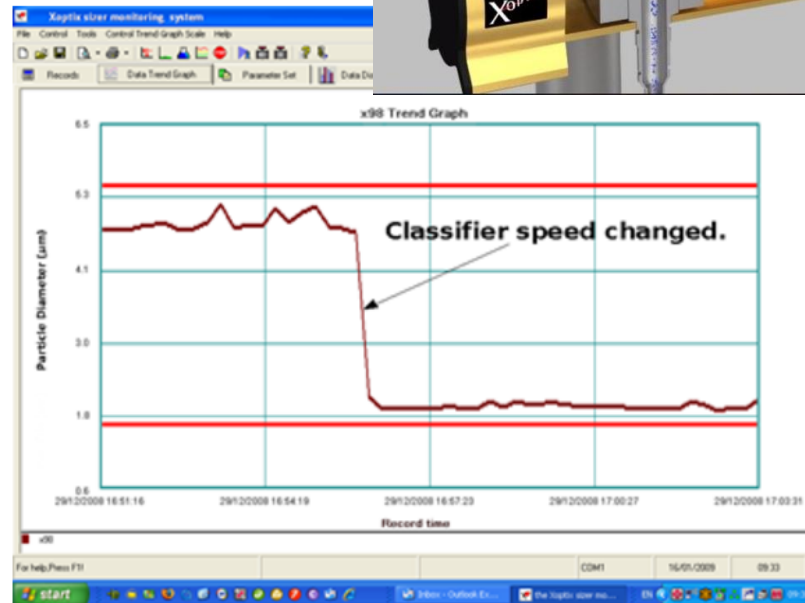
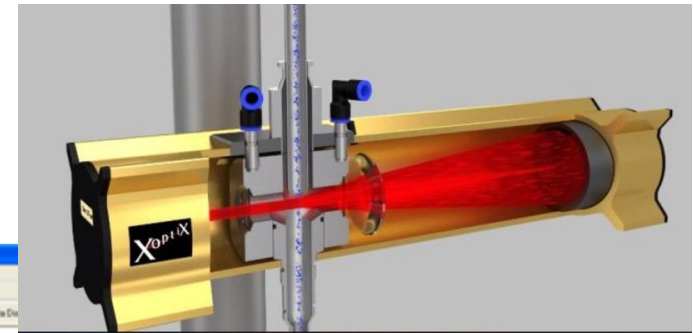


In-Line Particle Size Analyzer Offers Real-Time Monitoring of Industrial Mineral Processes

A.J. DeCenso
Preferred Process Solutions

Stuart Barton
Xoptix Ltd.





Centrifuging



Screening



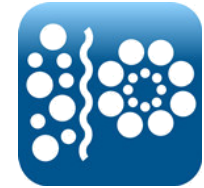
Milling



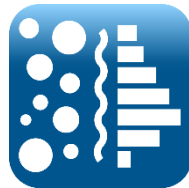
Sorting



Preferred Process Solutions



Air Classifying



Analyzing



Plant Design



Coating



Companies Represented



- ✓ Screening Equipment
- ✓ Centrifuges
- ✓ Vibratory Mills

ecutec[®]

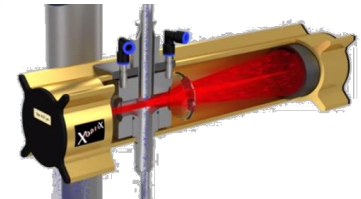


- ✓ Air Classifiers
- ✓ Grinding Mills
- ✓ Coating Systems
- ✓ Plant Design



- ✓ Sensor Based Ore Sorters

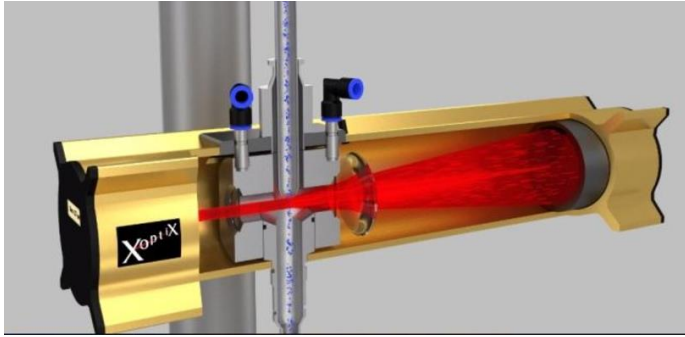
XoptiX



- ✓ On-Line Particle Size Analyzers



Xoptix On-Line Particle Size Analyzer

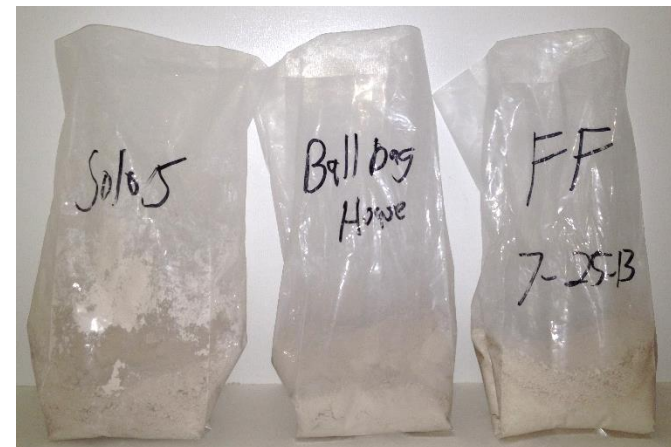


Why is it needed??



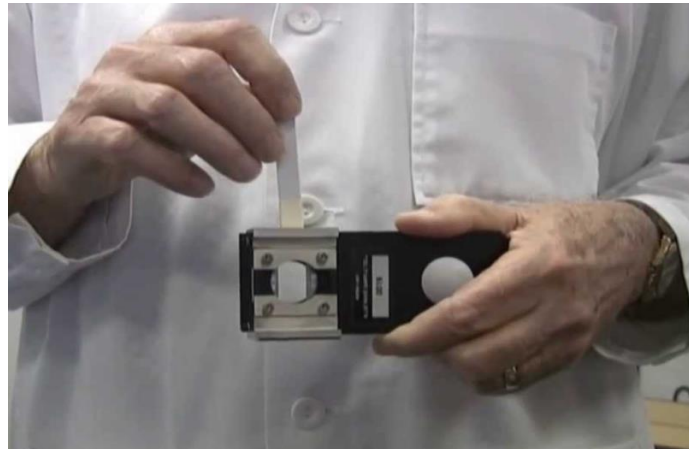
Let's Examine the Typical Sampling Process

- Is the sample representative?
- How often is the sample taken?
- Are the sample bags properly labelled?
- Can the samples be taken in a safe manner?
(note the ladder in below photo required to reach the valve)



Let's Examine the Typical Analysis Process

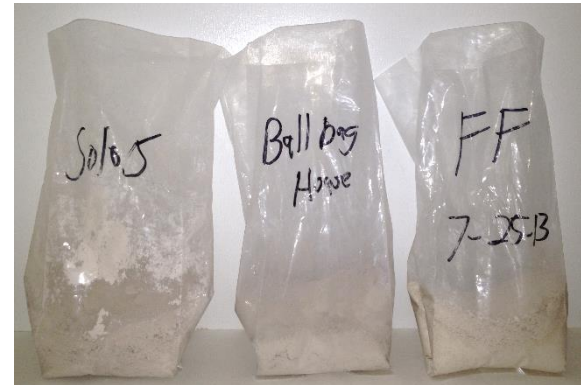
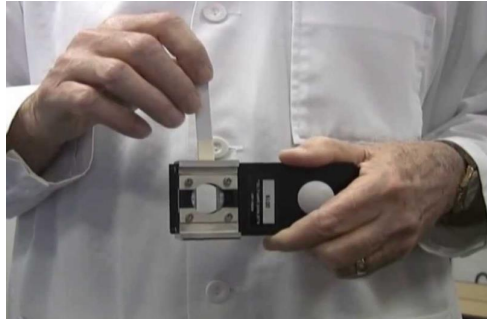
- Is sample properly prepared for analysis?
- Is the instrument's cell clean?
- How many samples are in the queue?
- Is the lab tech properly trained?



How Long Does it Take to Get Results?

With typical manual sampling and analysis...

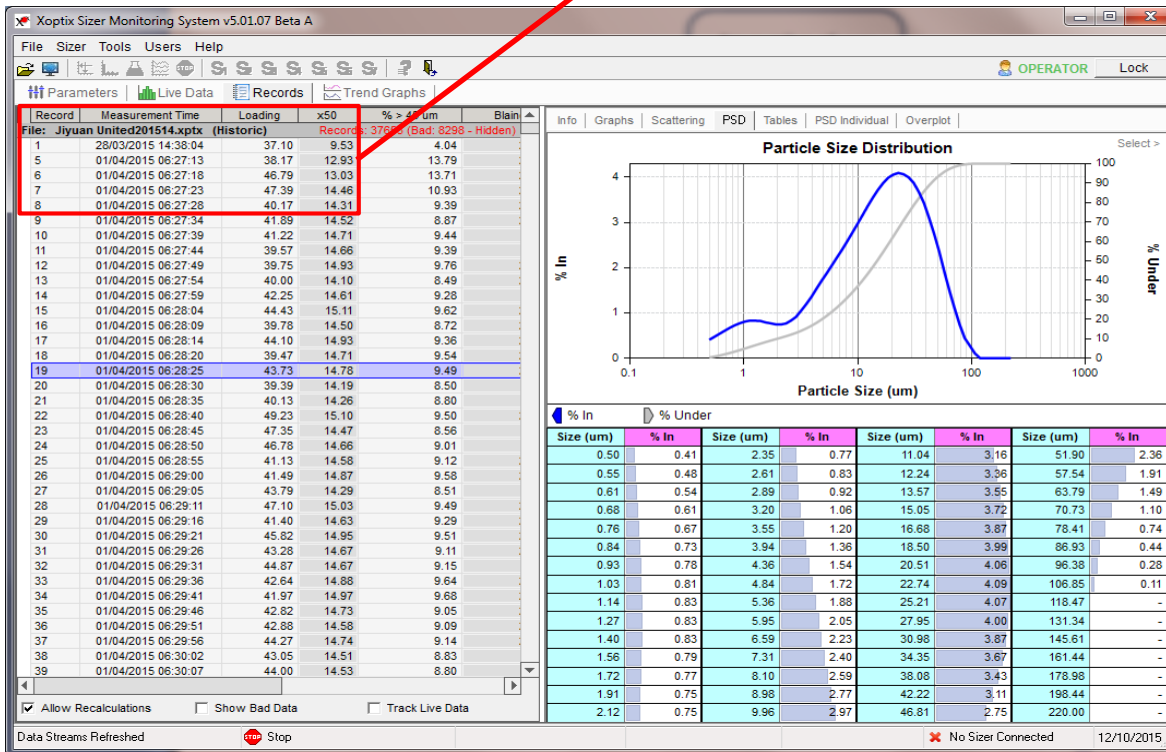
- at best 30 minutes...
- but usually hours



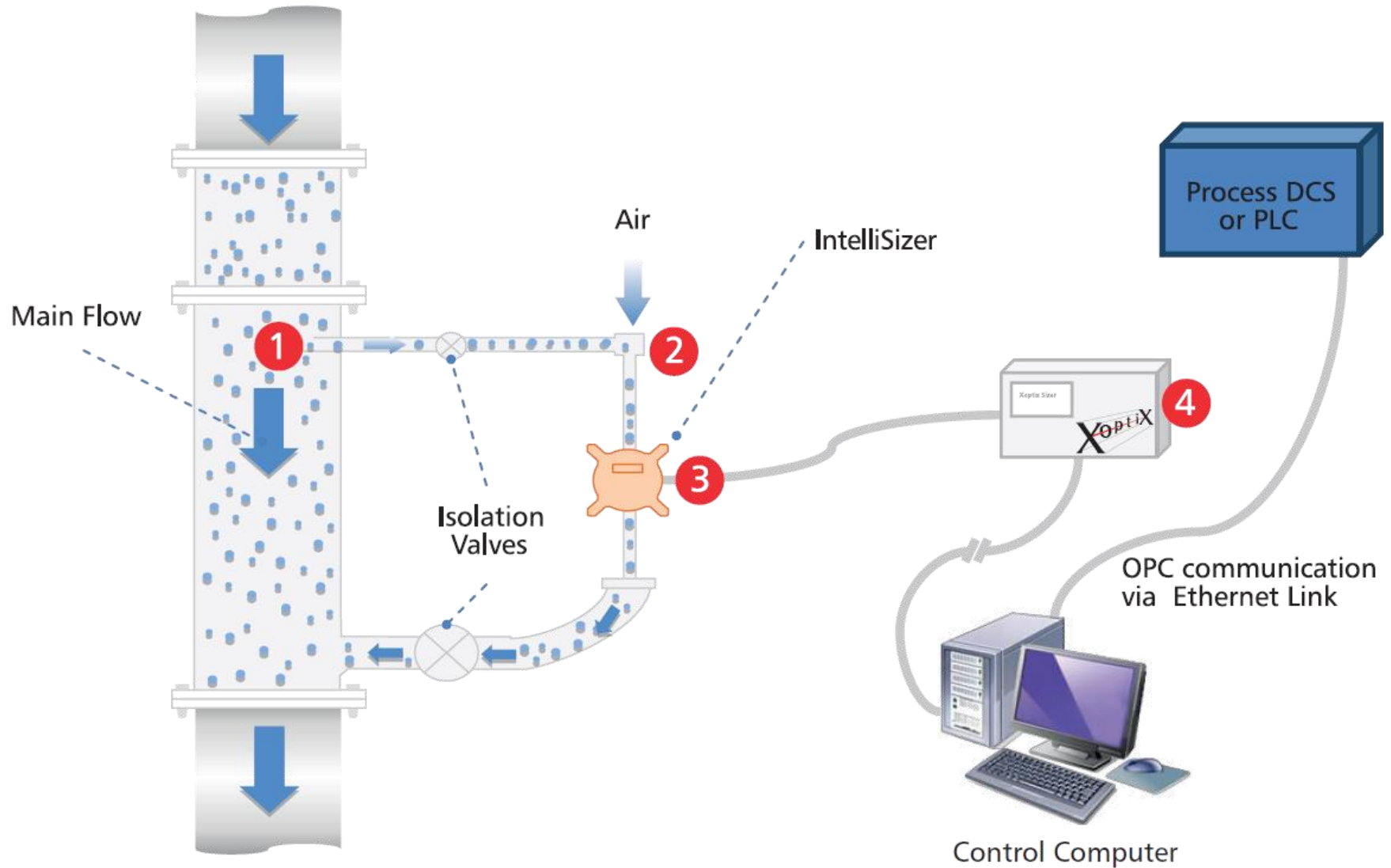
How Long Does it Take to Get Results?

With Xoptix... 5 seconds!

Record	Measurement Time	Loading	x50
File: Jiyuan United201514.xptx (Historic) Records			
1	28/03/2015 14:38:04	37.10	9.53
5	01/04/2015 06:27:13	38.17	12.93
6	01/04/2015 06:27:18	46.79	13.03
7	01/04/2015 06:27:23	47.39	14.46
8	01/04/2015 06:27:28	40.17	14.31

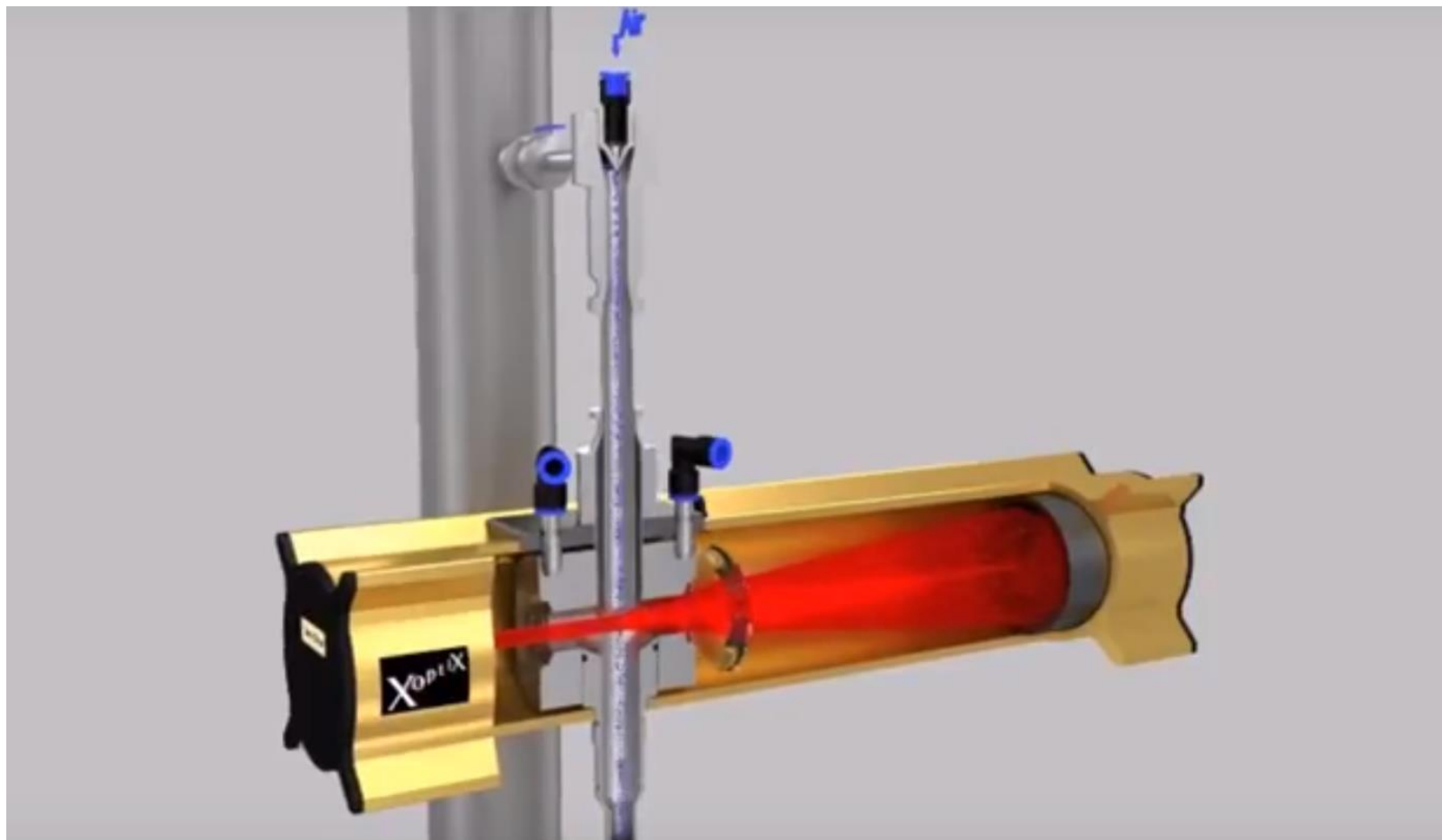


Xoptix On-Line Particle Size Analyzer

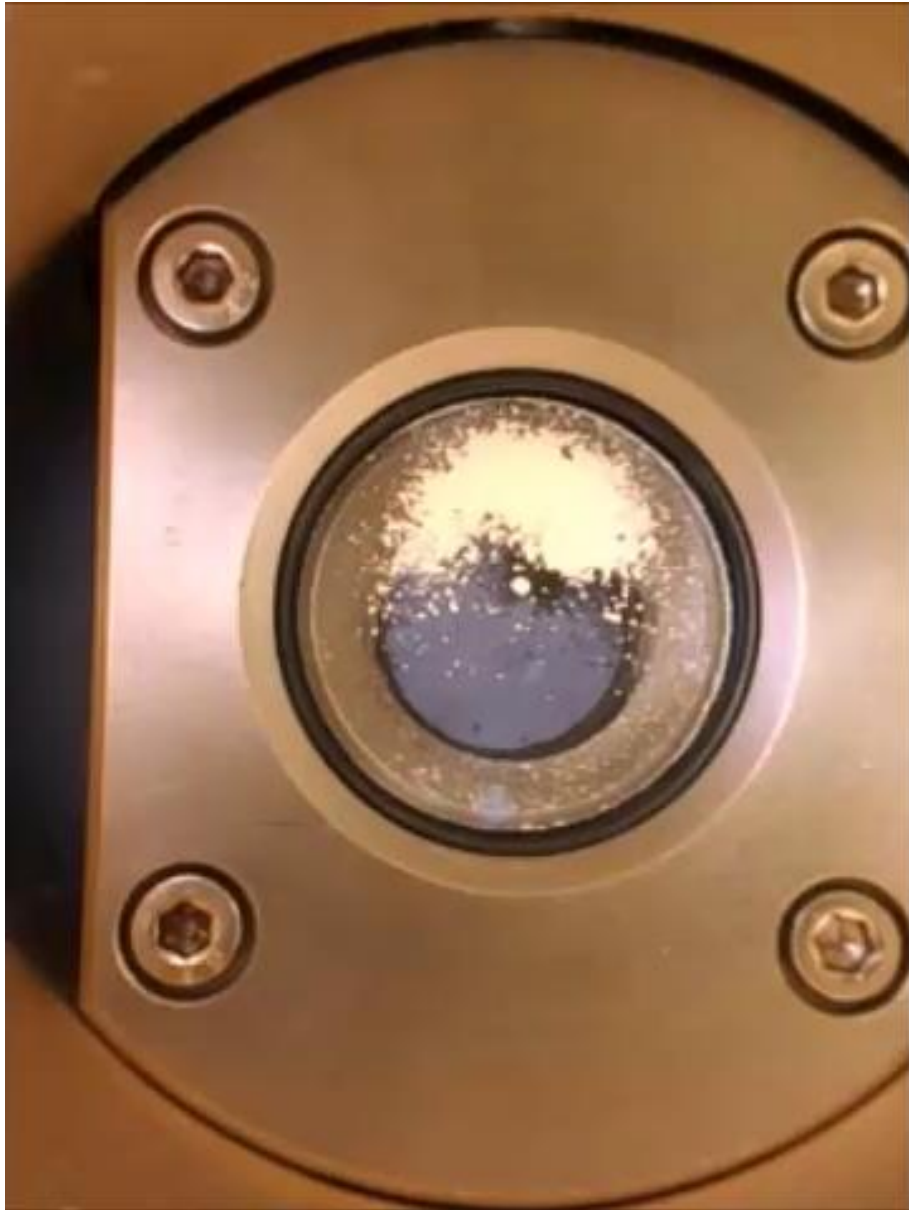


Xoptix On-Line Particle Size Analyzer Video

How it Works Video: <https://youtu.be/jlmXYoorhnA>



Automatic Cell Clean

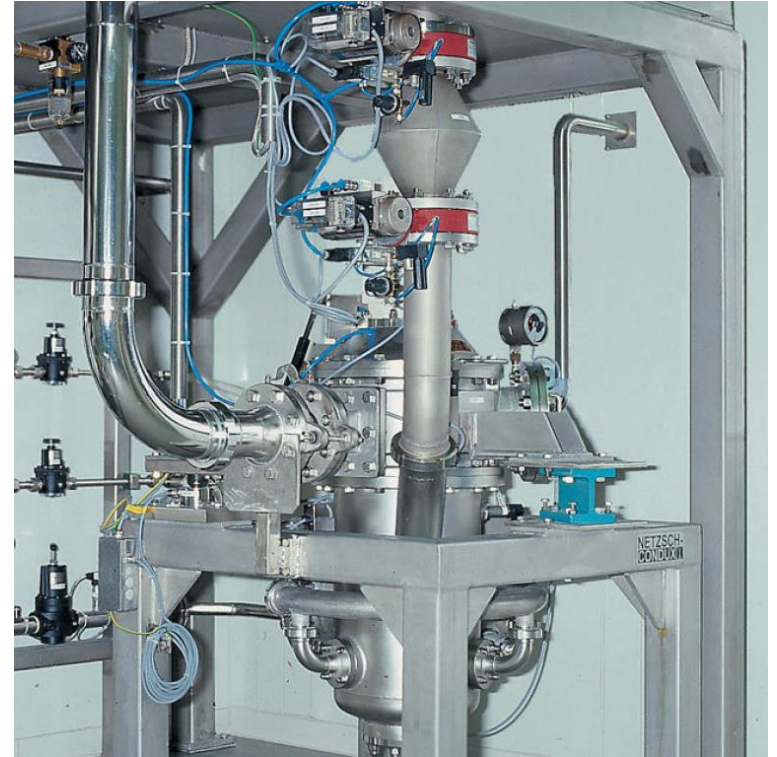


Cell Clean video:

<https://youtu.be/a5t3HyDIQIs>

Two Case Histories

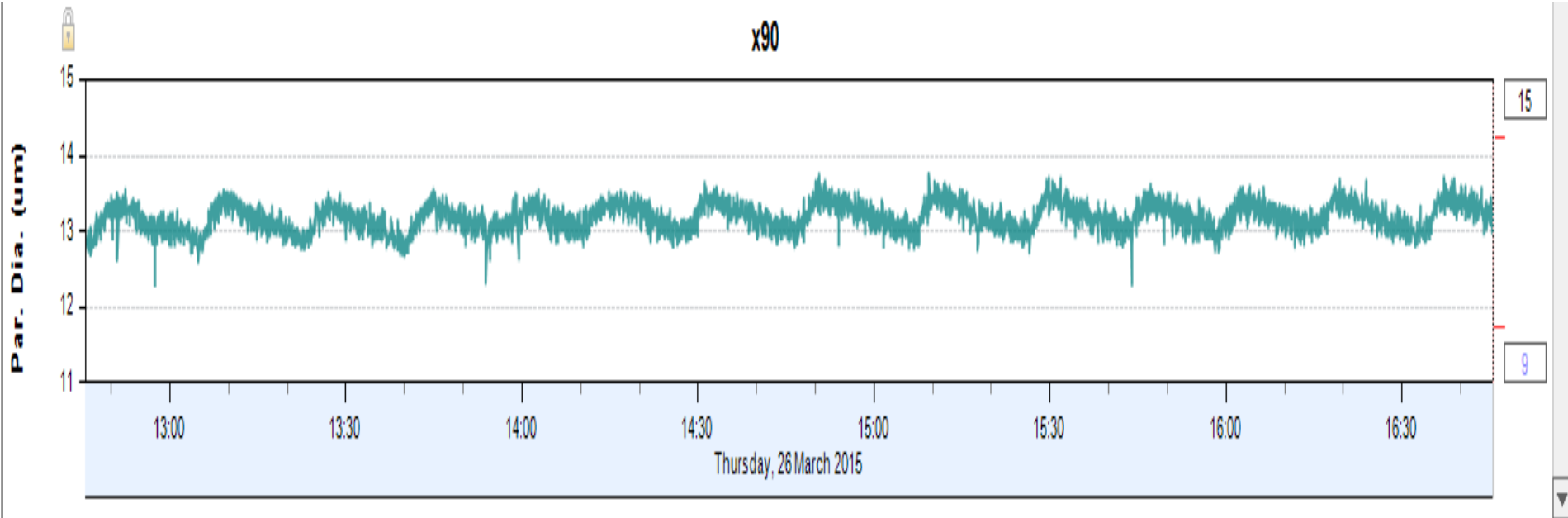
Case #1: Ground silica
from jet mill



Case #2: Ground silica from ball
mill / air classifier circuit

Case #1: Ground Silica, $d_{90} = 13\mu\text{m}$

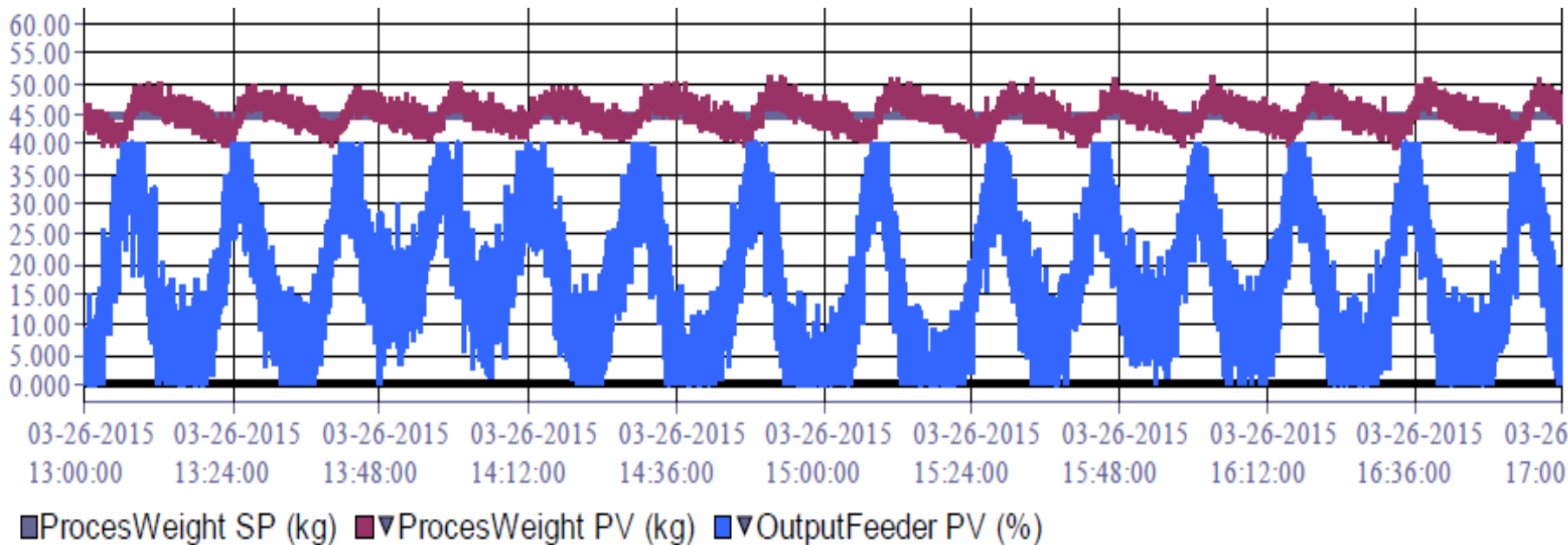
- Ground silica produced in a jet mill.



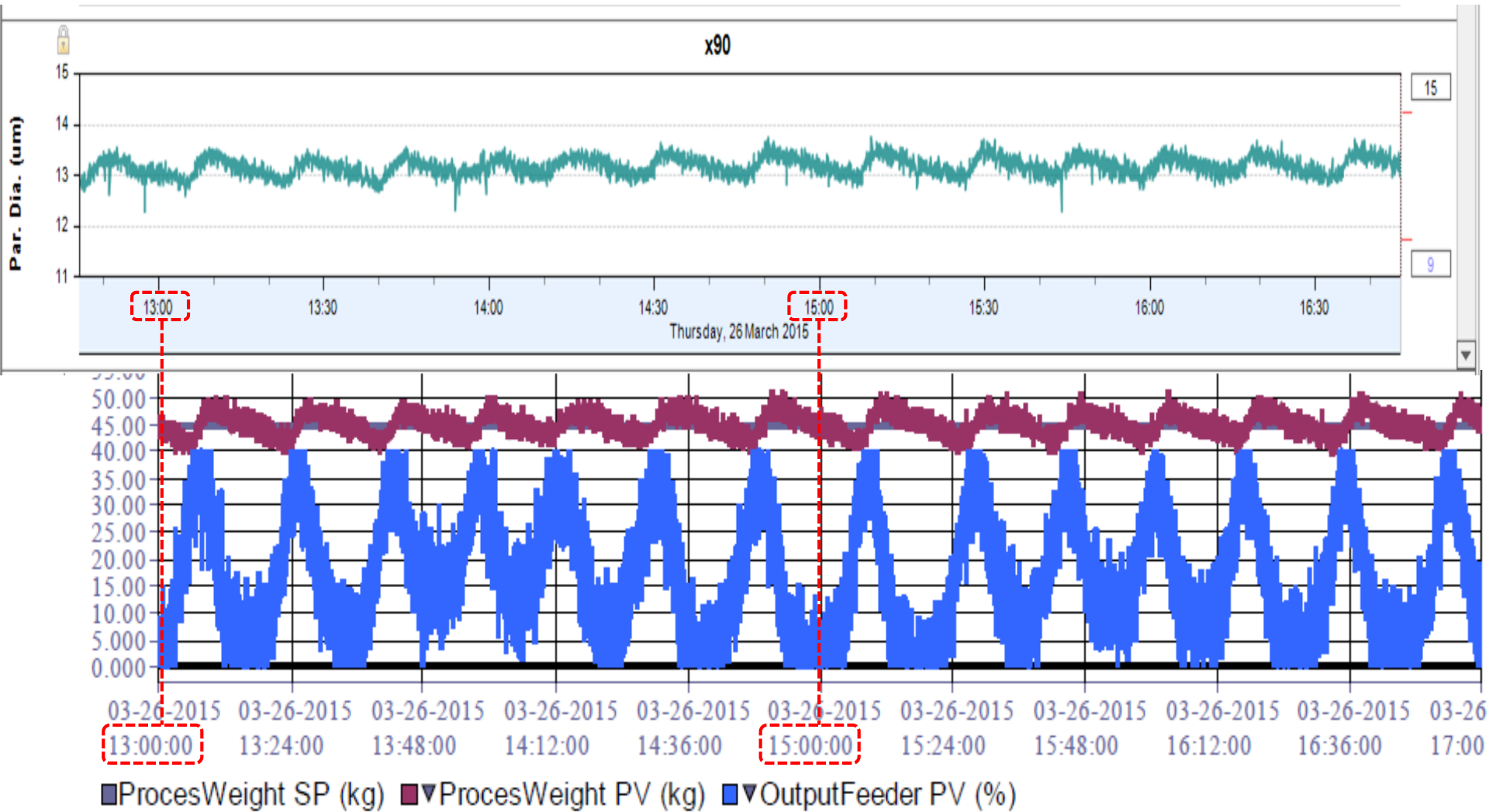
- Xoptix sizer data generally matched results of hand sample / lab analyses.
- But the customer was troubled by cyclical nature of Xoptix trend graphs and suspected there might be a problem with the sizer.

Mystery of the Oscillating d_{90}

- After some investigation, the customer's process engineer suspected that the PID on the mill feeder might be causing a varying load in the mill.
- Data from the jet mill's load cells was used to plot weight of material in the mill.
- The pattern looked familiar...



Mystery Solved!!



Case #2: Hoben International Ltd

Located in Derbyshire, UK

Products include...

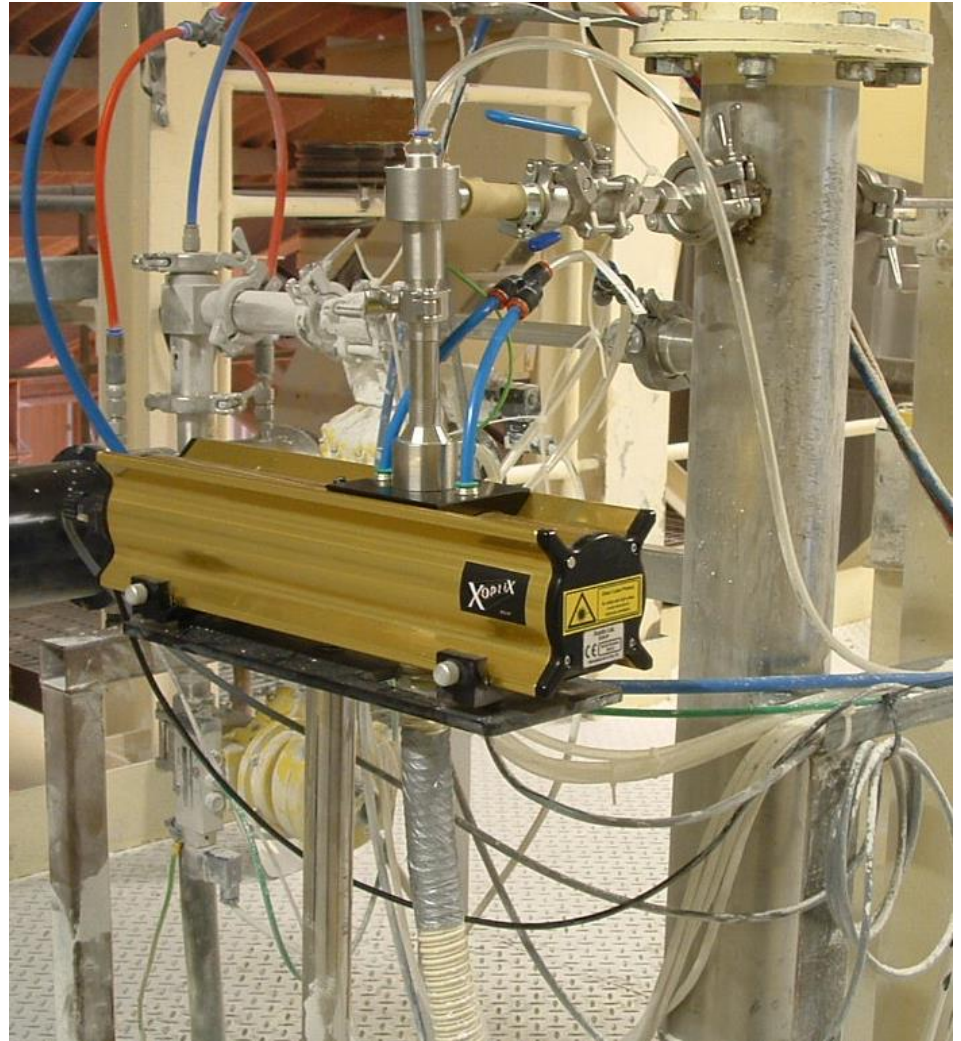
- ground silica
- cristobalite
- grouts
- perlite
- ceramic proppant



- Materials are milled in continuous ball mills with air classifiers
- Ground silica products range from as coarse as $d_{50} = 40\mu\text{m}$ to as fine as $d_{50} = 7.5\mu\text{m}$

Xoptix Replaced Underperforming Competitive Unit

- As a result of increasing demands from their customers for greater product consistency, Hoben decided to automate their milling circuits and install an in-line particle size analyzer.
- They initially purchased a competitor's sizer, but found that it was unreliable.
- Eventually they replaced it with an Xoptix system.



Xoptix Sizer Has Demonstrated Superior Reliability

- The Xoptix sizer has proven to be much more reliable than the unit it replaced.



- In 5 years there has been only one major service, that being a replacement of the ceramic wear parts.

Hoben's Experience with Xoptix Sizer

Hoben's goal of product consistency has been met.

Bulk truck drivers are given a sample bag to deliver to their customer with each load.



One customer contacted Hoben and asked if the samples were truly from that truck, or did they all really come from a sample bucket kept for the purpose of delivering identical samples!

A little free advertising for Xoptix...

HOBEN INTERNATIONAL LTD

HOME ABOUT US

You are here: Home » Products » Cristobalite And Silica Silica Sands and Milled Flours

Silica Sands and Milled Flours

Cristobalite Sands and Milled Flours

Milling Grade Change

(click photo to enlarge)

In-line Particle Analyser

(click photo to enlarge)

Silica Sands and Milled Flours

Hoben are special

Silica is milled in a mill charged with Alumina

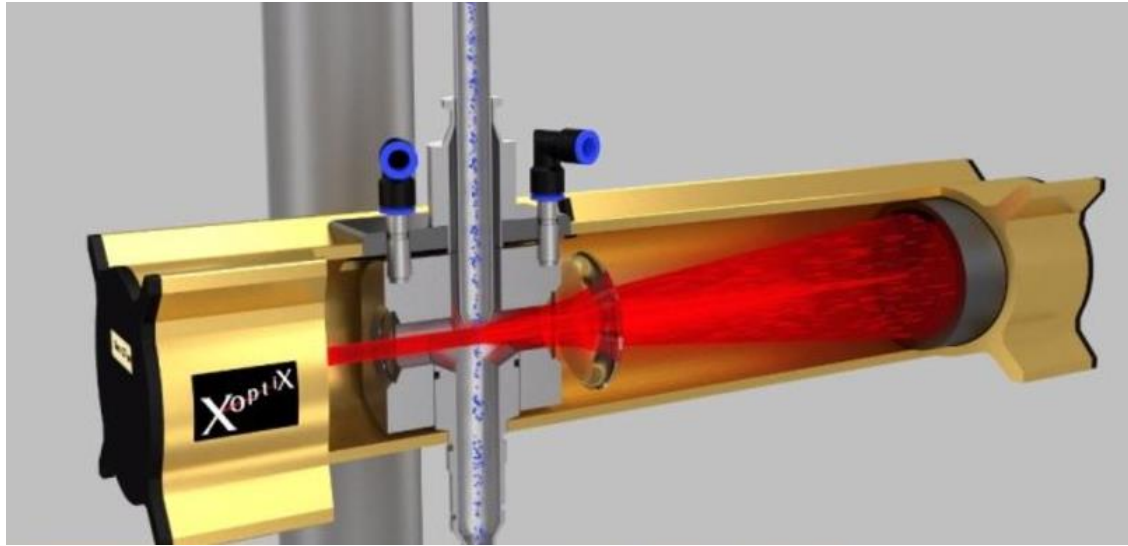
Particle sizing is critical to the ultimate consistency of the product

We offer a range of grades

Grades

Silica Name	+53 Micron	Technical Data Sheet	MSDS
Sand	92 - 97%	Silica Dried Sands Data Sheet (19 KB)	Silica Dried Sands MSDS Sheet (163 KB)
HIQ5	45 - 60 %	Silica HIQ5 Data Sheet (19 KB)	Silica HIQ5 MSDS Sheet (163 KB)
A50	25 - 35%	Silica A50 Data Sheet (19 KB)	Silica A50 MSDS Sheet (163 KB)
HIQ20	10 - 20%	Silica HIQ20 Data Sheet (19 KB)	Silica HIQ20 MSDS Sheet (163 KB)





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