

LAMPIRAN

1. Perhitungan Densitas

- Sampel Sebelum Evaporasi

Berat Piknometer Isi = 41,44 gr

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,44 \text{ gr} - 15,85 \text{ gr}}{25 \text{ ml}} \\ &= 1,024 \text{ gr/ml} \end{aligned}$$

- Sampel 1 (15 Menit)

Berat Piknometer Isi = 41,50 gr

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,50 \text{ gr} - 15,85 \text{ gr}}{25 \text{ ml}} \\ &= 1,026 \text{ gr/ml} \end{aligned}$$

- Sampel 2 (30Menit)

Berat Piknometer Isi = 41,60 gr

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,60 \text{ gr} - 15,85 \text{ gr}}{25 \text{ ml}} \\ &= 1,030 \text{ gr/ml} \end{aligned}$$

- Sampel 3 (45 Menit)

Berat Piknometer Isi = 41,68 gr

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,68 \text{ gr} - 15,89 \text{ gr}}{25 \text{ ml}} \\ &= 1,033 \text{ gr/ml} \end{aligned}$$

- Sampel 4 (60 Menit)

Berat Piknometer Isi = 41,72 gr

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,72 \text{ gr} - 15,85 \text{ gr}}{25 \text{ ml}} \\ &= 1,035 \text{ gr/ml} \end{aligned}$$

- Sampel 5 (75 Menit)

Berat Piknometer Isi = 41,76 gr

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,76 \text{ gr} - 15,85 \text{ gr}}{25 \text{ ml}} \\ &= 1,036 \text{ gr/ml} \end{aligned}$$

- Sampel 6 (90 Menit)

Berat Piknometer Isi = 41,82 gr

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,82 \text{ gr} - 15,85 \text{ gr}}{25 \text{ ml}} \\ &= 1,039 \text{ gr/ml} \end{aligned}$$

- Sampel 7 (105 Menit)

Berat Piknometer Isi = 41,85 gr

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,83 \text{ gr} - 15,85 \text{ gr}}{25 \text{ ml}} \\ &= 1,040 \text{ gr/ml} \end{aligned}$$

- Sampel 8 (120 Menit)

Berat Piknometer Isi = 41,90 gr

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,90 \text{ gr} - 15,895 \text{ gr}}{25 \text{ ml}} \\ &= 1,042 \text{ gr/ml} \end{aligned}$$

- Sampel 9 (135 menit)

Berat Pikno isi = 41,94

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,94 \text{ gr} - 15,895 \text{ gr}}{25 \text{ ml}} \\ &= 1,044 \text{ gr/ml} \end{aligned}$$

- Sampel 10 (150 menit)

Berat Pikno isi = 41,98

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,98 \text{ gr} - 15,895 \text{ gr}}{25 \text{ ml}} \\ &= 1,045 \text{ gr/ml} \end{aligned}$$

- Sampel 11 (165 menit)

Berat Piknometer Kosong = 42,10 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,10 \text{ gr} - 15,895 \text{ gr}}{25 \text{ ml}} \\ &= 1,050 \text{ gr/ml} \end{aligned}$$

- Sampel 12 (180 menit)

Berat Pikno Kosong = 42,10

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,10 \text{ gr} - 15,895 \text{ gr}}{25 \text{ ml}} \\ &= 1,050 \text{ gr/ml} \end{aligned}$$

- Sampel 13 (195menit)

Berat Pikno Kosong = 42,10

Berat Piknometer Kosong = 15,85 gr

$$\begin{aligned} \text{Densitas} &= \frac{\text{Berat piknometer isi} - \text{Berat piknometer kosong}}{\text{Volume Piknometer}} \\ &= \frac{41,10 \text{ gr} - 15,895 \text{ gr}}{25 \text{ ml}} \\ &= 1,050 \text{ gr/ml} \end{aligned}$$

2. Perhitungan Viskositas

- Sebelum Evaporasi

$$t_0 = 1 \text{ detik}$$

$$d_0 = 1 \text{ gr/ml}$$

$$\mu_0 = 1 \text{ cp}$$

$$t_x = 3,10 \text{ detik}$$

$$\mu_x = \frac{3,10 \cdot 1,024}{1 \cdot 1} \cdot 1 \text{ cp}$$

$$\mu_x = 3,181 \text{ cp}$$

- Sampel 1 (15 Menit)

$$t_0 = 1 \text{ detik}$$

$$d_0 = 1 \text{ gr/ml}$$

$$\mu_0 = 1 \text{ cp}$$

$$t_x = 3,20 \text{ detik}$$

$$\mu_x = \frac{3,20 \cdot 1,026}{1 \cdot 1} \cdot 1 \text{ cp}$$

$$\mu_x = 3,290 \text{ cp}$$

- Sampel 2 (30 Menit)

$$t_0 = 1 \text{ detik}$$

$$d_0 = 1 \text{ gr/ml}$$

$$\mu_0 = 1 \text{ cp}$$

$$t_x = 3,40 \text{ detik}$$

$$\mu_x = \frac{3,40 \cdot 1,030}{1 \cdot 1} \cdot 1 \text{ cp}$$

$$\mu_x = 3,502 \text{ cp}$$

- Sampel 3 (45 Menit)

$$t_0 = 1 \text{ detik}$$

$$d_0 = 1 \text{ gr/ml}$$

$$\mu_0 = 1 \text{ cp}$$

$$t_x = 3,65 \text{ detik}$$

$$\mu_x = \frac{3,65 \cdot 1,033}{1 \cdot 1} \cdot 1 \text{ cp}$$

$$\mu_x = 3,770 \text{ cp}$$

- Sampel 4 (60 Menit)
 - to = 1 detik
 - do = 1 gr/ml
 - $\mu_o = 1$ cp
 - tx = 3,77 detik
 - $$\mu_x = \frac{3,77 \cdot 1,035}{1 \cdot 1} \cdot 1 \text{ cp}$$
 - $\mu_x = 3,902$ cp
- Sampel 5 (75 Menit)
 - to = 1 detik
 - do = 1 gr/ml
 - $\mu_o = 1$ cp
 - tx = 3,80 detik
 - $$\mu_x = \frac{3,80 \cdot 1,036}{1 \cdot 1} \cdot 1 \text{ cp}$$
 - $\mu_x = 3,937$ cp
- Sampel 6 (90 Menit)
 - to = 1 detik
 - do = 1 gr/ml
 - $\mu_o = 1$ cp
 - tx = 3,85 detik
 - $$\mu_x = \frac{3,85 \cdot 1,039}{1 \cdot 1} \cdot 1 \text{ cp}$$
 - $\mu_x = 4$ cp
- Sampel 7 (105 Menit)
 - to = 1 detik
 - do = 1 gr/ml
 - $\mu_o = 1$ cp
 - tx = 3,87 detik
 - $$\mu_x = \frac{3,87 \cdot 1,040}{1 \cdot 1} \cdot 1 \text{ cp}$$
 - $\mu_x = 4,025$ cp
- Sampel 8 (120 Menit)
 - to = 1 detik
 - do = 1 gr/ml

$$\mu_0 = 1 \text{ cp}$$

$$t_x = 3,89 \text{ detik}$$

$$\mu_x = \frac{3,89 \cdot 1,042}{1 \cdot 1} \cdot 1 \text{ cp}$$

$$\mu_x = 4,053 \text{ cp}$$

- Sampel 9 (135 Menit)

$$t_0 = 1 \text{ detik}$$

$$d_0 = 1 \text{ gr/ml}$$

$$\mu_0 = 1 \text{ cp}$$

$$t_x = 3,94 \text{ detik}$$

$$\mu_x = \frac{3,94 \cdot 1,044}{1 \cdot 1} \cdot 1 \text{ cp}$$

$$\mu_x = 4,13 \text{ cp}$$

- Sampel 10 (150 Menit)

$$t_0 = 1 \text{ detik}$$

$$d_0 = 1 \text{ gr/ml}$$

$$\mu_0 = 1 \text{ cp}$$

$$t_x = 4,98 \text{ detik}$$

$$\mu_x = \frac{3,98 \cdot 1,045}{1 \cdot 1} \cdot 1 \text{ cp}$$

$$\mu_x = 4,159 \text{ cp}$$

- Sampel 11 (165 Menit)

$$t_0 = 1 \text{ detik}$$

$$d_0 = 1 \text{ gr/ml}$$

$$\mu_0 = 1 \text{ cp}$$

$$t_x = 4,10 \text{ detik}$$

$$\mu_x = \frac{4,10 \cdot 1,050}{1 \cdot 1} \cdot 1 \text{ cp}$$

$$\mu_x = 4,305 \text{ cp}$$

- Sampel 12 (180 Menit)

$$t_0 = 1 \text{ detik}$$

$$d_0 = 1 \text{ gr/ml}$$

$$\mu_0 = 1 \text{ cp}$$

$$t_x = 4,10 \text{ detik}$$

$$\mu_x = \frac{4,10 \cdot 1,050}{1 \cdot 1} \cdot 1 \text{ cp}$$

$$\mu_x = 4,305 \text{ cp}$$

- Sampel 13 (195 Menit)

$$t_o = 1 \text{ detik}$$

$$d_o = 1 \text{ gr/ml}$$




$$\mu_o = 1 \text{ cp}$$

$$t_x = 4,10 \text{ detik}$$

$$\mu_x = \frac{4,10 \cdot 1,050}{1 \cdot 1} \cdot 1 \text{ cp}$$

$$\mu_x = 4,305 \text{ cp}$$

3. Foto Praktikum

Foto	Keterangan
	<i>Agitated Thin Film Evaporator</i>
	Sampel sari jahe waktu ke-0 sampai 60 menit.
	Sampel sari jahe waktu ke-75 menit sampai 120 menit.



Sampel sari jahe waktu ke-135 menit sampai 195 menit.
