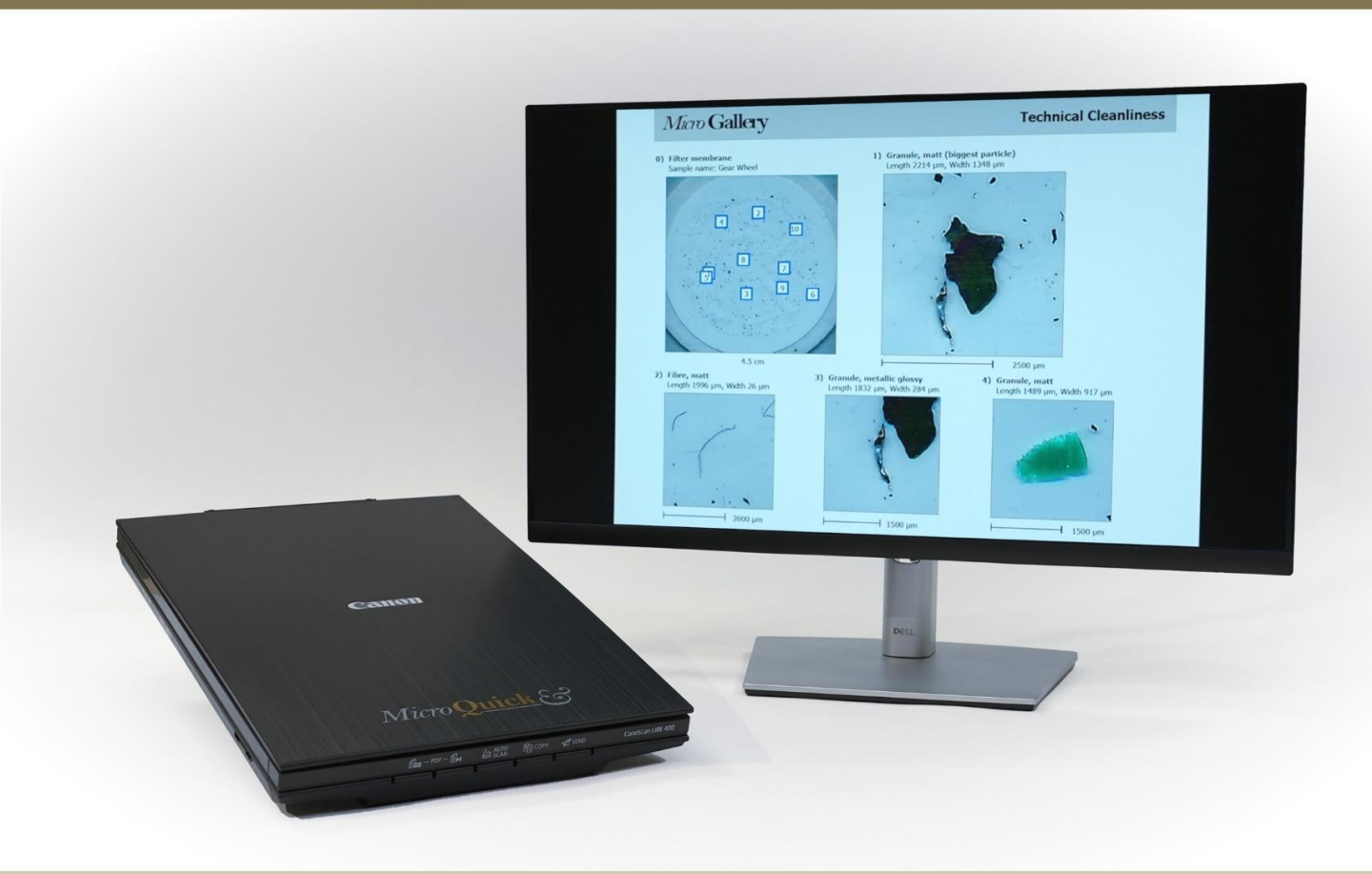


MicroQuick

Ultra-Fast Particle Scanner for Parts Cleanliness Testing

Easy to Use | Fast Results

Established Industry Standard

VDA-19.1 & ISO-16232 Compliant

by

RJL Micro & Analytic

www.particle-scanner.com

About MicroQuick

Fast and Easy to Use

- Filter analysis in 2.5 minutes plus reporting
- Front-end implemented in Microsoft Excel™

Absolute Robust

- Robust consumer technology scanner
- No warranty case within 7 years

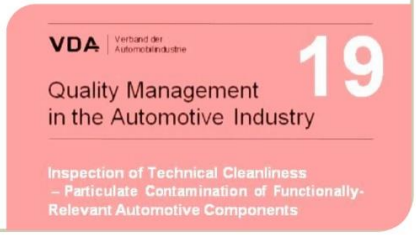
Zero Maintenance

- Self-calibration routine to be done by user
- Automated audit report generation

VDA-19.1 & ISO-16232

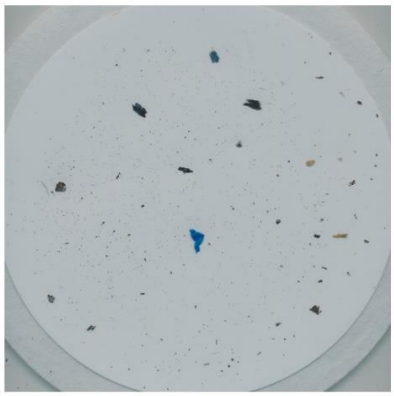
The working groups of VDA-19.1 and ISO-16232 have compared the MicroQuick scanner with conventional microscopes by proficiency testing and rated the particle scanner positively.

Consequently, the scanning technology has been approved for the standard particle analysis for cleanliness testing according to VDA-19.1 (2015) and ISO-16232 (2018).

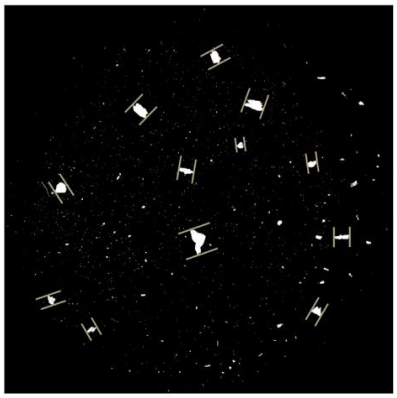


Three Simple Steps

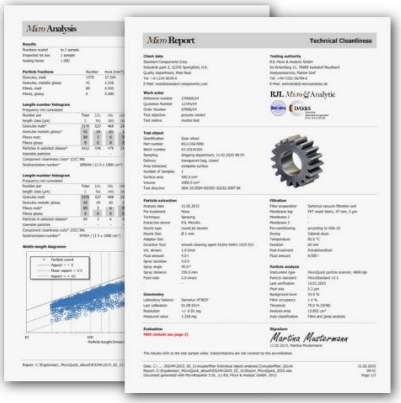
① Scan



② Analysis



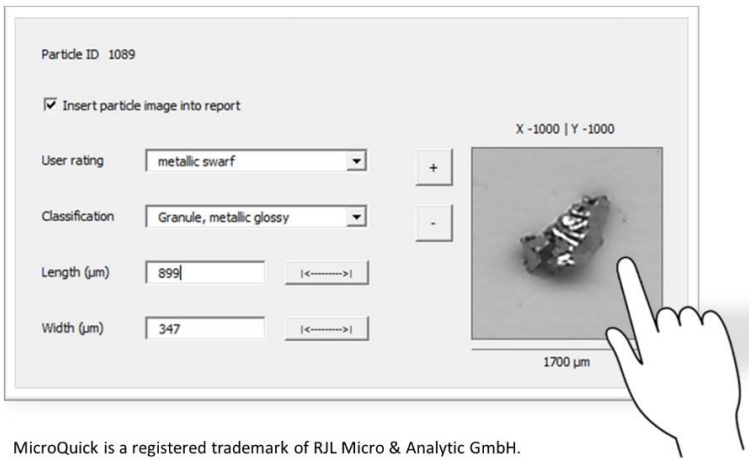
③ Report



Included Features

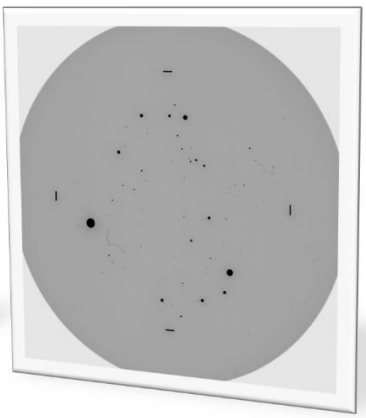
MicroEditor

- Manual refinishing (separation and stitching of particles)
- Re-classification of particles (fibres, metallic glossy)
- Length and width measure check, user rating per particle



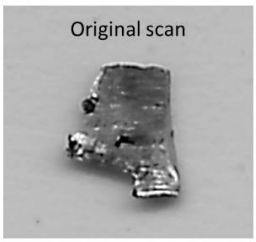
MicroStandard

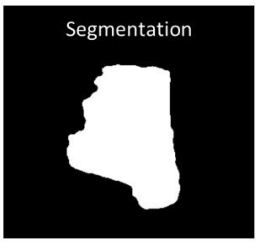
- 70 particles, size range 25-1000 µm
- 100 % detection rate guaranteed
- Automated re-calibration, reports

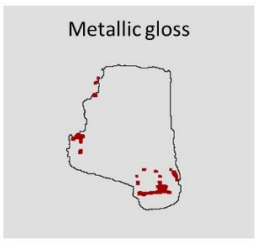


Metallic Gloss Detection

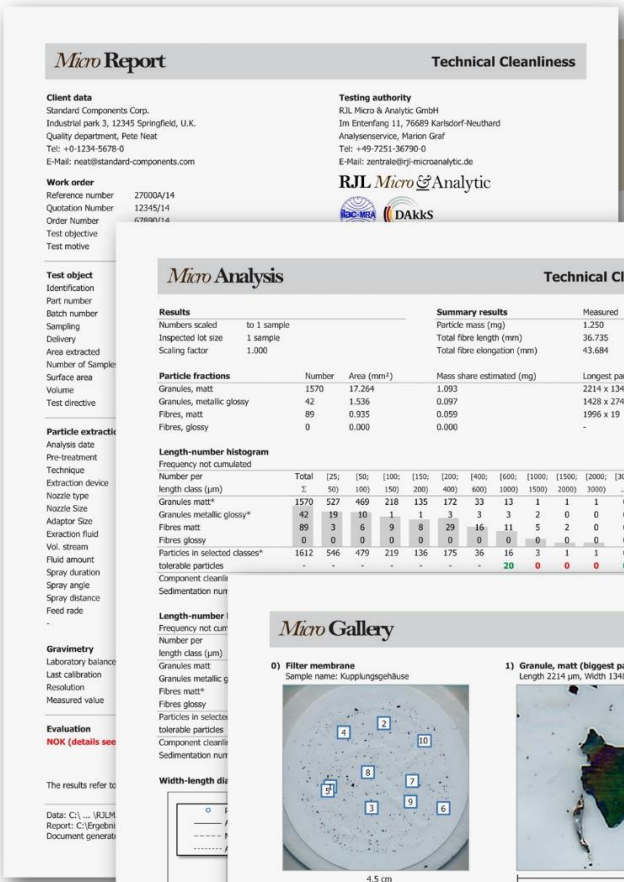
- Fully automatic recognition of metallic reflective particles
- Flat bed scanner equipped with unique optical filter for superior detection of metallic gloss
- RJL Micro & Analytic GmbH proprietary technology







New MicroReporter Series 5


Micro Report — Technical Cleanliness

Client data
Standard Components Corp.
Industrial park 3, 12345 Springfield, U.K.
Quality department, Pete Neat
Tel: +0-1234-5678-0
E-Mail: neat@standard-components.com

Testing authority
RJL Micro & Analytic GmbH
Im Entenfang 11, 76689 Karlsdorf-Neuthard
Analysenservice, Marion Graf
Tel: +49-7251-36790-0
E-Mail: zentrale@rjl-microanalytic.de

Work order
Reference number 27000A/14
Quotation Number 12345/14
Order Number 67890/14
Test objective
Test motive

Test object
Identification
Part number
Batch number
Sampling
Delivery
Area extracted
Number of Samples
Surface area
Volume
Test directive

Particle extraction
Analysis date
Pre-treatment
Technique
Extraction device
Nozzle type
Nozzle Size
Adaptor Size
Exraction fluid
Vol. stream
Fluid amount
Spray duration
Spray angle
Spray distance
Feed rade

Gravimetry
Laboratory balance
Last calibration
Resolution
Measured value

Evaluation
NOK (details see

The results refer to

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Report: C:\Ergebni
Document generate

Micro Analysis — Technical Cleanliness

Results
Numbers scaled to 1 sample
Inspected lot size 1 sample
Scaling factor 1.000

Summary results
Particle mass (mg) Measured 1.250 Tolerable 1.500
Total fibre length (mm) 36.735
Total fibre elongation (mm) 43.684

Particle fractions

	Number	Area (mm²)	Mass share estimated (mg)	Longest particle (µm)
Granules, matt	1570	17.264	1.093	2214 x 1348
Granules, metallic glossy	42	1.536	0.097	1428 x 274
Fibres, matt	89	0.935	0.059	1996 x 19
Fibres, glossy	0	0.000	0.000	-

Length-number histogram
Frequency not cumulated

Number per length class (µm)	Total Σ	[25; 50]	[50; 100]	[100; 150]	[150; 200]	[200; 400]	[400; 600]	[600; 1000]	[1000; 1500]	[1500; 2000]	[2000; 3000]	[3000; ...]
Granules matt*	1570	527	469	218	135	172	33	13	1	1	1	0
Granules metallic glossy*	42	19	10	1	1	3	3	3	2	0	0	0
Fibres matt	89	3	6	9	8	29	16	11	5	2	0	0
Fibres glossy	0	0	0	0	0	0	0	0	0	0	0	0
Particles in selected classes*	1612	546	479	219	136	175	36	16	3	1	1	0
tolerable particles	-	-	-	-	-	-	-	20	0	0	0	0

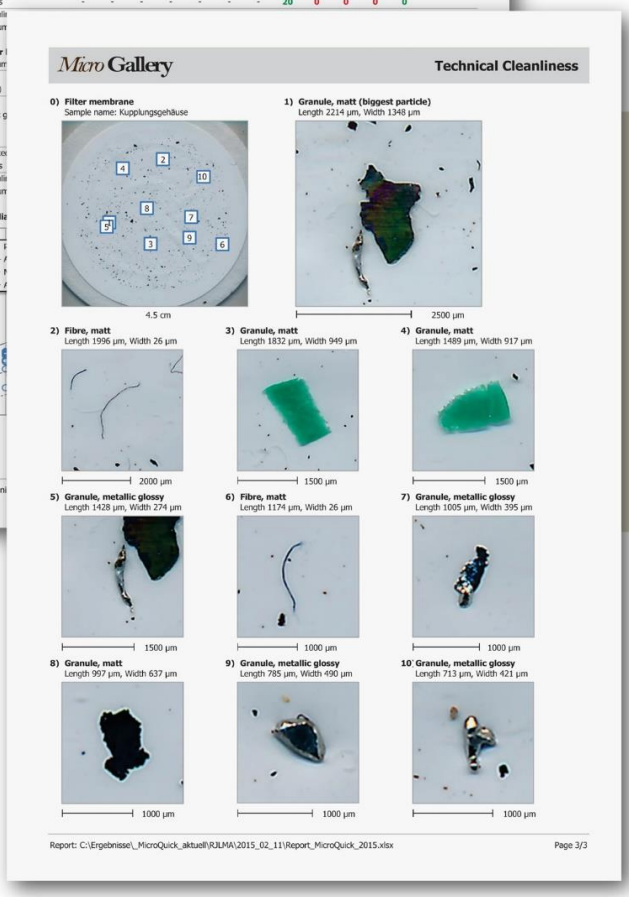
Component cleanli
Sedimentation nu

Length-number
Frequency not cur
Number per
length class (µm)
Granules matt
Granules metallic g
Fibres matt*
Fibres glossy
Particles in selecte
tolerable particles
Component cleanli
Sedimentation nu

Width-length dia

10

Report: C:\Ergebni


Micro Gallery — Technical Cleanliness

0) Filter membrane
Sample name: Kupplungsgehäuse

1) Granule, matt (biggest particle)
Length 2214 µm, Width 1348 µm

4.5 cm

2500 µm

2) Fibre, matt
Length 1996 µm, Width 26 µm

2000 µm

3) Granule, matt
Length 1832 µm, Width 949 µm

1500 µm

4) Granule, matt
Length 1489 µm, Width 917 µm

1500 µm

5) Granule, metallic glossy
Length 1428 µm, Width 274 µm

1500 µm

6) Fibre, matt
Length 1174 µm, Width 26 µm

1000 µm

7) Granule, metallic glossy
Length 1005 µm, Width 395 µm

1000 µm

8) Granule, matt
Length 997 µm, Width 637 µm

1000 µm

9) Granule, metallic glossy
Length 785 µm, Width 490 µm

1000 µm

10) Granule, metallic glossy
Length 713 µm, Width 421 µm

1000 µm

Report: C:\Ergebnisse_MicroQuick_aktuell\RJLMA\2015_02_11\Report_MicroQuick_2015.xlsx Page 3/3

Header

Wizard to fill-in information related to client, test object, method, parameters of extraction, filtration and instrumentation

Results

- Total particle mass and estimated per class
- Two histograms, user-defined length, width, area
- Selectable ISO-16232 or user-defined size bins
- Component cleanliness code (CCC)
- Sedimentation number for ambient monitoring
- Possibility to project numbers to specific lot size
- Length-width point diagram

Gallery

- All images in colour
- Filter overview image
- Map for re-localisation of displayed particles on membrane
- Up to 100 particle micro snapshots displayed at once
- User-defined sorting by length, width, area, etc.
- Each particle can be refinished by means of MicroEditor
- Selectable contrast enhancement
- Particle zoom function

Further Reports

- Mini report (single page)
- Extraction curve validation
- Cleanliness trend tool
- Scanner audit report
- ISO-16232 conformity check

MicroQuick Accessories

MicroTrap

Particle monitor for ambient cleanliness control, suitable for MicroQuick scanner

MicroStamp

Stamping tool to strip-off contamination directly from dedicated surfaces

MicroEx

Basic set of laboratory equipment for contamination extraction from parts

MicroMag

Mini microscope for manual analysis, simple navigation on membrane, magnification 50x and 200x

Multiscanner

Automated sequential particle analysis, up to three samples, suitable for:

- Filter membranes
- Particle monitor MicroTrap
- Stamping tool MicroStamp

World-Wide Customer Base

RJL Micro & Analytic GmbH
Im Entenfang 11
76689 Karlsdorf-Neuthard
Germany / Deutschland

www.rjl-microanalytic.com
sales@rjl-microanalytic.com
phone: +49-7251-36790-0
fax: +49-7251-36790-79

Sales representative