



**Cleanliness**



# ParticleView 5

Particle Analysis Conforming to:

ISO16232, VDA19.1, ISO4406

as well as customer specific standards

# Quick - User-friendly - Accurate



## Time Saving

- Analyze in less than 2min ( 47mm filter)
- Fast automatic settings for light & threshold values.
- List of templates for different standards.

## Analyze System in Two Models

- ParticleView HR(Particle analysis from 3,5µm)
- ParticleView Lite(Particle analysis from 20µm)

## Features:

- Conforms to: ISO16232, VDA19.1, ISO4406 as well as customer specific standards.
- Preset or order templates
- Autofocus for every image improves accuracy
- Reflective mode for detecting metallic particles
- Analyze filters from 25-90mm
- Standard templates or custom reports (Excel & PDF)
- Tech support remotely with screen sharing



**"All shiny things are not valued as gold..." What is the composition of the particle ?**

## Technical Cleanliness

Industry focus on sustainability means new components are designed with advanced functions sensitive to harmful particles.

The need for controlling particle cleanliness in the manufacturing process are now mandatory for many components in the industry.



**When was the particle created?**



**How harmful is the particle?**

## Particle Analysis



Normally made in two steps;

1. Extraction of particles from component
2. Gravimetric measurement or analysis by a particle counting microscope

The particle extraction is normally performed in a controlled environment with an extraction unit designed for the component and a validated method according to specified standard.






## Reporting in ParticleView

Report template version: 1

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  <p><b>NYLI</b> METROLOGY</p> </div> <div style="text-align: center;"> <h1>Cleanliness Report</h1> </div> <div style="text-align: right;">  <p>Accred. no. 2387 Preliminary SAC/CEC 1705</p> </div> </div>	
<b>General:</b> Analysis performed by: Nyli Metrology AB Operator: Joakim Thom Contact: joakim@nyli.se Phone no.: 0522 - 646 644 Order no.: 7053	
<b>Customer/Component:</b> Customer: aaaaaa Customer contact: bbbbbb Component: Cooler Part number: cccccc No.analyzed: 1	
<b>Extraction:</b> Procedure: Agitation Extraction Fluid: G60 Fluid temp: 55-60°C Fluid Conc: 2.5% Test volume: 550 Fluid Analyzed: 100% Fluid Pressure/Flow rate: 1.5 LPM Rinsing Nozzle: 2.5 mm Filter type: 0.65 µm filters Filter size: 47mm	<b>Analysis:</b> Analysis system: LV150 [i.d.14-019, 14-020] Software: Partview 4 Analysis Method: QI-004-10 Edition 3:2020 Reference stage: id.: 371 Digital image res.: 1,3685 Filter area analyzed: 100% Gray Value: 55% (±5%) 1") Threshold Value: 75 (5.3%)
<b>Requirement documentation:</b> Standard doc.: ISO16232 Wetted Area[cm2] 12065 G-number: 1	
<b>Extraction performed by:</b> Nyli Metrology AB <b>Extraction is not included in the accreditation</b> <b>Comments:</b>	

The analysis is traceable to the national physical laboratory with UKAS number 0478  
This report may not be reproduced other than in full, except if Nyli has given written approval.  
For the terms of accreditation and uncertainty see last page.  
1\*) Used threshold value is based on calibration and detection test.

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 18. *Journal of Internal Medicine* 2012; 272: 105–115  
 doi: 10.1111/j.1365-2796.2011.03900.x

 <b>METROLOGY</b>	Report no: NYLI 1.052 09-jun-23  <h2 style="margin: 0;">Cleanliness Report</h2>	 Adopted to: ISO 9001 Planning ISO 9001:2015																	
<b>Particle count data and component cleanliness code</b>																			
Size class (µm)	N	C.L.	F.L.	L	A.S.														
<b>Requirement (ISO-Class)</b>	17	14	10	2	2(h)														
Non-reflective	8184	3699	173	0	-														
Soft fibre	0	1	17	0	-														
Reflective	455	7262	271	0	-														
Concentration	6830	3661	17	0	0.4														
ISO Code	10	12	4	00	0														
Blank Code	0	0	0	00	00														
Largest particle (blank test)						348 µm													
Largest non-reflective:						4278 µm													
Largest soft fibre:						1515 µm													
Largest reflective:						2874 µm													
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p style="color: blue;">Non Reflective</p>  <p>L:4278µm W:927µm</p> </div> <div style="text-align: center;"> <p style="color: blue;">Reflective</p>  <p>L:2874µm W:467µm</p> </div> <div style="text-align: center;"> <p style="color: blue;">Soft fibre</p>  <p>L:1515µm W:22µm</p> </div> </div>																			
<b>Remarks/comments:</b>																			
No comments.																			
Particle sizes smaller than 15µm is not included in the accreditation.																			
<b>TEST SUMMARY:</b>																			
<b>Not Approved</b>																			
See detailed evaluation of the results on the last 2 pages.																			

Report template version: 1


Report no: PV4.1-002 (9-jun-22)


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Cleanliness Report

Accredited to ISO 9001  
 Provenning  
 SUPPLIERS

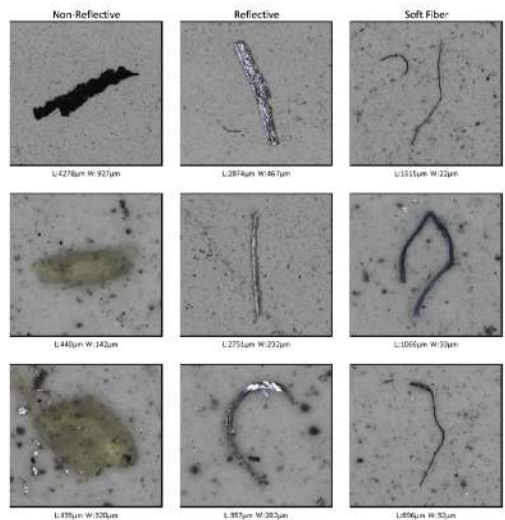
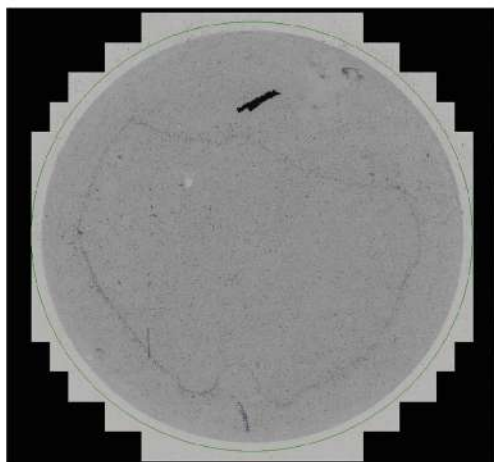

Report no: PVL-3-202 08-jun-22


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Cleanliness Report

Acknowledged  
 PVL-3-202  
 08-jun-22

Result - Pictures of particles (Sample 1)



## References

# **VOLVO**

**Construction Equipment**



**Donaldson®**  
*Filtration Solutions*

**Hydra**  
**Specma**



**BOSCH**

**rexroth**

A Bosch Company



Complete cleanlab, designed and delivered to Mitsubishi Turbochargers and Engine Europe, Almere, Netherlands.  
extraction cabinet, particle counting system  
instruments and stainless steel furniture  
– all delivered by NYLI Metrology.

#### **Why Choose NYLI as a supplier?**

- 50 years of experience as a specialized supplier for automotive and aero industry.
- Design, assembly and quality control all made in Sweden
- Customized customer solutions possible
- Our ambition is to make the complex simple
- Installation, service, Training and support, accessed by our specialized engineers from NYLI or our certified distributors.
- CE and RoHS certified products

