



PAMAS Calibration Suspensions for the calibration of automatic particle counters

Secondary calibration suspension according to ISO 11171

Application:

Maintenance, verification and recalibration of automatic particle counters in compliance with calibration standard ISO 11171

Product features:

- The suspensions are made with the help of a master particle counter which has been primarily calibrated with certified NIST SRM® 2806d suspensions
- Traceable to the calibration standard of the US National Institute of Standards and Technology (NIST)



PAMAS Calibration Suspensions for the calibration of automatic particle counters



Calibration standard ISO 11171

The calibration standard ISO 11171 defines the standardised calibration of automatic particle counters for the contamination analysis of hydraulic fluids.

Automatic particle counters are used for contamination control of fluids. Periodic calibration assures their measuring accuracy.

The calibration standard ISO 11171 defines procedures for the calibration of automatic particle counters. Every system needs to be calibrated to define the relation between electric signal and particle size. A primary calibration is performed with the „Standard Reference Material“ SRM® 2806d. This suspension is made with a known concentration of reference material RM 8631 in hydraulic fluid. The particle distribution is precisely analysed and certified by the *National Institute of Standards and Technology* (NIST). Because of the limited availability and the high cost, this material is only used for the calibration of the master systems.

Secondary calibration suspension according to ISO 11171

PAMAS manufactures reference material for the calibration of automatic particle counters. The regulations of the calibration standard ISO 11171 are strictly followed during production.

The exact particle size distribution of the prepared secondary calibration suspensions is shown on the batch certificate.

Secondary suspension is used for initial factory calibrations and for later recalibrations.

Calibration Suspension Certificate
in accordance with ISO 11171:2020 Annex F
(Secondary Suspension referring to SRM 2806d)

Batch No.: 2021969/mtd-junc
The certification is valid for unopened bottles until 09 June 2023.
Base Fluid: Aero Shell Fluid 41
Contamination: RM 8631a MTD

Reference System:
Counter Model: SIRS Counter Serial No.: 200-3406
Sensor Model: HCB-ID-25/25 Sensor Serial No.: 1-2525-1263
Calibration Date: 12.04.2021 Calibration Method: ISO 11171:2020
Volume counted per run: 10,00 ml

Particle Analysis Report for 6 bottles:

Size \geq (µm(c))	Amount/Particle	Std. Dev. Particles	COV %	Max. COV %
3,0	8464,50	51,62	0,61	5,3
4,0	5165,92	24,44	0,47	5,3
5,0	3462,04	24,36	0,70	5,3
6,0	2270,26	19,68	0,86	5,3
7,0	1604,88	15,07	0,93	5,3
8,0	1110,96	12,25	1,10	5,3
10,0	541,89	7,72	1,43	5,3
12,0	288,27	5,61	1,95	5,4
14,0	174,48	4,18	2,40	5,6
15,0	140,71	3,19	2,27	5,6
21,0	47,46	1,33	2,81	6,9
25,0	22,67	1,01	4,45	6,8
30,0	9,11	0,39	4,26	
* 30,0	2,10	0,22	10,49	
* 50,0	0,55	0,14	26,20	
* 70,0	0,05	0,02	45,41	

* The values for diameter \geq 30 µm(c) are for information only.

Marco Nachmann 09.06.2101

The particle size distribution of the secondary calibration suspensions is indicated in the batch certificate.



According to ISO 11171 the particles of a secondary calibration suspension must be counted by the use of a primarily calibrated master particle counter. Before this analysis, the suspension is homogenised via ultrasound.

Specifications

PAMAS offers calibration suspensions for automatic particle counters in bottles of 400 millilitre each.

Calibration suspensions for oil measurements

PAMAS manufactures secondary calibration suspensions for oil measurements:

- Calibration suspension with test dust ISO MTD according to ISO 11171
- Calibration suspension with test dust ACFTD according to ISO 4402

Calibration suspensions for water measurements

Particle counters for water applications are calibrated with monosized latex spheres according to standard ISO 21501. PAMAS also stocks the monosized latex spheres used for this calibration.

Clean oil for flushing and dilution

Clean oil, filtered by PAMAS, is also available in bottles of 400 millilitre each. The filtered oil contains less than 20 particles per millilitre > 4 µm(c).



Management System
ISO 9001:2015

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ID 9105038017