

# WELLMATE UT/CT BAFFLE TANK

## RESIDENTIAL/COMMERCIAL CONTACT TANKS

TIME-TESTED RELIABILITY, PREFERRED BY PROS



The new WellMate<sup>®</sup> BAFFLE tank from Pentair promotes uniform mixing and improved contact time in order to meet a .3 minimum baffle factor, as set by many health agencies. The distribution system in our tank provides for water to enter the bottom of the tank, distribute at the top of the tank, and exit at the bottom of the tank, providing maximum contact time.

### FEATURES/BENEFITS

One piece blowmolded polyethylene liner, no welds or potential leak points

Filament wound fiberglass/epoxy matrix exterior; strong, lightweight, and corrosion resistant

Top quick connect with push button air release; easily remove trapped air in the tank

Injection molded plastic base; durable, impact resistant material

PVC drain assembly with 1.25" socket inlet/outlet connection with a 1/2" blowdown port. Standard socket connections for easy installation

### APPLICATIONS

Chlorination

Purification

### ORDERING INFORMATION

| PART NUMBER | DESCRIPTION              | CAPACITY GAL/LTR | MAX OPERATING PRESSURE PSI/kPa/bar | DIAMETER | OVERALL HEIGHT IN/CM | HEIGHT INLET/OUTLET TO FLOOR IN/CM | SYSTEM CONNECTION |
|-------------|--------------------------|------------------|------------------------------------|----------|----------------------|------------------------------------|-------------------|
| 34784       | 1653 UT40 BAFFLE FACTOR  | 40/151           | 75/500/5.0                         | 16"      | 57.25/145            | 1.5/3.8                            | 1.25" Socket      |
| 34785       | 2162 UT80 BAFFLE FACTOR  | 80/303           | 75/500/5.0                         | 21"      | 62.75/159            | 2/5.1                              | 1.25" Socket      |
| 34786       | 2470 UT120 BAFFLE FACTOR | 120/454          | 75/500/5.0                         | 24"      | 72.25/186            | 2/5.1                              | 1.25" Scket       |

### SERVICE / REPLACEMENT PARTS

| PART #    | DESCRIPTION  |
|-----------|--|
| 21658-40  | BAFFLE FACTOR KIT UT40 (riser assembly; riser pipe, drain adapter & diffuser)    |
| 21658-80  | BAFFLE FACTOR KIT UT80 (riser assembly; riser pipe, drain adapter & diffuser)    |
| 21658-120 | BAFFLE FACTOR KIT UT120 (riser assembly; riser pipe, drain adapter & diffuser)   |
| 21664-40  | BAFFLE FACTOR RETROFIT KIT UT40 (riser assy, blowdown kit, air release fitting)  |
| 21664-80  | BAFFLE FACTOR RETROFIT KIT UT 80 (riser assy, blowdown kit, air release fitting) |
| 21664-120 | BAFFLE FACTOR RETROFIT KIT UT120 (riser assy, blowdown kit, air release fitting) |
| 21660     | BAFFLE FACTOR PUSH BUTTON AIR RELEASE PARTS KIT                                  |

## BAFFLE FACTOR & PERFORMANCE INFORMATION

### What is the Baffle Factor?

In short, this is a numerical value that describes the degree of a fluid's short-circuiting inside of a tank. The Baffle Factor ranges from 0 to 1.

### Why is this important?

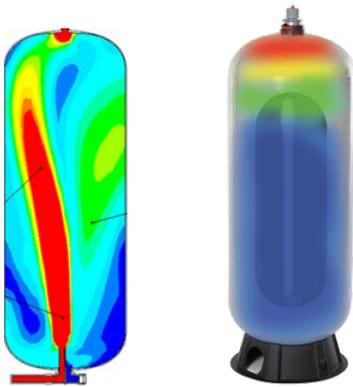
It is all about the disinfection process. The effectiveness of a disinfection process can be improved by: increasing the concentration of the disinfectant, increasing the disinfectant contact time, decreasing the flow rate, increasing the tank volume, increasing the temperature, and by increasing the baffling factor of the system. The only factor that we can influence by the design of our tanks is the baffling factor, by controlling the fluid flow within the tank.

### What?

Basically, as new water enters the tank, it is injected with a disinfectant. We want that new water to stay in contact with the newly injected disinfectant for as long as possible before being drawn from the tank. For a perfect Baffle Factor (1.0), all of the water that was inside of the tank would be used before that new water is drawn out. Thus, the new water would have the maximum "contact time" with the water before being consumed, allowing for more thorough disinfection. Any mixing within the tank reduces the baffling factor.

### How does this kit help?

If water is delivered into the bottom of the tank, the incoming water gets forced up into the water column in streams, creating short-circuit paths that result in mid-column mixing.



This kit transforms the tank so that the water is delivered to the top of the water column. Streams of incoming water are not shot towards the middle of the tank, limiting the mixing to the top section of the tank. The entire volume below that mixing zone is left undisturbed, to be drawn down evenly by gravity, to the outlet at the bottom.

## PERFORMANCE & TEST RESULTS

Several municipalities require a minimum Baffle Factor of 0.3 for contact tanks. The Baffle Factor is determined experimentally by performing a chloride tracer study. A tank is filled with chloride-free water. Feed water of known chloride concentration is fed through the tank, and the outlet is monitored until 10% of the feed concentration is measured. That time, divided by the retention time at that flow rate, is the Baffle Factor. For example, take a 120 gallon tank with a flow rate of 3 GPM. It will take 40 minutes to process the entire 120 gallons. Through experimentation, say that the 10% feed concentration was observed at the outlet at a time of 12 minutes, the resultant Baffle Factor equals  $12 \text{ min} / 40 \text{ min} = 0.30$ .

For the UT-120 Tank, using this Baffle Factor Riser Tube Kit, you can expect to achieve a minimum Baffle Factor of .43, which is the lowest value achieved during qualification testing at the WQA laboratory (Water Quality Association), and independently at the Pentair laboratory. (.43 @ 11.2 GPM, .72 @ 8.1 GPM, .92 @ 4.3 GPM)



### WATER QUALITY SYSTEMS

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