTATIVE



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Leading Process Equipment Innovation

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