

	Catatan Hasil Kalibrasi Internal <i>Internal Calibration Record</i> Sprit / Syringe	No. : F-PM-01-38
		Rev. : 00
		Date : 3 September 2014

Merek : Brand	Bidang/Lokasi : Department/Location
Type : Type	Suhu ruang : °C Room temperature
Kode kalibrasi : Calibration code	Kelembaban : % RH Humidity
Kapasitas : ml Capacity	No. Protap : PKVK054 SOP No.
Resolusi : ml Subdivision (Resolution)	Petugas : Operator
Syarat : ml Requirement	Tanggal kalibrasi : Calibration date

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

Catatan/Note :

$T_{Air} = 24.0 \text{ } ^\circ\text{C}$
 $\rho_{Udara} = 0.0012 \text{ g/ml}$

$\rho_{Air} = 0.99729 \text{ g/ml}$
 $\gamma_{plastik} = 2.5.E-04 \text{ } ^\circ\text{C}$
 $U_{Sert Termometer} = 0.7 \text{ } ^\circ\text{C}$

$\rho_{air 20^\circ\text{C}} = 998.202 \text{ kg/m}^3$
 $\gamma_{glass soda lime} = 2.5.E-05 \text{ } ^\circ\text{C}$
 $\Delta\rho/\Delta T = -0.00026 \text{ g/ml}^\circ\text{C}$

$\rho_{AT} = 8 \text{ g/ml}$
 $LOP_{Neraca} = 0.0026 \text{ gram}$
 $\Delta Suhu = 24.0 \text{ } ^\circ\text{C}$

A. Data1. $V_{nominal} =$ ml

Ulangan Rep.	W_{kosong} W_{Empty} (g)	$W_{isi(air)}$ W_{Water} (g)	ΔR ΔR (g)
1	0.0000		0.0000
2	0.0000		0.0000
3	0.0000		0.0000
4	0.0000		0.0000
5	0.0000		0.0000
$\Delta R_{rata-rata/average}$		0.0000 g	
$SD (\sigma_{n-1})$		0.0000 g	
Isi / Volume, $V_{T20^\circ\text{C}}$		0.0000 ml	

2. $V_{nominal} =$ ml

Ulangan Rep.	W_{kosong} W_{Empty} (g)	$W_{isi(air)}$ W_{Water} (g)	ΔR ΔR (g)
1	0.0000		0.0000
2	0.0000		0.0000
3	0.0000		0.0000
4	0.0000		0.0000
5	0.0000		0.0000
$\Delta R_{rata-rata/average}$		0.0000 g	
$SD (\sigma_{n-1})$		0.0000 g	
Isi / Volume, $V_{T20^\circ\text{C}}$		0.0000 ml	

3. $V_{nominal} =$ ml

Ulangan Rep.	W_{kosong} W_{Empty} (g)	$W_{isi(air)}$ W_{Water} (g)	ΔR ΔR (g)
1	0.0000		0.0000
2	0.0000		0.0000
3	0.0000		0.0000
4	0.0000		0.0000
5	0.0000		0.0000
$\Delta R_{rata-rata/average}$		0.0000 g	
$SD (\sigma_{n-1})$		0.0000 g	
Isi / Volume, $V_{T20^\circ\text{C}}$		0.0000 ml	

4. $V_{nominal} =$ ml

Ulangan Rep.	W_{kosong} W_{Empty} (g)	$W_{isi(air)}$ W_{Water} (g)	ΔR ΔR (g)
1	0.0000		0.0000
2	0.0000		0.0000
3	0.0000		0.0000
4	0.0000		0.0000
5	0.0000		0.0000
$\Delta R_{rata-rata/average}$		0.0000 g	
$SD (\sigma_{n-1})$		0.0000 g	
Isi / Volume, $V_{T20^\circ\text{C}}$		0.0000 ml	

5. $V_{\text{nominal}} =$ _____ ml

Ulangan Rep.	W_{kosong} W_{Empty} (g)	$W_{\text{isi(air)}}$ W_{Water} (g)	ΔR ΔR (g)
1	0.0000		0.0000
2	0.0000		0.0000
3	0.0000		0.0000
4	0.0000		0.0000
5	0.0000		0.0000
ΔR rata-rata/average		0.0000 g	
SD (σ_{n-1})		0.0000 g	
Isi / Volume, $V_{T20\text{ }^{\circ}\text{C}}$		0.0000 ml	

B. Perhitungan Ketidakpastian

Calculation of uncertainty

1. Perhitungan ketidakpastian volume nominal = 0 ml

Uncertainty calculation of nominal volume

[illegible]

2. Perhitungan ketidakpastian volume nominal = 0 ml

Uncertainty calculation of nominal volume

[illegible]

Uncertainty calculation of nominal volume

Uncertainty calculation of nominal volume

[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	0.0000	$\sqrt{5}$	0.0000	1.003	1.003	0.00000	4
2	LOP of Balance, $U_{Sert.} = LOP$	gram	Normal	0.0026	2.0	0.0013	1.003	1.003	0.00130	∞
3	Density of Air (ρ_{Air}) = 10% x 0,0012	g/ml	Rectangular	0.00012	$\sqrt{3}$	0.00007	1,003 ΔR	0.00.E+00	0.00000	∞
4	Density of Water, $U(\rho_{H_2O}) = T_{sert} \times \Delta \rho / \Delta T$	g/ml	Normal	-0.00018	1.0	-0.00018	-1,003 ΔR	0.00.E+00	0.000000	∞
5	Density of Weights, $U_{Weights} = 10\% \times \rho_{Weights}$	g/ml	Rectangular	0.8	$\sqrt{3}$	0.46	1,88E-5 ΔR	0.00E+00	0.0.E+00	∞
6	Temp. of water, $u_{(TH_2O)} = U_{\Delta T room}$	°C	Normal	24.00	$\sqrt{3}$	13.8564	1,003E-6 ΔR	0.00E+00	0.000000	∞
7	Coef. thermal, $(U_\gamma) = 10\% \times \gamma$	°C	Rectangular	2.5.E-05	$\sqrt{3}$	1.E-05	-5,015 ΔR	0.00E+00	0.00000	∞
8	Resolution, $U_{Res} = 1/2 \times Resolution$	ml	Rectangular	0.000	$\sqrt{3}$	0.0000	1.00	1.00	0.0000	∞
9	Drift of Balance, $U_{Drift} = 10\% \times LOP$	gram	Rectangular	0.00026	$\sqrt{3}$	1.50E-04	1.003	1.003	0.00015	∞
Ketidakpastian baku gabungan / Combined Uncertainty, $u(D) = \text{SQRT}(\sum (u_i C_i)^2)$									0.00131	
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									0.003	

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	0.0	0.00	0.00	0.00
2	0.0	0.00	0.00	0.00
3	0.0	0.00	0.00	0.00
4	0.0	0.00	0.00	0.00
5	0.0	0.00	0.00	0.00

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