

## LAMPIRAN

### HASIL PENGAMATAN

#### Hasil Pengamatan Sampel Resin Anion Kation Kombinasi Karbon Aktif tanpa Zeolit

t (menit)	V1 (ml)	Volume buffer (tetes)	Volume EBT (tetes)	pH		V2 (ml)	Kesadahan (ppm)
				Awal	Sesudah		
0	10	5	1	6	10	1,2	1,2
15	10	5	1	5	10	0,4	0,4
30	10	5	1	5	10	0,3	0,3
45	10	5	1	5	10	0,3	0,3
60	10	5	1	5	10	0,2	0,2
75	10	5	1	5	10	0,2	0,2

#### Hasil Pengamatan Sampel Resin Anion Kation Kombinasi Karbon Aktif dengan Zeolit

t (menit)	V1 (ml)	Volume buffer (tetes)	Volume EBT (tetes)	pH		V2 (ml)	Kesadahan (ppm)
				Awal	Sesudah		
0	10	5	1	6	10	1,2	1,2
15	10	5	1	5	10	0,3	0,3
30	10	5	1	5	10	0,2	0,2
45	10	5	1	5	10	0,2	0,2
60	10	5	1	5	10	0,1	0,1
75	10	5	1	5	10	0,1	0,1

### PERHITUNGAN

#### Perhitungan EDTA 0,01 M

$$M = \frac{\text{gr}}{\text{Mr}} \times \frac{1000}{v}$$

$$0,01 = \frac{x}{242} \times \frac{1000}{100\text{ml}}$$

$$x = 0,242 \text{ gr}$$

#### Perhitungan NaOH 0,1 N

$$N = \frac{\text{gr}}{\text{Mr}} \times \frac{1000}{v} \times \text{ekuivalen}$$

$$0,1 = \frac{x}{40} \times \frac{1000}{100} \times 1$$

$$x = 0,4 \text{ gr}$$

**Perhitungan Kesadahan Sampel Resin Anion Kation Kombinasi Karbon****Aktif Tanpa Zeolit**

$$\text{Menit ke-0} = \frac{0,12 \times 0,01 \times 1000\text{ml}}{10\text{ml}} = 1,2 \text{ ppm}$$

$$\text{Menit ke-15} = \frac{0,4 \times 0,01 \times 1000\text{ml}}{10\text{ml}} = 0,4 \text{ ppm}$$

$$\text{Menit ke-30} = \frac{0,03 \times 0,01 \times 1000\text{ml}}{10\text{ml}} = 0,3 \text{ ppm}$$

$$\text{Menit ke-45} = \frac{0,03 \times 0,01 \times 1000\text{ml}}{10\text{ml}} = 0,3 \text{ ppm}$$

$$\text{Menit ke-60} = \frac{0,02 \times 0,01 \times 1000\text{ml}}{10\text{ml}} = 0,2 \text{ ppm}$$

$$\text{Menit ke-75} = \frac{0,02 \times 0,01 \times 1000\text{ml}}{10\text{ml}} = 0,2 \text{ ppm}$$

**Perhitungan Kesadahan Sampel Resin Anion Kation Kombinasi Karbon****Aktif dengan Zeolit**

$$\text{Menit ke-0} = \frac{0,12 \times 0,01 \times 1000\text{ml}}{10\text{ml}} = 1,2 \text{ ppm}$$

$$\text{Menit ke-15} = \frac{0,03 \times 0,01 \times 1000\text{ml}}{10\text{ml}} = 0,3 \text{ ppm}$$

$$\text{Menit ke-30} = \frac{0,02 \times 0,01 \times 1000\text{ml}}{10\text{ml}} = 0,2 \text{ ppm}$$

$$\text{Menit ke-45} = \frac{0,02 \times 0,01 \times 1000\text{ml}}{10\text{ml}} = 0,2 \text{ ppm}$$

$$\text{Menit ke-60} = \frac{0,01 \times 0,01 \times 1000\text{ml}}{10\text{ml}} = 0,1 \text{ ppm}$$

$$\text{Menit ke-75} = \frac{0,01 \times 0,01 \times 1000\text{ml}}{10\text{ml}} = 0,1 \text{ ppm}$$

## LAMPIRAN FOTO



Ion Exchanger


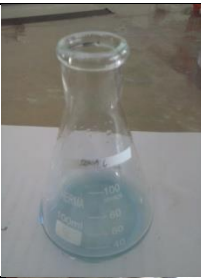

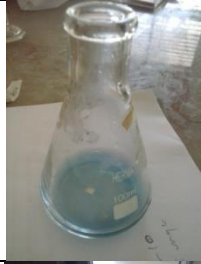

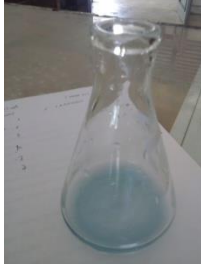








PH 5 : 10









Buret dan klem statif







## Titrasi Kesadahan Kombinasi Karbon Aktif Tanpa Zeolit

Menit	Sebelum titrasi	Sesudah Titrasi
0		
15		
30		
45		

60		
75		

### Titration Kesadahan Kombinasi Karbon Aktif dengan Zeolit

Menit ke	Sebelum titrasi	Sesudah Titrasi
0		
15		
30		

45	 A glass Erlenmeyer flask containing a purple liquid, sitting on a white surface with a notebook.	 A glass Erlenmeyer flask containing a light blue liquid, sitting on a white surface with a notebook.
60	 A glass Erlenmeyer flask containing a purple liquid, sitting on a white surface with a notebook.	 A glass Erlenmeyer flask containing a light blue liquid, sitting on a white surface with a notebook.
75	 A glass Erlenmeyer flask containing a pink liquid, sitting on a white surface with a notebook.	 A glass Erlenmeyer flask containing a light blue liquid, sitting on a white surface with a notebook.