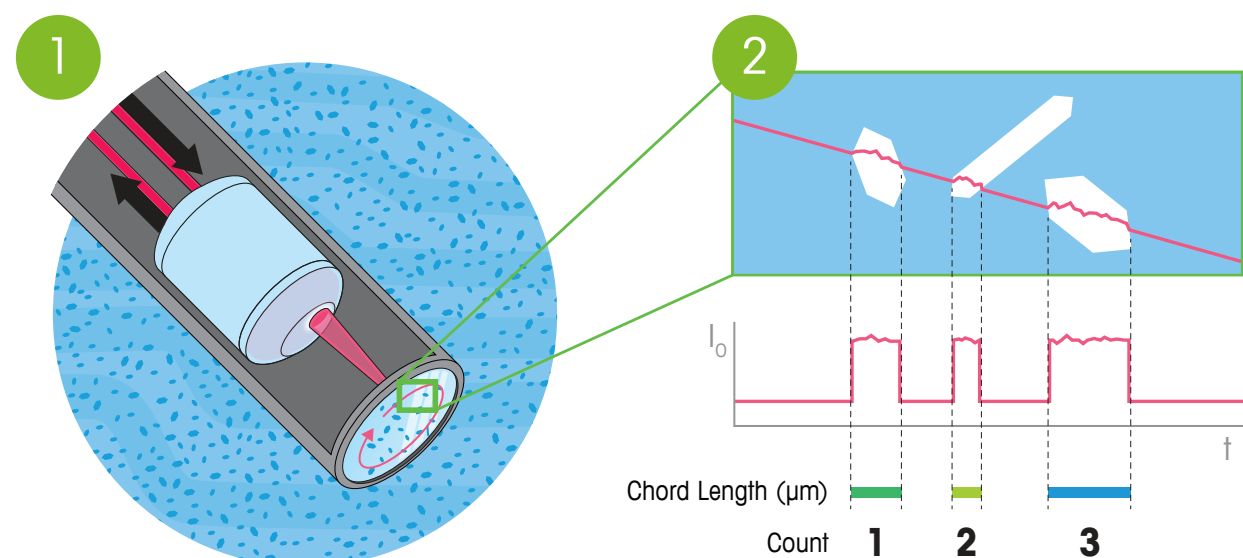


A Focused Guide to Measuring Particles in Process

METTLER TOLEDO

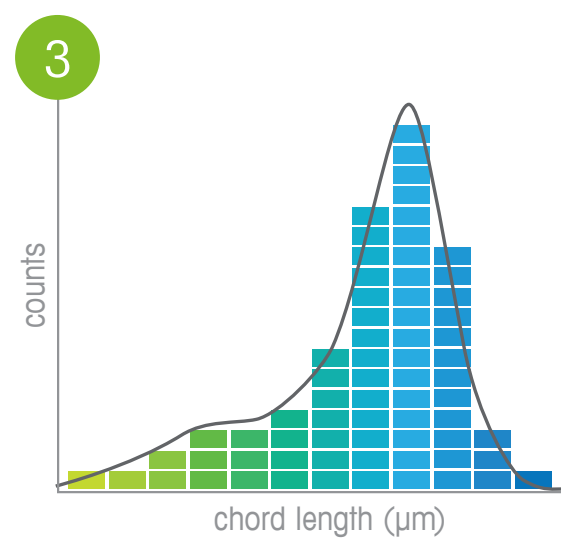
▶ www.mt.com/ParticleTrack

ParticleTrack Method of Measurement

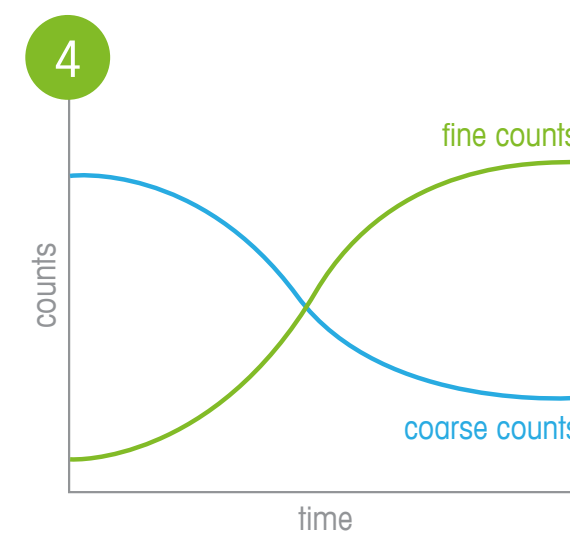


The Probe: A laser is directed through rotating optics and focused to a tight beam spot at the probe window. When light hits a particle it is reflected back to a detector.

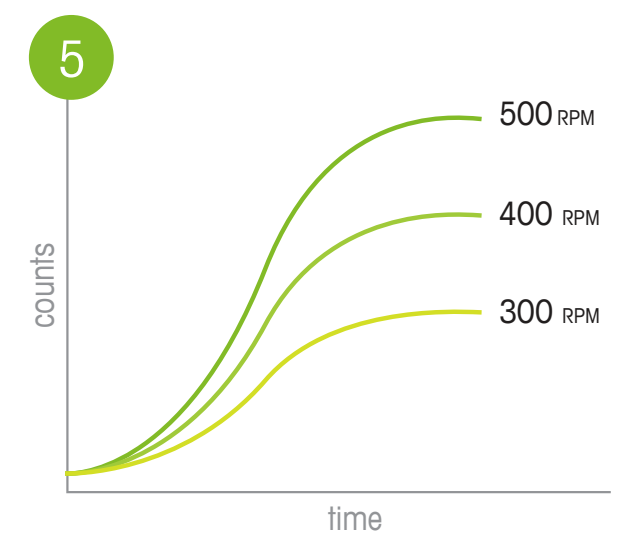
The Measurement: The intensity of the reflected light is analyzed over time allowing individual particles to be counted and the distance across particles (chord length) to be measured.



The Chord Length Distribution (CLD): Thousands of chord lengths are counted every second and a precise distribution sensitive to changing particle size and count is reported in real time.



The Trends: Mean chord length as well as counts in individual size classes can be trended over time, allowing changing particle systems to be studied in real time without having to take a sample.



The Process: By studying how particles change as process conditions are varied, scientists can determine which process parameters will deliver particles with the appropriate attributes.

Tracking Common Particle Mechanisms

	Primary Nucleation <i>/prī,mērē nōō'klē-ā'shən/</i>	Growth <i>/grōTH/</i>	Agglomeration <i>ə-'glā-mē-'rā-shən\</i>	Breakage <i>'brākij/</i>	Attrition <i>ə trīSH(ə)n/</i>	Secondary Nucleation <i>'sekən,dērē nōō'klē-ā'shən/</i>	Dissolution <i>/disə'looSH(ə)n/</i>
Unweighted CLD Enhanced resolution to fine particle changes							
Square-Weighted CLD Enhanced resolution to coarse particle changes							
Trends Track size and count in individual size classes							

Hints and Tips

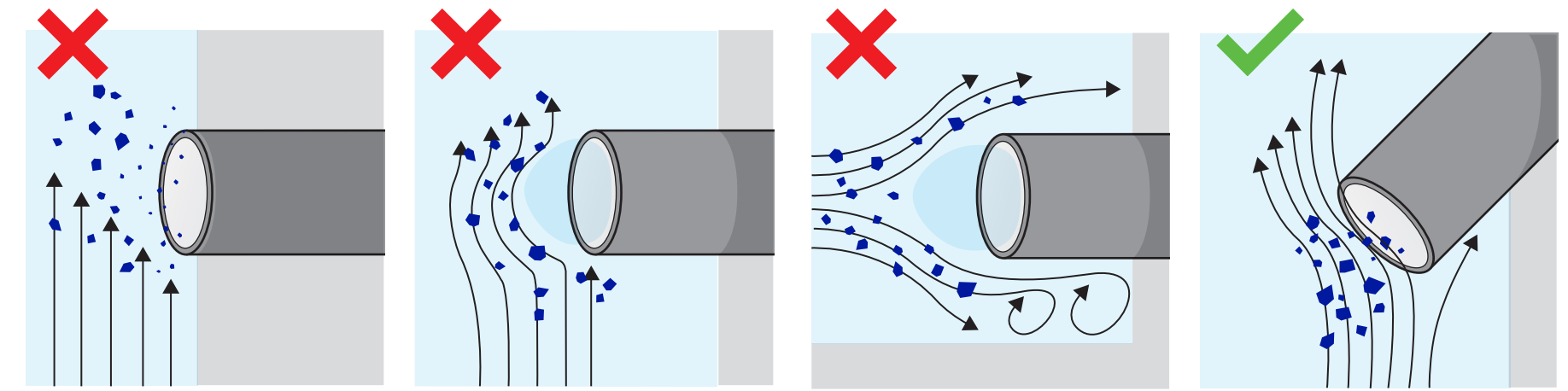
Additional Parameters
Integrate agitation, temperature and pH data to see how parameters impact particles

Don't Forget to Weight!
To get the full particle story look at the unweighted and square weighted distributions

Correct Orientation
Implementation of a ParticleTrack instrument (a) flush with wall of vessel or pipeline; (b) inserted tangentially to process flow; (c) inserted perpendicular to process flow at an elbow; and (d) inserted at optimal angle (45°) relative to process flow.

Correct Location
Avoid poorly mixed regions of the pipeline or vessel to ensure a representative measurement

View Particles in Real Time
ParticleView provides real-time microscopy images that help with data analysis and provide comprehensive understanding



Compare with Offline Methods
Traditional particle size analyzers are designed for quality control. ParticleTrack is designed for process monitoring and optimization. Results can be compared but both are needed to deliver the best particle.

Contact Information
Our TAC _____
Our Account Manager _____
Our Service Rep _____
Other _____