

LAMPIRAN

Lampiran 1 Perhitungan Pembuatan Larutan Reagen

- a. Pembuatan Larutan HCl 10% (v/v)

$$\begin{aligned}V_1 \times C_1 &= V_2 \times C_2 \\250 \text{ ml} \times 10\% &= V_2 \times 37\% \\V_2 &= \frac{2500}{37} \\V_2 &= 67,5 \text{ ml}\end{aligned}$$

Keterangan:

V_1 = Volume larutan yang akan dibuat

C_1 = Konsentrasi HCl pekat

V_2 = Volume HCl pekat yang akan dipipet

C_2 = Konsentrasi larutan yang akan dibuat

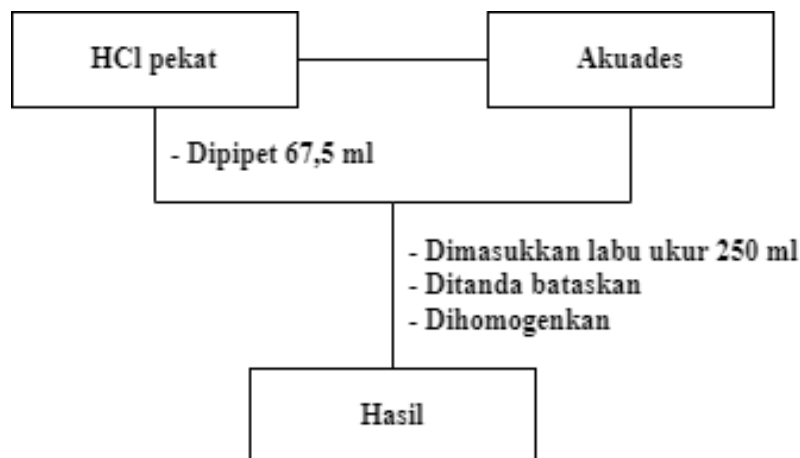
- b. Pembuatan Larutan BaCl₂ 10% (b/v)

$$\begin{aligned}\text{Massa BaCl}_2 &= \frac{\text{massa BaCl}_2}{\text{volume larutan}} \times \text{volume larutan yang dibuat} \\&= \frac{10 \text{ gram}}{100 \text{ ml}} \times 250 \text{ ml} \\&= 25 \text{ gram}\end{aligned}$$

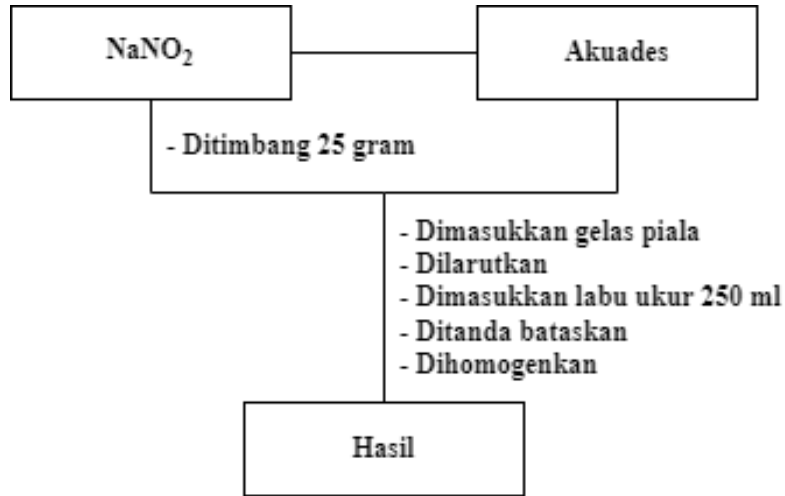
- c. Pembuatan Larutan NaNO₂ 10% (b/v)

$$\begin{aligned}\text{Massa BaCl}_2 &= \frac{\text{massa NaNO}_2}{\text{volume larutan}} \times \text{volume larutan yang dibuat} \\&= \frac{10 \text{ gram}}{100 \text{ ml}} \times 250 \text{ ml} \\&= 25 \text{ gram}\end{aligned}$$

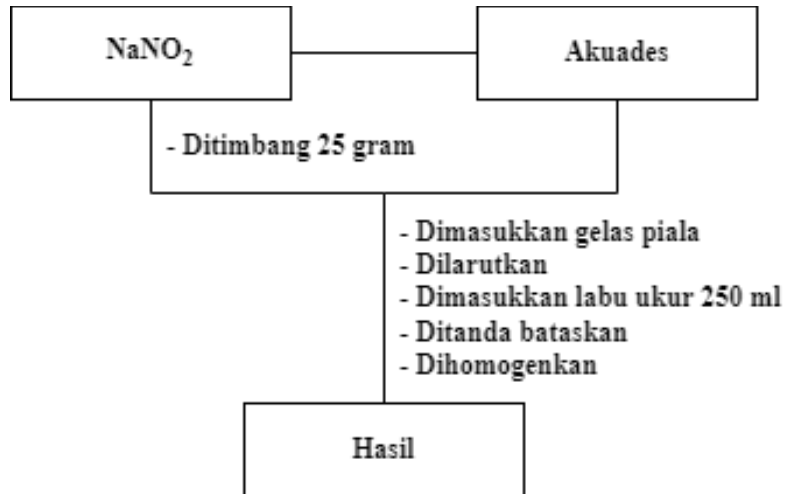
Lampiran 2 Prosedur Pembuatan Larutan HCl 10% (v/v)



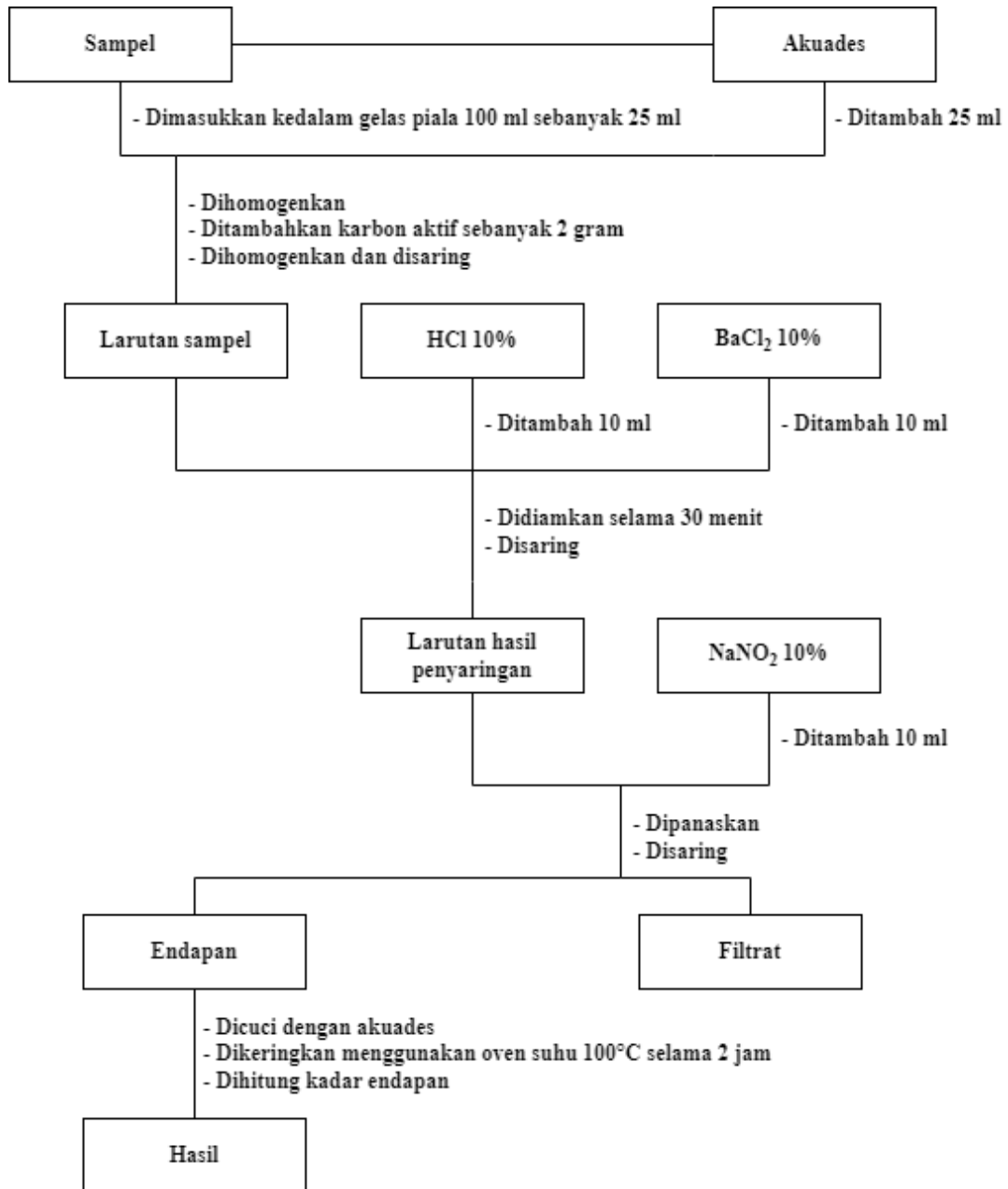
Lampiran 3 Prosedur Pembuatan Larutan BaCl₂ 10% (b/v)



Lampiran 4 Prosedur Pembuatan Larutan NaNO₂ 10% (b/v)



Lampiran 5 Prosedur Penentuan Kadar Natrium Siklamat



Lampiran 6 Perhitungan Massa Sampel

a. Massa Jenis

Rumus:

$$\text{Massa jenis} = \frac{\text{massa sampel (g)}}{\text{volume piknometer (ml)}}$$

- Sampel A $= \frac{24,6141 \text{ g}}{25 \text{ ml}}$
 $= 0,9846 \text{ g/ml}$

- Sampel B $= \frac{26,8753 \text{ g}}{25 \text{ ml}}$

- Sampel A = 1,0750 g/ml
- Sampel C = $\frac{24,4151 \text{ g}}{25 \text{ ml}}$
= 0,9766 g/ml
- Sampel D = $\frac{27,227 \text{ g}}{25 \text{ ml}}$
= 1,0891 g/ml
- Sampel E = $\frac{25,0614 \text{ g}}{25 \text{ ml}}$
= 1,0025 g/ml
- Sampel F = $\frac{27,5075 \text{ g}}{25 \text{ ml}}$
= 1,1003 g/ml

b. Massa Sampel

Rumus:

$$m = \rho \times v$$

Keterangan:

m = massa (g)

ρ = massa jenis (g/ml)

v = volume sampel (ml)

- Sampel A = 0,9846 g/ml \times 25 ml
= 24,6141 gram
- Sampel B = 1,0750 g/ml \times 25 ml
= 26,8753 gram
- Sampel C = 0,9766 g/ml \times 25 ml
= 24,4151 gram
- Sampel D = 1,0891 g/ml \times 25 ml
= 27,227 gram
- Sampel E = 1,0025 g/ml \times 25 ml
= 25,0614 gram
- Sampel F = 1,1003 g/ml \times 25 ml
= 27,5075 gram

Lampiran 7 Perhitungan Kadar Siklamat

a. Kadar sebagai Natrium Siklamat

Rumus:

$$\frac{(b - a)}{\text{massa sampel (g)}} \times 0,862$$

Keterangan:

a = Massa kertas saring (gram)

b = Massa kertas saring dan endapan (gram)

$$\bullet \text{ A1} = \frac{0,7051 \text{ g} - 0,6577 \text{ g}}{24,6141 \text{ g}} \times 0,862$$

$$= \frac{47,4 \text{ mg}}{0,0246141 \text{ kg}} \times 0,862$$

$$= 1659,98 \text{ mg/kg}$$

$$\bullet \text{ A2} = \frac{0,7053 \text{ g} - 0,6582 \text{ g}}{24,6141 \text{ g}} \times 0,862$$

$$= \frac{47,1 \text{ mg}}{0,0246141 \text{ kg}} \times 0,862$$

$$= 1649,47 \text{ mg/kg}$$

$$\bullet \text{ A3} = \frac{0,6969 \text{ g} - 0,6570 \text{ g}}{24,6141 \text{ g}} \times 0,862$$

$$= \frac{39,9 \text{ mg}}{0,0246141 \text{ kg}} \times 0,862$$

$$= 1397,32 \text{ mg/kg}$$

$$\bullet \text{ B1} = \frac{0,6739 \text{ g} - 0,6604 \text{ g}}{26,8753 \text{ g}} \times 0,862$$

$$= \frac{13,5 \text{ mg}}{0,0268753 \text{ kg}} \times 0,862$$

$$= 433,00 \text{ mg/kg}$$

$$\bullet \text{ B2} = \frac{0,6749 \text{ g} - 0,6574 \text{ g}}{26,8753 \text{ g}} \times 0,862$$

$$= \frac{17,5 \text{ mg}}{0,0268753 \text{ kg}} \times 0,862$$

$$= 561,30 \text{ mg/kg}$$

$$\bullet \text{ B3} = \frac{0,6798 \text{ g} - 0,6603 \text{ g}}{26,8753 \text{ g}} \times 0,862$$

$$= \frac{19,5 \text{ mg}}{0,0268753 \text{ kg}} \times 0,862$$

$$= 625,44 \text{ mg/kg}$$

$$\bullet \text{ C1} = \frac{0,6752 \text{ g} - 0,6603 \text{ g}}{24,4151 \text{ g}} \times 0,862$$

$$\begin{aligned}
&= \frac{14,9 \text{ mg}}{0,0244151 \text{ kg}} \times 0,862 \\
&= 526,06 \text{ mg/kg} \\
\bullet \text{ C2} &= \frac{0,6743 \text{ g} - 0,6610 \text{ g}}{24,4151 \text{ g}} \times 0,862 \\
&= \frac{13,3 \text{ mg}}{0,0244151 \text{ kg}} \times 0,862 \\
&= 469,57 \text{ mg/kg} \\
\bullet \text{ C3} &= \frac{0,6758 \text{ g} - 0,6607 \text{ g}}{24,4151 \text{ g}} \times 0,862 \\
&= \frac{15,1 \text{ mg}}{0,0244151 \text{ kg}} \times 0,862 \\
&= 533,12 \text{ mg/kg} \\
\bullet \text{ D1} &= \frac{0,7028 \text{ g} - 0,6620 \text{ g}}{27,227 \text{ g}} \times 0,862 \\
&= \frac{40,8 \text{ mg}}{0,027227 \text{ kg}} \times 0,862 \\
&= 1291,72 \text{ mg/kg} \\
\bullet \text{ D2} &= \frac{0,7071 \text{ g} - 0,6600 \text{ g}}{27,227 \text{ g}} \times 0,862 \\
&= \frac{47,1 \text{ mg}}{0,027227 \text{ kg}} \times 0,862 \\
&= 1491,17 \text{ mg/kg} \\
\bullet \text{ D3} &= \frac{0,7139 \text{ g} - 0,6553 \text{ g}}{27,227 \text{ g}} \times 0,862 \\
&= \frac{58,6 \text{ mg}}{0,027227 \text{ kg}} \times 0,862 \\
&= 1855,26 \text{ mg/kg} \\
\bullet \text{ E1} &= \frac{0,6689 \text{ g} - 0,6653 \text{ g}}{25,0614 \text{ g}} \times 0,862 \\
&= \frac{3,6 \text{ mg}}{0,0250614 \text{ kg}} \times 0,862 \\
&= 123,82 \text{ mg/kg} \\
\bullet \text{ E2} &= \frac{0,6699 \text{ g} - 0,6677 \text{ g}}{25,0614 \text{ g}} \times 0,862 \\
&= \frac{2,2 \text{ mg}}{0,0250614 \text{ kg}} \times 0,862 \\
&= 75,67 \text{ mg/kg} \\
\bullet \text{ E3} &= \frac{0,6761 \text{ g} - 0,6663 \text{ g}}{25,0614 \text{ g}} \times 0,862 \\
&= \frac{9,8 \text{ mg}}{0,0250614 \text{ kg}} \times 0,862
\end{aligned}$$

$$\begin{aligned}
&= 337,08 \text{ mg/kg} \\
\bullet \text{ F1} &= \frac{0,7041 \text{ g} - 0,6657 \text{ g}}{27,5075 \text{ g}} \times 0,862 \\
&= \frac{38,4 \text{ mg}}{0,0275075 \text{ kg}} \times 0,862 \\
&= 1203,34 \text{ mg/kg} \\
\bullet \text{ F2} &= \frac{0,6922 \text{ g} - 0,6720 \text{ g}}{27,5075 \text{ g}} \times 0,862 \\
&= \frac{20,2 \text{ mg}}{0,0275075 \text{ kg}} \times 0,862 \\
&= 633,01 \text{ mg/kg} \\
\bullet \text{ F3} &= \frac{0,6929 \text{ g} - 0,6687 \text{ g}}{27,5075 \text{ g}} \times 0,862 \\
&= \frac{24,2 \text{ mg}}{0,0275075 \text{ kg}} \times 0,862 \\
&= 758,35 \text{ mg/kg}
\end{aligned}$$

b. Kadar Asam Siklamat
















Rumus:

$$\frac{BM \text{ as} - \text{siklamat}}{BM \text{ na} - \text{siklamat}} \times \text{kadar sebagai na} - \text{siklamat}$$

$$\begin{aligned}
\bullet \text{ A1} &= \frac{179,24}{201,22} \times 1659,98 \text{ mg/kg} \\
&= 1478,65 \text{ mg/kg} \\
\bullet \text{ A2} &= \frac{179,24}{201,22} \times 1649,47 \text{ mg/kg} \\
&= 1469,29 \text{ mg/kg} \\
\bullet \text{ A3} &= \frac{179,24}{201,22} \times 1397,32 \text{ mg/kg} \\
&= 1244,69 \text{ mg/kg} \\
\bullet \text{ B1} &= \frac{179,24}{201,22} \times 433,00 \text{ mg/kg} \\
&= 385,70 \text{ mg/kg} \\
\bullet \text{ B2} &= \frac{179,24}{201,22} \times 561,30 \text{ mg/kg} \\
&= 499,98 \text{ mg/kg} \\
\bullet \text{ B3} &= \frac{179,24}{201,22} \times 625,44 \text{ mg/kg} \\
&= 557,12 \text{ mg/kg} \\
\bullet \text{ C1} &= \frac{179,24}{201,22} \times 526,06 \text{ mg/kg} \\
&= 468,60 \text{ mg/kg}
\end{aligned}$$

- C2 = $\frac{179,24}{201,22} \times 469,57 \text{ mg/kg}$
= 418,28 mg/kg
- C3 = $\frac{179,24}{201,22} \times 533,12 \text{ mg/kg}$
= 474,89 mg/kg
- D1 = $\frac{179,24}{201,22} \times 1291,72 \text{ mg/kg}$
= 1150,62 mg/kg
- D2 = $\frac{179,24}{201,22} \times 1491,17 \text{ mg/kg}$
= 1328,29 mg/kg
- D3 = $\frac{179,24}{201,22} \times 1855,26 \text{ mg/kg}$
= 1652,60 mg/kg
- E1 = $\frac{179,24}{201,22} \times 123,82 \text{ mg/kg}$
= 110,30 mg/kg
- E2 = $\frac{179,24}{201,22} \times 75,67 \text{ mg/kg}$
= 67,40 mg/kg
- E3 = $\frac{179,24}{201,22} \times 337,08 \text{ mg/kg}$
= 300,26 mg/kg
- F1 = $\frac{179,24}{201,22} \times 1203,34 \text{ mg/kg}$
= 1071,89 mg/kg
- F2 = $\frac{179,24}{201,22} \times 633,01 \text{ mg/kg}$
= 563,86 mg/kg
- F3 = $\frac{179,24}{201,22} \times 758,35 \text{ mg/kg}$
= 675,52 mg/kg

Lampiran 8 Dokumentasi

		
Pengenceran sampel	Penambahan karbon aktif	Penyaringan sampel
		
Penambahan HCl 10% dan BaCl ² 10%	Penambahan NaNO ² 10%	Proses Pemanasan
		
Hasil endapan sampel A	Hasil endapan sampel B	Hasil endapan sampel C
		
Hasil endapan sampel D	Hasil endapan sampel E	Hasil endapan sampel F
		
Kertas saring A1	Kertas saring A2	Kertas saring A3

