

	Catatan Hasil Kalibrasi Internal <i>Internal Calibration Record</i> Pipet Berskala / Graduated Pipet	No. : F-PM-01-53
		Rev. : 00
	Date : 3 September 2014	

Merek : <i>Brand</i>	Bidang/Lokasi : <i>Department/Location</i>
Type/Kelas : <i>Type/Class</i>	Suhu ruang : <i>Room temperature</i>
No.Seri : <i>Serial no.</i>	Kelembaban : <i>Humidity</i>
Kode kalibrasi : <i>Calibration code</i>	No. Protap : <i>SOP No.</i>
Kapasitas / Resolusi : ml / ml <i>Capacity / Subdivision (Resolution)</i>	Petugas : <i>Operator</i>
Syarat (kelas A) : ml <i>Requirement (Class A)</i>	Tanggal kalibrasi : <i>Calibration date</i>

Kalibrator yang digunakan <i>Calibrator used</i>	Kode Kalibrasi <i>Calibration Code</i>	Tanggal kalibrasi Kalibrator <i>Cal. date of Calibrator</i>
1. Neraca Analitik 2. Termometer		

Catatan/Note :

$T_{Air} = 24.0 \text{ } ^\circ\text{C}$ $\rho_{Air} = 0.99729 \text{ g/ml}$ $\rho_{Air 20^\circ\text{C}} = 998.202 \text{ kg/m}^3$ $\rho_{AT} = 8 \text{ g/ml}$
 $\rho_{Udara} = 0.0012 \text{ g/ml}$ $V_{borosilikat} = 1.E-05 \text{ } ^\circ\text{C}$ $V_{soda lime} = 2.5.E-05 \text{ } ^\circ\text{C}$ $LOP_{Neraca} = 0.0026 \text{ gram}$
 $U_{Sert Termometer} = 0.7 \text{ } ^\circ\text{C}$ $\Delta\rho/\Delta T = -0.00026 \text{ g/ml}^\circ\text{C}$ $\Delta \text{Suhu} = 24.0 \text{ } ^\circ\text{C}$

A. Data

1. $V_{nominal} =$ ml

Ulangan <i>Rep.</i>	W_{kosong} W_{Empty} (g)	$W_{isi(air)}$ W_{Water} (g)	ΔR ΔR (g)
1			
2			
3			
4			
5			
$\Delta R_{rata-rata/average}$			g
$SD (\sigma_{n-1})$			g
Isi / Volume, $V_{T20 \text{ } ^\circ\text{C}}$			ml

2. $V_{nominal} =$ ml

Ulangan <i>Rep.</i>	W_{kosong} W_{Empty} (g)	$W_{isi(air)}$ W_{Water} (g)	ΔR ΔR (g)
1			
2			
3			
4			
5			
$\Delta R_{rata-rata/average}$			g
$SD (\sigma_{n-1})$			g
Isi / Volume, $V_{T20 \text{ } ^\circ\text{C}}$			ml

3. $V_{nominal} =$ ml

Ulangan <i>Rep.</i>	W_{kosong} W_{Empty} (g)	$W_{isi(air)}$ W_{Water} (g)	ΔR ΔR (g)
1			
2			
3			
4			
5			
$\Delta R_{rata-rata/average}$			g
$SD (\sigma_{n-1})$			g
Isi / Volume, $V_{T20 \text{ } ^\circ\text{C}}$			ml

4. $V_{nominal} =$ ml

Ulangan <i>Rep.</i>	W_{kosong} W_{Empty} (g)	$W_{isi(air)}$ W_{Water} (g)	ΔR ΔR (g)
1			
2			
3			
4			
5			
$\Delta R_{rata-rata/average}$			g
$SD (\sigma_{n-1})$			g
Isi / Volume, $V_{T20 \text{ } ^\circ\text{C}}$			ml

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Uncertainty calculation of nominal volume

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[illegible]

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5. Perhitungan ketidakpastian volume nominal = 0 ml

Uncertainty calculation of nominal volume

No. No.	Sumber Ketidakpastian Source of Uncertainty	Satuan Unit	Distribusi Distribution	Nilai U_i U_i value	Pembagi Divisor	u_i	Coeff. C_i		$u_i C_i$ $u_i C_i$	V V
							Coeff.	C_i		
1	Reproducibility, $U_{Rep.} = \sigma_{n-1}$	gram	Normal		$\sqrt{5}$	0.0000	1.003	1.003	0.00000	4
2	LOP of Balance, $U_{Serf.} = LOP$	gram	Normal		2.0	0.0000	1.003	1.003	0.00000	∞
3	Density of Air (ρ_{Air}) = 10% x 0,0012	g/ml	Rectangular		$\sqrt{3}$	0.00000	1,003 ΔR	0.00.E+00	0.00000	∞
4	Density of Water, $U(\rho_{H_2O}) = T_{serf.} \times \Delta \rho / \Delta T$	g/ml	Normal		1.0	0.00000	-1,003 ΔR	0.00.E+00	0.000000	∞
5	Density of Weights, $U_{Weights} = 10\% \times \rho_{Weights}$	g/ml	Rectangular		$\sqrt{3}$	0.00	1,88E-5 ΔR	0.00E+00	0.0.E+00	∞
6	Temp. of water, $u_{(TH_2O)} = U_{\Delta T_{room}}$	°C	Normal		$\sqrt{3}$	0.0000	1,003E-6 ΔR	0.00E+00	0.000000	∞
7	Coef. thermal, $(U_y) = 10\% \times \gamma$	/°C	Rectangular		$\sqrt{3}$	0.E+00	-5,015 ΔR	0.00E+00	0.00000	∞
8	Resolution, $U_{Res} = 1/2 \times Resolution$	ml	Rectangular		$\sqrt{3}$	0.0000	1.00	1.00	0.0000	∞
9	Drift of Balance, $U_{Drift} = 10\% \times LOP$	gram	Rectangular		$\sqrt{3}$	0.00E+00	1.003	1.003	0.00000	∞
Ketidakpastian baku gabungan / Combined Uncertainty, $u(D) = \text{SQRT}(\sum (u_i C_i)^2)$									0.00000	
Derajat kebebasan efektif / Effective degree of freedom, V_{eff}									#DIV/0!	
Faktor cakupan pada tingkat kepercayaan 95 % / Coverage Factor on uncertainty 95%, $K_{95\%}$									2	
Ketidakpastian gabungan perluasan / Expanded Uncertainty, $U(D) = u(D) \times K_{95\%}$, dalam / in ml									0.000	

C. Hasil Kalibrasi

Calibration Results

No.	$V_{Nominal}$ $V_{Nominal}$ (°C)	$V_{Kalibrasi}$ $V_{Calibration}$ (°C)	Koreksi Correction (°C)	Ketidakpastian, $U_{95\%}$ Uncertainty, $U_{95\%}$ (°C)
1				
2				
3				
4				
5				

Dihitung Oleh Calculated by	Tanggal Date	Diperiksa oleh Checked by	Tanggal Date	Catatan / Kesimpulan Note / Conclusion