

LAMPIRAN PERHITUNGAN ANALISA FILTRASI

A. LampiranPerhitungan

1. Densitas(ρ)

$$\rho = \frac{\text{massa piknometer isi} - \text{massa piknometer kosong}}{\text{volume piknometer}}$$

Dimana ; ρ = massajenis / densitas (gr/ml)

Tabel3. Data PerhitunganDensitas

Uji	Massa Piknometer Isi(gr)	Massa PiknometerKosong (gr)	Volume Piknometer (ml)
1.	41,53	16,84	25
2.	41,51	16,84	25
3.	41,65	16,84	25
4.	41,53	16,84	25
5.	41,62	16,84	25
6.	41,61	16,84	25

Perhitungan:

$$\begin{aligned} \text{a. } \rho_1 &= \frac{(41,53-16,84)}{25} = 0,9876 \text{ gr/ml} \\ \text{b. } \rho_2 &= \frac{(41,51-16,84)}{25} = 0,9868 \text{ gr/ml} \\ \text{c. } \rho_3 &= \frac{(41,65-16,84)}{25} = 0,9924 \text{ gr/ml} \end{aligned}$$

2. Viskositas(μ)

$$\mu = \frac{tx \times px}{t0 \times \rho0}$$

• μ_x : viskositas sampel (Cp) • μ_0 : viskositas air (Cp) • t_x : waktu sampel (s)	• t_0 : waktu air (s) • ρ_x : densitas sampel (g/ml) • ρ_0 : densitas air (g/ml)
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Tabel . Data Perhitungan Viskositas

Uji	Densitas sampel (gr/ml)	Densitas air (gr/ml)	Waktu sampel (s)	Waktu air (s)
1.	0,9876	1	0,93	0,8
2.	0,9868	1	0,89	0,8
3.	0,9924	1	0,72	0,8

Perhitungan :

$$\begin{aligned}
 \text{a. } \mu_1 &= \frac{0,93 \times 0,9869 \text{ gr/ml}}{0,8 \times 1 \text{ gr/ml}} \times 1,002 \text{ cp} = 1,149 \text{ cp} = 0,001149 \text{ Ns/m}^2 \\
 \text{b. } \mu_2 &= \frac{0,89 \times 0,9868 \text{ gr/ml}}{0,8 \times 1 \text{ gr/ml}} \times 1,002 \text{ cp} = 1,100 \text{ cp} = 0,0011 \text{ Ns/m}^2 \\
 \text{c. } \mu_3 &= \frac{0,72 \times 0,9924 \text{ gr/ml}}{0,8 \times 1 \text{ gr/ml}} \times 1,002 \text{ cp} = 0,8949 \text{ cp} = 0,0008949 \text{ Ns/m}^2
 \end{aligned}$$

3. Kadar air

$$Kadar \text{ Air} = \frac{B - C}{B} \times 100 \%$$

Dengan keterangan berikut :

B = berat cawan + sampel awal (mg)

C = berat cawan + sampel setelah di oven 1 jam (mg)

Tabel7. Data Perhitungan Kadar Air (*Moisture Content*)

Uji	Koagulan	Plate	B (gr)	C (gr)
1.	Tawas	1	470	290
		2	460	280
		3	300	250
2.	Tawas	1	610	430
		2	520	370
		3	440	320
3.	Tawas	1	640	460
		2	600	450
		3	570	430

Perhitungan :

1. Perhitungan 1 :

$$\text{a.) Plate 1} = \frac{470-290}{470} \times 100 \% = 38,30 \%$$

$$\text{b.) Plate 2} = \frac{460-280}{460} \times 100 \% = 39,13 \%$$

$$\text{c.) Plate 3} = \frac{300-270}{300} \times 100 \% = 10 \%$$

2. Perhitungan 2 :

$$\text{a.) Plate 1} = \frac{610-430}{610} \times 100 \% = 29,50 \%$$

$$\text{b.) Plate 2} = \frac{520-370}{520} \times 100 \% = 28,84 \%$$

$$\text{c.) Plate 3} = \frac{440-320}{440} \times 100 \% = 27,27 \%$$

3. Perhitungan 3 :

$$\text{a.) Plate 1} = \frac{640-460}{640} \times 100 \% = 28,12 \%$$

$$\text{b.) Plate 2} = \frac{600-450}{600} \times 100 \% = 25 \%$$

$$\text{c.) Plate 3} = \frac{570-430}{570} \times 100 \% = 24,56 \%$$

B. LampiranFoto

Gambar 4. Penimbangan lumpur **Gambar 4. Alat Filter Press And Frame** **Gambar 5. Cake**



Gambar 6. Filtrat



Gambar 7. Oven dan viskosimeter ostwald