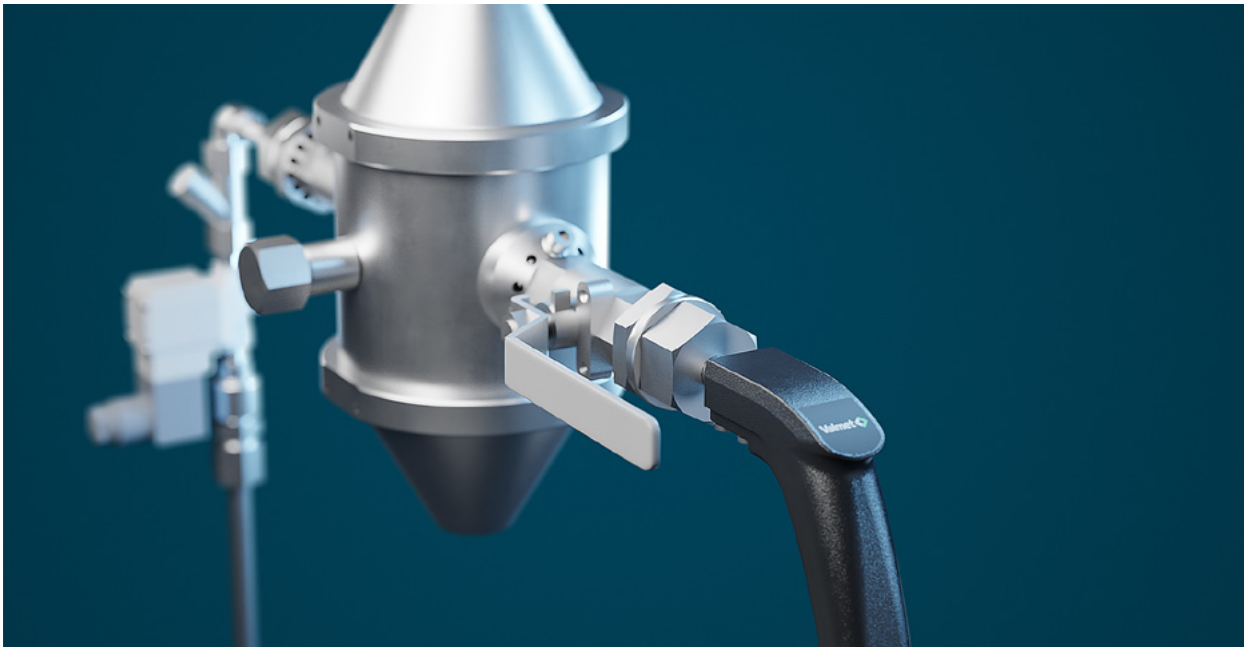
Optimize and save polymer with Valmet Polymer Concentration Measurement

The Valmet Polymer Concentration Measurement gives real-time polymer concentration levels in industrial and municipal processes.

The Valmet Polymer Concentration Measurement (Valmet PCM) creates new opportunities for municipal and industrial wastewater plants, as well as paper and board processes. Eliminate the challenges in controlling polymer concentration for optimum performance.



Benefits

- Stable polymer quality
- Find the optimal polymer concentration
- Improve sustainability through more efficient polymer use
- Lower polymer and energy consumption
- Reduce wastewater sludge transport and incineration
- Better wet end retention for increased process efficiency

Wastewater polymer concentration in real-time

Polymers are used to coagulate suspended solids and produce large flocs of solid materials. Typically, polymer concentration is controlled by weighing polymer powder and adding a measured volume of water for dilution.

This approach leaves operators with little insight into the actual polymer concentration in specific processes, or even in the storage tank itself. The Valmet PCM changes the game entirely, giving real-time confidence in process conditions so operators can dose polymer for optimum performance.

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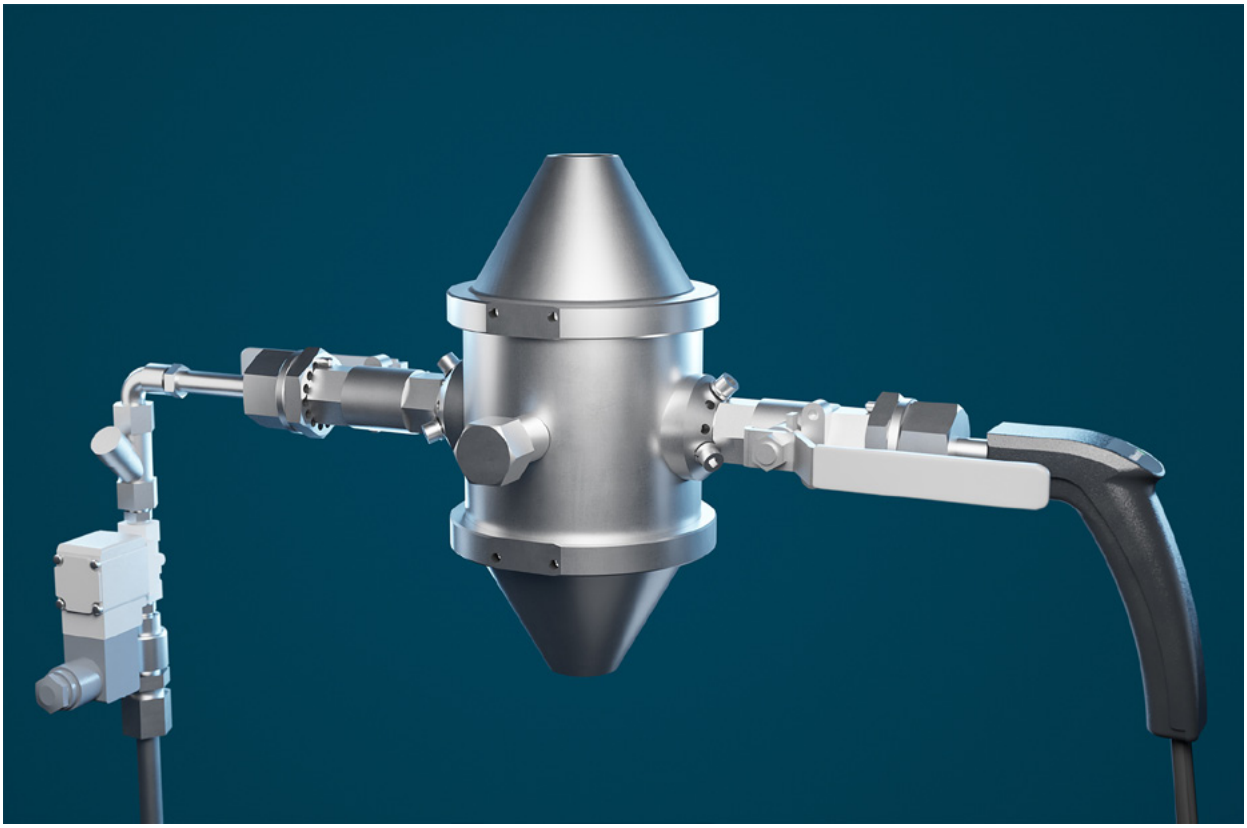

Reliable and accurate polymer concentration measurements are available where they were impossible before. With these insights, operators can ensure good flocculation, thickening and dewatering, avoiding problems such as foaming caused by incorrect polymer concentration.

Measurements from Valmet PCM help treatment facilities reduce overall polymer use, significantly cutting purchasing expenses. In addition, processes experience fewer upsets from unexpected variations in polymer concentration.

Paper & board wet end optimization

Paper & board mills typically use polymers to improve retention of fine particles and fillers during web formation. Having the correct concentration not only has a direct impact on end-product quality, but also contributes to overall wet end efficiency.

Accurate information about polymer concentration together with retention measurements help optimize wet end retention performance. With real-time concentration measurements, operators can react faster to changes in the process.

Industrial grade quality and accuracy

Valmet PCM leverages decades of experience in Valmet's optical measurement know-how in board and paper processes.

Valmet PCM incorporates the well-proven optical measurement technology of Valmet Optical Consistency Measurement (Valmet OC). This foundation ensures Valmet PCM delivers industrial-grade accuracy and reliability to wastewater treatment.

- Co-designed with customers for wastewater applications
- Fast calibration and minimum maintenance
- High performance industrial measurement with reliable results

The compact probe design and the unique optics developed by Valmet, maximize measurement volume. The probe uses an array of optical channels to collect scattered and reflected light, capturing measurement data points 1,500 times per second for exceptional precision.

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Control polymers throughout wastewater treatment

Valmet PCM enables new levels of control since operators can now have real-time polymer concentration level to fine tune polymer dosage

Polymer concentration measurement locations

- Preparation and storage tank for optimum polymer dilution
- Follow up checkpoints for the preparation process
- Wastewater solutions:
  - Primary clarification for better solids settling
  - Secondary clarification to improve flocculation and throughput
  - Thickening to increases solids content
  - Sludge dewatering for improved solids dewatering process
- Paper and board retention chemical dosing

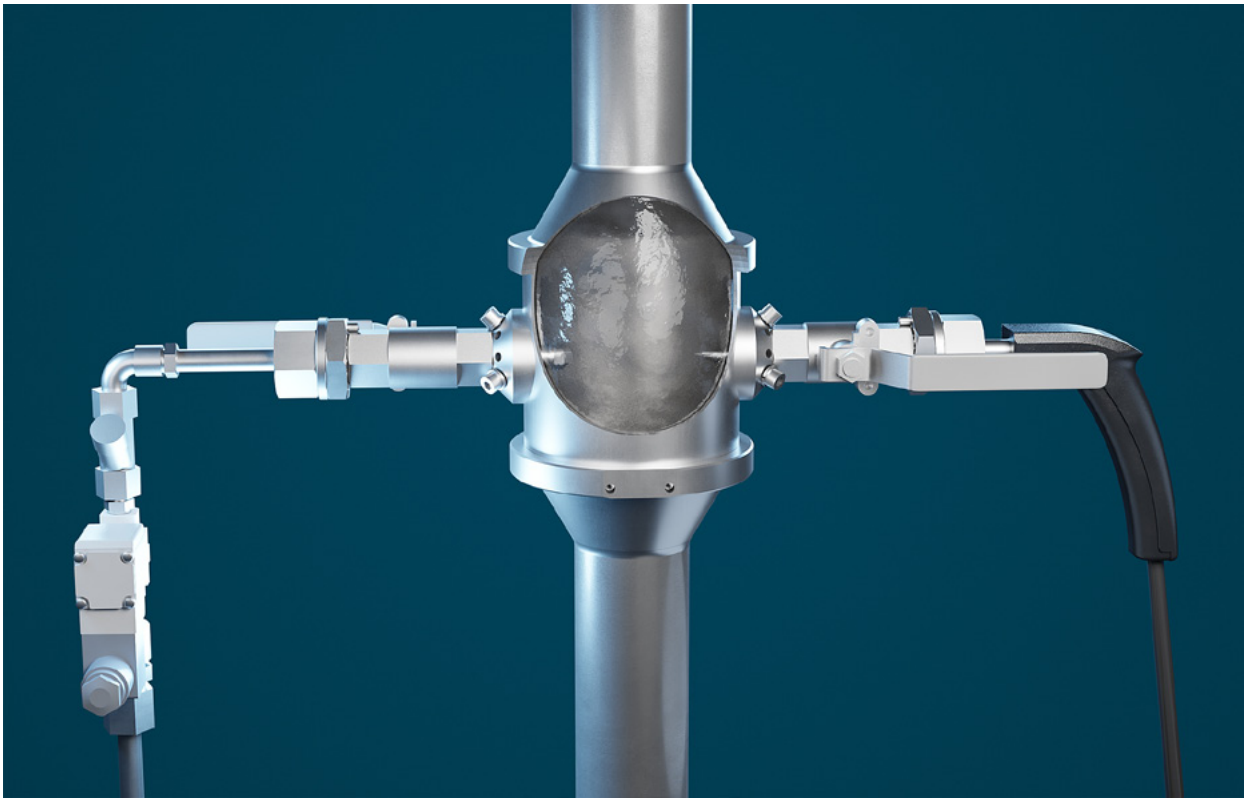
For preparation, measuring real-time concentration helps operators see what they really have in the tank and react to changes. The concentration of the diluted polymer can be monitored before the polymer is pumped to the storage tank, ensuring a uniform concentration flows to storage.

Accurate preparation is key to optimal dosing of processes while also lowering polymer consumption. With The Valmet PCM operators can detect variations during the polymer preparation and make adjustments before dosing polymer to the process.

In primary and secondary clarification, steady polymer concentration stabilizes the treatment process and avoids excess dosing. The real-time measurement ensures operators are warned immediately when there are disturbances.

For thickening and dewatering, the measurement data from Valmet PCM helps give precise polymer volume (kg/ton sludge) on the sludge mass flow to the thickening and sludge dewatering unit. The sludge dewatering process can be easily optimized for stable centrate and dry cake solids, and optimal usage of polymer.

In paper & boardmaking processes, chemicals, typically polymers, are added to improve retention of fine particles and fillers during web formation.



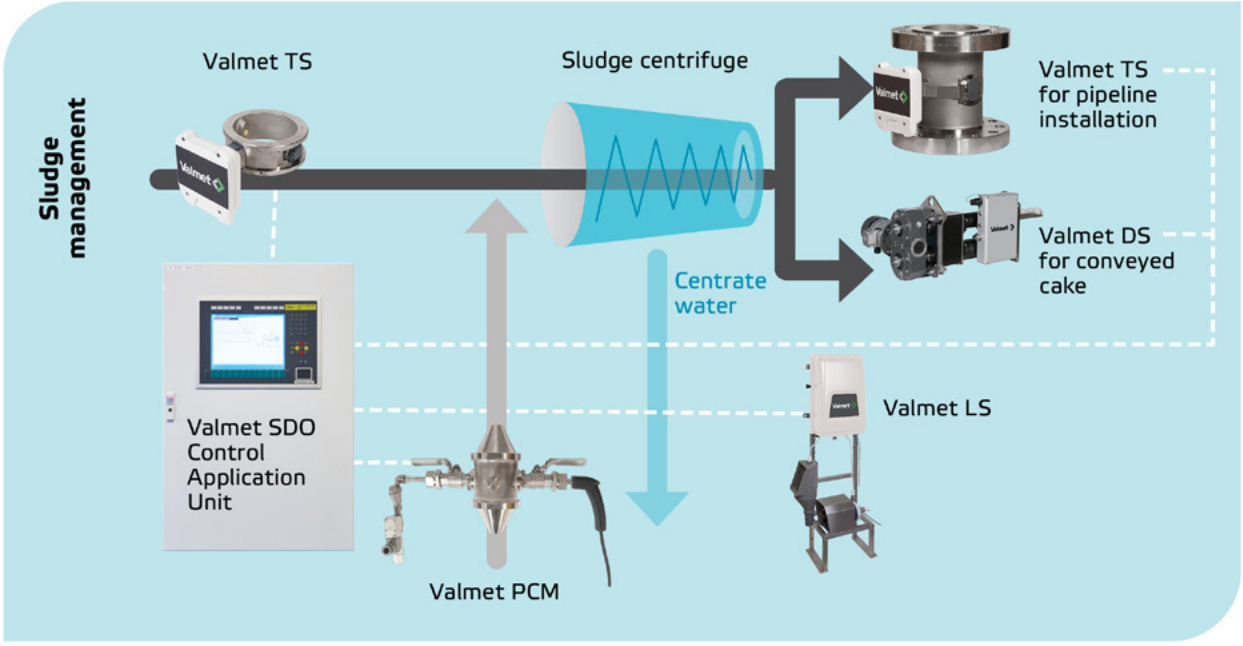
Accurate information about polymer concentration helps optimize wet end retention and increase process efficiency.

Control polymers throughout wastewater treatment

The Valmet PCM probe is retractable and has no moving parts for ease of use. The Valmet PCM includes an automatic flushing system to keep the probe clean and measurements stable.

The integrated sensor probe flushing unit is installed to the process pipe with a water line feed from the facility. Flushing intervals and duration can be configured to optimize the measurement performance. The flushing unit also includes an installation point for a manual lab sampling valve.

Specification	Range
Concentration	0–12%
Repeatability	±0.01%
Sensitivity	0.002%
pH range	3–10
Pressure	PN16
Flow velocity	N/A (flushing unit chamber turbulence)
Flushing unit pressure	Process pressure + 2bar
Water consumption	With 5bar water pressure 1.3L/h (10s flushing every hour)
Pipe size	DN25 – DN100



For more information, contact your local Valmet office. www.valmet.com