

Process/Chemical Metering



Metering Pumps are to Chemicals, as Needles are to Medicine

Chemicals make up a “top-3” expense for any plant, and their value to the process is invaluable because chemicals provide the lifeblood for industrial and municipal plants. Metering pumps play a key role in dosing chemicals (that are often procured and stored in high concentrations). Although a metering pump is far less expensive than the material it handles – it must accurately deliver precise volumes every time – to ensure proper results for the process.

Pulsafeeder pumps are the preferred choice for metering chemicals in industrial & municipal plants. The **most common chemicals** pumped include:

Manufacturing:

- Sodium Silicate (for pulp & paper production)
- Ethylene Glycols (for manufacturing plastics, textiles, latex paints, adhesives)
- Vinyl Methyl Ether and Vinyl Monomers
- Nitrate, Ammonium, Urea, Phosphate and Potassium (for fertigation/fertilizers)
- Methanol (MTBE production for petroleum refining and solvent production)
- Hydrochloric Acid (hundreds of uses including PVC production and metal refining)
- Triethylaluminum/TEAL (for manufacturing of plastics, common co-catalyst in olefin polymerization)

PH Control:

- Sulfuric Acid – to lower pH
- Caustic Soda (sodium hydroxide) – to raise pH
- Sodium Bisulfite – for dechlorinating applications
- Lime Slurries – for water softening

Disinfection:

- Sodium hypochlorite
- Calcium hypochlorite
- Hydrogen Peroxide
- Bromine (in cooling tower applications)
- Copper Sulfate (for algae control in cooling tower applications)
- Ammonium Sulfate or aqua ammonia (for chloramines/secondary disinfection)

Coagulation & Flocculation:

- Alum or sodium aluminate
- Ferric chloride
- Proprietary Polymers (provided by water doctors)

Taste and Odor Control:

- Activated Carbon Slurries
- Diatomaceous Slurries (wet and dry applications)
- Fluoride compounds

Heavy Metal Removal:

- Potassium Permanganate (for manganese & iron removal)
- Phosphate (for redwater control)
- Hydrochloric Acid (for numerous applications)

Metering pumps used to deliver chemicals should be selected by criteria specific to the process, such as:

- **Flow Rates & Pressure** – as required by the process
- **Corrosion resistance** – to the chemical being pumped
- **Accuracy** – to deliver precisely the amount of chemical needed for a process
- **Reliability** – to ensure sustained and predictable operation
- **Simplified maintenance** – to minimize costs and maximize plant uptime
- **Safety** – to protect plant employees, and the surrounding environment

This criterion helps to determine whether a diaphragm pump or a rotary gear pump is the best choice for a specific application.