CLAIRITY™

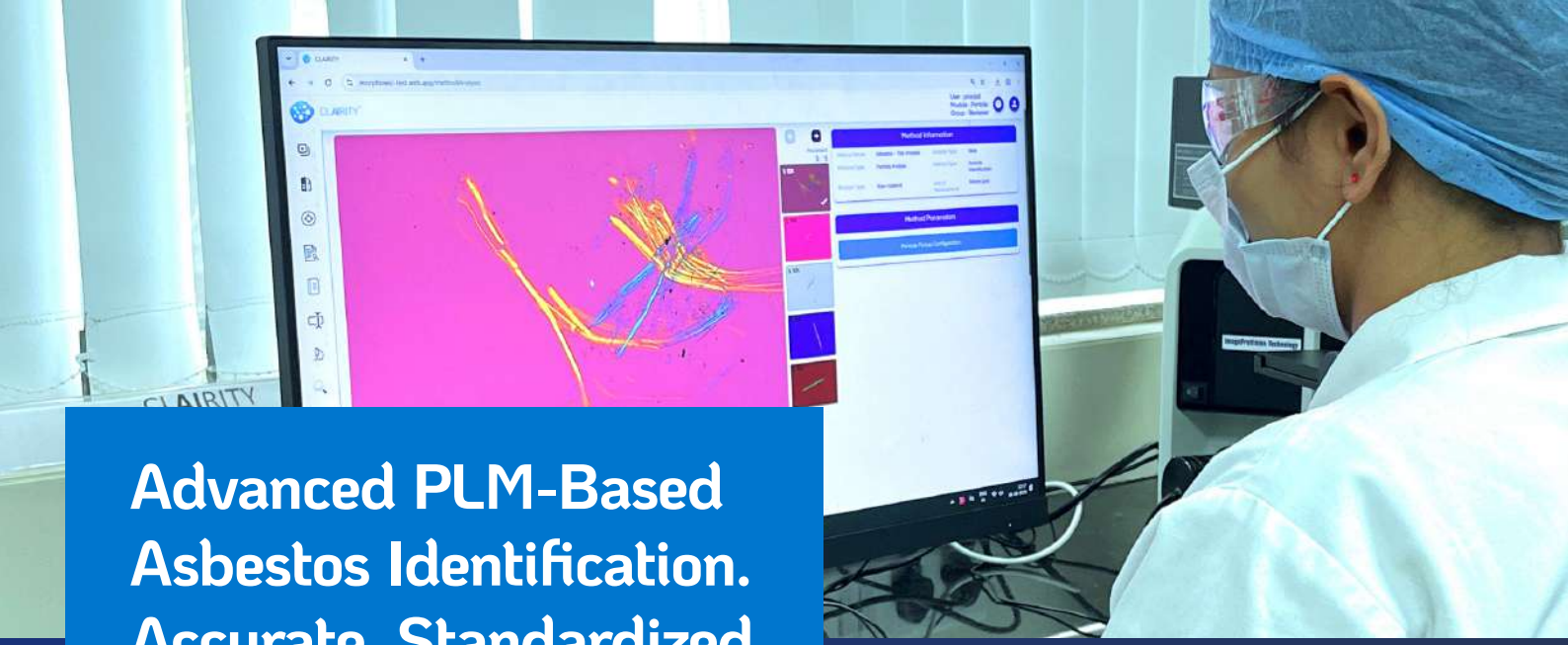
ImageProVision™
IMAGE ANALYTICS. REIMAGINED.

PLM-Based Identification of Asbestos in Pharmaceutical Talc

Detecting Asbestos in Talc Using CLAIRITY™ PARTICLE aligned with USP <901> & USP <1901>



Reliable.
Standardized.
Regulatory Ready.



Advanced PLM-Based Asbestos Identification. Accurate. Standardized. Regulatory Ready.

CLAIRITY™ PARTICLE provides a comprehensive digital solution for Polarized Light Microscopy (PLM)-based identification of asbestos in pharmaceutical talc. From fibre screening and optical characterization to digital documentation and reporting, the system enables reproducible analysis aligned with USP <901> and USP <1901>.

01 **Morphology & Aspect Ratio**
Characterizes suspect particles based on fiber morphology, geometry, and aspect ratio to identify potential asbestiform characteristics.

02 **Color & Pleochroism**
Documents particle color and pleochroism under plane-polarized light (PPL) for optical characterization.

03 **Extinction Characteristics**
Records **extinction behavior and extinction angle** under crossed-polarized light (XPL) to support amphibole classification.

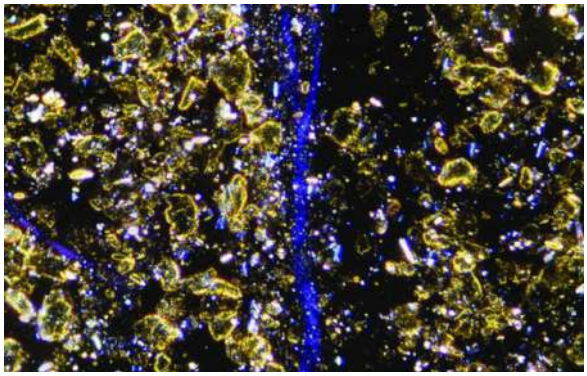
04 **Sign of Elongation:**
Evaluates the optical sign of elongation using **XPL with a first-order wave plate (RPL)** to differentiate characteristic optical responses.

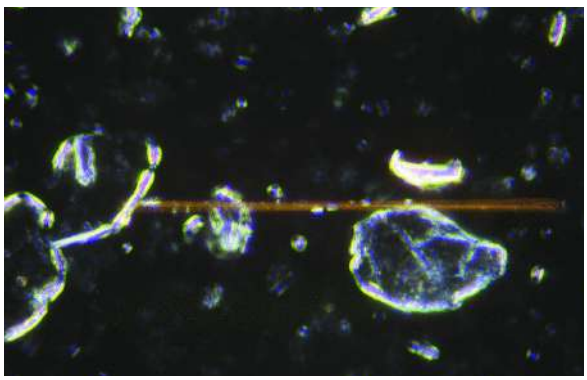
05 **Refractive Index Assessment**
Supports qualitative RI matching using **dispersion staining and Becke line observations** across appropriate RI liquids.

06 **Birefringence Characterization**
Determines birefringence from the difference between the **maximum and minimum observed refractive indices** of suspect particles.

07 **Amphibole Classification**
Optical characteristics can be used to document suspect phases as **monoclinic or orthorhombic amphibole,** where applicable.

08 **Asbestiform Morphology Assessment**
Valuates **aspect ratio, thin fibrils, parallel bundles, splayed ends, matted fibers, and curvature** to determine whether the observed fiber population exhibits asbestiform characteristics.





Engineered for Accurate PLM-Based Asbestos Identification

CLAIRITY™ PARTICLE combines advanced polarized light microscopy with intelligent digital imaging to standardize asbestos identification in pharmaceutical talc. The system streamlines fibr evaluation, image documentation, and reporting while supporting laboratories in performing consistent, reproducible PLM analysis.



Key Features

USP <901> & <1901> Aligned Workflow

Supports the standardized PLM workflow for asbestos fibre identification, from sample preparation and optical characterization to documentation and reporting.

21 CFR Part 11 – Ready Architecture

Fully compliant with regulatory framework through e-signature, audit trials, controlled access, and data integrity protocols.

Detailed Reporting & LIMS Integration

Generate customizable, audit-ready reports with measurement overlays, metadata, and export formats compatible with most laboratory systems.

Compatible With

- Polarized Light Microscopes (PLM)
- Brightfield & Cross-Polarized Microscopy
- Manual & Semi-Automated Microscopy Systems

Ideal For

01 Pharmaceutical QC Laboratories

02 Contract Testing Laboratories

03 Pharmaceutical Raw Material Manufacturers

04 Pharmaceutical QC Laboratories

05 Cosmetic Testing Laboratories

06 Personal Care Product Manufacturers

Why CLAIRITY™ PARTICLE - Outcomes & Value

Delivering Confidence Across Your Testing Workflow

01 Particle-by-Particle Reporting

Automatically records the **number of detected particles** with an individual result entry for each particle.

02 Digital Particle Imaging

Captures and displays **digital images of individual particles,** supporting visual documentation of detected asbestos fibers.

03 Dimensional Characterization

Reports **particle length and width in µm,** enabling quantitative characterization of each detected fiber.

04 Morphological Analysis

Provides key morphology parameters including **aspect ratio, texture, intensity, and elongation** for comprehensive particle characterization.

05 Automated Asbestos Classification

Identifies and classifies detected particles as **Asbestos,** with particle-level results linked to their corresponding images.

06 Asbestos Identification Results

Generates a clear summary remark indicating the **presence and identified type of asbestos**, such as Amphibole (Tremolite).

07 Traceable Digital Results

Combines **particle images, quantitative measurements, morphological parameters, and identification results** in a structured report for documentation and review.

08 USP <901>-Aligned Reporting

Supports the documentation and reporting of asbestos detection results with **comprehensive particle-level data and visual evidence.**

Statistics

Parameters	Avg Length	Avg Width	Avg Aspect ratio	Count	Percentage (%)
Particle	-	-	-	-	-
Asbestos	711.59	31.57	22: 1	7	100%
Agglomerate	-	-	-	-	-
Total	**711.59**	**31.57**	**22: 1**	**7**	**100%**

Size Range Details (Asbestos)

Size Range (um)	Count	Percentage (%)
0-5	0	-
5-2000	7	100%

Morphological Values

No.	Object	Type	Length (µm)	Width	Aspect Ratio	Texture	Intensity	Elongation
1		Asbestos	714.67	28.48	25:1	68	120	0.960
2		Asbestos	712.68	30.09	23:1	50	125	0.957
3		Asbestos	708.60	33.79	20:1	53	128	0.952
4		Asbestos	708.60	33.79	20:1	62	200	0.952
5		Asbestos	713.85	31.52	22.:1	64	201	0.955
6		Asbestos	714.15	29.53	24:1	63	190	0.958
7		Asbestos	708.60	33.79	20:1	62	198	0.958

Contact Us to Learn More

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