

**LAMPIRAN A**  
**HASIL UJI MUTU FISIK MASSA TABLET**

| Mutu Fisik yang diuji     | Replikasi | Formula Tablet Ibuprofen |       |       |       | Persyaratan                                          |
|---------------------------|-----------|--------------------------|-------|-------|-------|------------------------------------------------------|
|                           |           | FI                       | FII   | FIII  | FIV   |                                                      |
| Kelembaban (%)            | I         | 2,85                     | 3,80  | 3,37  | 3,96  | 3-5%<br>(Voigt,1995)                                 |
|                           | II        | 3,47                     | 3,27  | 3,48  | 3,67  |                                                      |
|                           | III       | 3,87                     | 3,47  | 3,87  | 3,02  |                                                      |
|                           | Rata-rata | 3,40                     | 3,51  | 3,57  | 3,55  |                                                      |
|                           | SD        | 0,51                     | 0,27  | 0,26  | 0,48  |                                                      |
| Sudut Diam (derajat)      | I         | 31,81                    | 31,07 | 30,10 | 30,53 | 30-40<br>Cukup baik<br>(Wells, 1988)                 |
|                           | II        | 30,08                    | 31,72 | 30,91 | 31,96 |                                                      |
|                           | III       | 29,84                    | 29,91 | 29,47 | 30,46 |                                                      |
|                           | Rata-rata | 30,58                    | 30,90 | 30,16 | 30,98 |                                                      |
|                           | SD        | 1,07                     | 0,92  | 0,72  | 0,85  |                                                      |
| Hausner Ratio             | I         | 1,23                     | 1,22  | 1,13  | 1,19  | < 1,25<br>(Wells, 1988)                              |
|                           | II        | 1,21                     | 1,26  | 1,18  | 1,21  |                                                      |
|                           | III       | 1,27                     | 1,24  | 1,16  | 1,16  |                                                      |
|                           | Rata-rata | 1,24                     | 1,24  | 1,16  | 1,19  |                                                      |
|                           | SD        | 0,03                     | 0,02  | 0,03  | 0,03  |                                                      |
| Index Kompresibilitas (%) | I         | 18,37                    | 18,18 | 16,50 | 16,56 | 12-16% Baik<br>18-21%<br>Cukup baik<br>(Wells, 1988) |
|                           | II        | 17,65                    | 19,83 | 15,65 | 17,24 |                                                      |
|                           | III       | 18,53                    | 19,15 | 14,96 | 15,78 |                                                      |
|                           | Rata-rata | 18,18                    | 19,05 | 15,70 | 16,53 |                                                      |
|                           | SD        | 0,97                     | 0,83  | 0,77  | 0,73  |                                                      |

**LAMPIRAN B**  
**HASIL UJI KESERAGAMAN BOBOT TABLET**

| Hasil Uji Keseragaman Bobot Tablet Formula I |                     |                     |                     |
|----------------------------------------------|---------------------|---------------------|---------------------|
| No.                                          | Replikasi I         | Replikasi II        | Replikasi III       |
|                                              | Bobot Tablet<br>(g) | Bobot Tablet<br>(g) | Bobot Tablet<br>(g) |
| 1.                                           | 0,7968              | 0,8060              | 0,7986              |
| 2.                                           | 0,8050              | 0,8065              | 0,7949              |
| 3.                                           | 0,7928              | 0,8013              | 0,8045              |
| 4.                                           | 0,8050              | 0,7959              | 0,7927              |
| 5.                                           | 0,8022              | 0,8008              | 0,7991              |
| 6.                                           | 0,8042              | 0,8055              | 0,8033              |
| 7.                                           | 0,7983              | 0,8050              | 0,8030              |
| 8.                                           | 0,7981              | 0,8059              | 0,7951              |
| 9.                                           | 0,7940              | 0,7950              | 0,7969              |
| 10.                                          | 0,7830              | 0,8078              | 0,7999              |
| 11.                                          | 0,8000              | 0,8030              | 0,7971              |
| 12.                                          | 0,7869              | 0,8048              | 0,8080              |
| 13.                                          | 0,8003              | 0,7976              | 0,7952              |
| 14.                                          | 0,7999              | 0,7979              | 0,7968              |
| 15.                                          | 0,7982              | 0,8068              | 0,8006              |
| 16.                                          | 0,7964              | 0,7960              | 0,7920              |
| 17.                                          | 0,8005              | 0,8051              | 0,7948              |
| 18.                                          | 0,8011              | 0,8001              | 0,8045              |
| 19.                                          | 0,8008              | 0,8030              | 0,8017              |
| 20.                                          | 0,7934              | 0,7995              | 0,7998              |
| $\bar{X}$                                    | 0,7978              | 0,8022              | 0,7989              |
| SD                                           | 0,01                | 0,00                | 0,00                |
| SDrel(%)                                     | 0,71                | 0,51                | 0,54                |

Hasil Uji Keseragaman Bobot Tablet Formula II

| No.       | Replikasi I         | Replikasi II        | Replikasi III       |
|-----------|---------------------|---------------------|---------------------|
|           | Bobot Tablet<br>(g) | Bobot Tablet<br>(g) | Bobot Tablet<br>(g) |
| 1.        | 0,7809              | 0,7848              | 0,7818              |
| 2.        | 0,7875              | 0,7919              | 0,7802              |
| 3.        | 0,7802              | 0,7904              | 0,7771              |
| 4.        | 0,7830              | 0,7847              | 0,7855              |
| 5.        | 0,7867              | 0,7875              | 0,7766              |
| 6.        | 0,7784              | 0,7964              | 0,7882              |
| 7.        | 0,7783              | 0,7875              | 0,7860              |
| 8.        | 0,7827              | 0,7928              | 0,7834              |
| 9.        | 0,7819              | 0,7907              | 0,7845              |
| 10.       | 0,7880              | 0,7955              | 0,7849              |
| 11.       | 0,7751              | 0,7912              | 0,7780              |
| 12.       | 0,7738              | 0,7904              | 0,7841              |
| 13.       | 0,7753              | 0,7938              | 0,7804              |
| 14.       | 0,7764              | 0,7963              | 0,7876              |
| 15.       | 0,7746              | 0,7985              | 0,7881              |
| 16.       | 0,7779              | 0,7889              | 0,7937              |
| 17.       | 0,7814              | 0,7964              | 0,7986              |
| 18.       | 0,7551              | 0,7920              | 0,7850              |
| 19.       | 0,7812              | 0,7954              | 0,7831              |
| 20.       | 0,7820              | 0,7964              | 0,7853              |
| $\bar{X}$ | 0,7790              | 0,7921              | 0,7846              |
| SD        | 0,01                | 0,00                | 0,01                |
| SDrel(%)  | 0,90                | 0,51                | 0,67                |

Hasil Uji Keseragaman Bobot Tablet Formula III

| No.       | Replikasi I         | Replikasi II        | Replikasi III       |
|-----------|---------------------|---------------------|---------------------|
|           | Bobot Tablet<br>(g) | Bobot Tablet<br>(g) | Bobot Tablet<br>(g) |
| 1.        | 0,7900              | 0,8054              | 0,8197              |
| 2.        | 0,8000              | 0,8065              | 0,8093              |
| 3.        | 0,7952              | 0,8067              | 0,8113              |
| 4.        | 0,7910              | 0,8096              | 0,8145              |
| 5.        | 0,7938              | 0,8045              | 0,8132              |
| 6.        | 0,7989              | 0,8067              | 0,8130              |
| 7.        | 0,7990              | 0,8044              | 0,8161              |
| 8.        | 0,7910              | 0,8047              | 0,8117              |
| 9.        | 0,7989              | 0,8049              | 0,7855              |
| 10.       | 0,7980              | 0,8005              | 0,8060              |
| 11.       | 0,7967              | 0,8048              | 0,8090              |
| 12.       | 0,7990              | 0,8025              | 0,8096              |
| 13.       | 0,8028              | 0,7984              | 0,8101              |
| 14.       | 0,7974              | 0,8049              | 0,8108              |
| 15.       | 0,7994              | 0,8046              | 0,8112              |
| 16.       | 0,7979              | 0,8003              | 0,8094              |
| 17.       | 0,7994              | 0,8030              | 0,8128              |
| 18.       | 0,8004              | 0,8059              | 0,8079              |
| 19.       | 0,7971              | 0,8014              | 0,8076              |
| 20.       | 0,7985              | 0,8087              | 0,8080              |
| $\bar{X}$ | 0,7972              | 0,8044              | 0,8098              |
| SD        | 0,00                | 0,00                | 0,01                |
| SDrel(%)  | 0,43                | 0,35                | 0,81                |

Hasil Uji Keseragaman Bobot Tablet Formula IV

| No.       | Replikasi I         | Replikasi II        | Replikasi III       |
|-----------|---------------------|---------------------|---------------------|
|           | Bobot Tablet<br>(g) | Bobot Tablet<br>(g) | Bobot Tablet<br>(g) |
| 1.        | 0,8088              | 0,8169              | 0,8033              |
| 2.        | 0,8030              | 0,8022              | 0,8080              |
| 3.        | 0,8013              | 0,7861              | 0,8035              |
| 4.        | 0,8010              | 0,8009              | 0,8096              |
| 5.        | 0,8023              | 0,7899              | 0,8022              |
| 6.        | 0,8016              | 0,7893              | 0,8028              |
| 7.        | 0,8073              | 0,7946              | 0,7989              |
| 8.        | 0,8048              | 0,8161              | 0,8036              |
| 9.        | 0,8035              | 0,7925              | 0,8015              |
| 10.       | 0,8036              | 0,7863              | 0,8086              |
| 11.       | 0,8051              | 0,7999              | 0,8061              |
| 12.       | 0,7970              | 0,7894              | 0,7954              |
| 13.       | 0,8070              | 0,7892              | 0,8063              |
| 14.       | 0,8004              | 0,7868              | 0,7980              |
| 15.       | 0,8040              | 0,7937              | 0,8061              |
| 16.       | 0,7963              | 0,7888              | 0,8090              |
| 17.       | 0,8062              | 0,7934              | 0,8076              |
| 18.       | 0,8043              | 0,8132              | 0,8093              |
| 19.       | 0,8098              | 0,7935              | 0,8063              |
| 20.       | 0,8028              | 0,7879              | 0,8003              |
| $\bar{X}$ | 0,8035              | 0,7955              | 0,8043              |
| SD        | 0,00                | 0,01                | 0,00                |
| SDrel(%)  | 0,43                | 1,23                | 0,50                |

**LAMPIRAN C**  
**HASIL UJI KEKERASAN TABLET IBUPROFEN**

Replikasi I

| No.            | Kekerasan Tablet Ibuprofen (Kp) |              |              |             |
|----------------|---------------------------------|--------------|--------------|-------------|
|                | Formula I                       | Formula II   | Formula III  | Formula IV  |
| 1.             | 14,8                            | 12,8         | 13,1         | 8,4         |
| 2.             | 15,6                            | 12,8         | 12,1         | 8,7         |
| 3.             | 15,8                            | 12,7         | 13,1         | 8,6         |
| 4.             | 14,8                            | 12,5         | 11,9         | 8,5         |
| 5.             | 15,9                            | 12,1         | 12,1         | 9,0         |
| 6.             | 16,3                            | 12,8         | 12,3         | 8,9         |
| 7.             | 15,3                            | 13,5         | 12,7         | 9,2         |
| 8.             | 14,8                            | 12,8         | 12,5         | 9,8         |
| 9.             | 14,7                            | 13,4         | 11,9         | 10,3        |
| 10.            | 14,4                            | 13,0         | 12,0         | 9,4         |
| Rata-rata ± SD | 15,24 ± 0,63                    | 12,84 ± 0,40 | 12,37 ± 0,46 | 9,08 ± 0,61 |

Replikasi II

| No.            | Kekerasan Tablet Ibuprofen (Kp) |              |              |              |
|----------------|---------------------------------|--------------|--------------|--------------|
|                | Formula I                       | Formula II   | Formula III  | Formula IV   |
| 1.             | 13,0                            | 13,6         | 13,3         | 10,7         |
| 2.             | 13,5                            | 13,5         | 12,8         | 9,5          |
| 3.             | 13,9                            | 13,8         | 13,9         | 10,7         |
| 4.             | 13,7                            | 13,3         | 10,7         | 11,7         |
| 5.             | 13,5                            | 13,2         | 13,9         | 10,6         |
| 6.             | 14,6                            | 13,3         | 11,7         | 11,1         |
| 7.             | 14,7                            | 12,0         | 12,5         | 11,0         |
| 8.             | 13,6                            | 12,7         | 12,9         | 11,8         |
| 9.             | 13,4                            | 13,9         | 11,0         | 10,6         |
| 10.            | 13,8                            | 12,8         | 11,0         | 9,2          |
| Rata-rata ± SD | 13,77 ± 0,53                    | 13,21 ± 0,57 | 12,37 ± 1,20 | 10,69 ± 0,83 |

Replikasi III

| No.            | Kekerasan Tablet Ibuprofen (Kp) |              |              |              |
|----------------|---------------------------------|--------------|--------------|--------------|
|                | Formula I                       | Formula II   | Formula III  | Formula IV   |
| 1.             | 11,4                            | 11,2         | 12,1         | 10,2         |
| 2.             | 11,9                            | 11,3         | 11,5         | 10,2         |
| 3.             | 11,3                            | 11,2         | 11,7         | 8,9          |
| 4.             | 10,2                            | 11,7         | 13,9         | 8,3          |
| 5.             | 12,2                            | 11,9         | 11,3         | 10,6         |
| 6.             | 12,0                            | 11,4         | 13,0         | 11,3         |
| 7.             | 13,7                            | 12,5         | 11,8         | 10,1         |
| 8.             | 11,9                            | 13,2         | 12,0         | 10,4         |
| 9.             | 14,2                            | 11,4         | 11,1         | 10,8         |
| 10.            | 11,2                            | 12,8         | 14,1         | 10,8         |
| Rata-rata ± SD | 12 ± 1,18                       | 11,86 ± 0,72 | 12,25 ± 1,06 | 10,16 ± 0,91 |

**LAMPIRAN D**  
**HASIL UJI KERAPUHAN TABLET IBUPROFEN**

| Formula | Replikasi | Berat awal<br>(g) | Berat<br>akhir<br>(g) | Kerapuhan<br>(%) | Rata-rata ±<br>SD |
|---------|-----------|-------------------|-----------------------|------------------|-------------------|
| I       | I         | 15,9159           | 15,8693               | 0,29             | 0,34 ± 0,10       |
|         | II        | 15,9548           | 15,9148               | 0,27             |                   |
|         | III       | 15,8745           | 15,8009               | 0,46             |                   |
| II      | I         | 15,3762           | 15,3132               | 0,41             | 0,41 ± 0,02       |
|         | II        | 15,3176           | 15,2522               | 0,43             |                   |
|         | III       | 14,9796           | 14,9197               | 0,40             |                   |
| III     | I         | 15,9251           | 15,6463               | 1,75             | 1,49 ± 0,24       |
|         | II        | 15,8885           | 15,6865               | 1,27             |                   |
|         | III       | 16,0488           | 15,8149               | 1,46             |                   |
| IV      | I         | 15,9649           | 15,6697               | 1,85             | 1,56 ± 0,32       |
|         | II        | 15,2343           | 15,0495               | 1,21             |                   |
|         | III       | 15,8758           | 15,6188               | 1,62             |                   |

**LAMPIRAN E**  
**HASIL UJI WAKTU HANCUR TABLET IBUPROFEN**

| Replikasi      | Waktu Hancur (detik) |            |             |              |
|----------------|----------------------|------------|-------------|--------------|
|                | Formula I            | Formula II | Formula III | Formula IV   |
| I              | 12                   | 12         | 22          | 21           |
| II             | 10                   | 9          | 25          | 18           |
| III            | 7                    | 12         | 19          | 20           |
| Rata-rata ± SD | 9,67 ± 2,52          | 11 ± 1,73  | 22 ± 3,0    | 19,67 ± 1,53 |

**LAMPIRAN F**  
**AKURASI DAN PRESISI DALAM NaOH 0,1N**

Formula I

| Rep. | Kons. | Abs.  | Konsentrasi<br>(µg/ml) | W Ibu<br>(g) | Teoritis<br>(µg/ml) | Perolehan<br>Kembali<br>(%) | KV<br>(%) |
|------|-------|-------|------------------------|--------------|---------------------|-----------------------------|-----------|
| I    | 80%   | 0,666 | 397,24                 | 0,3200       | 400,00              | 99,31                       | 1,23      |
|      | 80%   | 0,678 | 404,42                 | 0,3202       | 400,25              | 101,04                      |           |
|      | 80%   | 0,662 | 394,85                 | 0,3201       | 400,13              | 98,68                       |           |
|      | 100%  | 0,822 | 490,62                 | 0,4000       | 500,00              | 98,12                       |           |
| II   | 100%  | 0,829 | 494,81                 | 0,4000       | 500,00              | 98,96                       | 0,56      |
|      | 100%  | 0,831 | 496,01                 | 0,4001       | 500,13              | 99,18                       |           |
|      | 120%  | 0,999 | 596,58                 | 0,4799       | 599,88              | 99,45                       |           |
| III  | 120%  | 1,008 | 601,97                 | 0,4801       | 600,13              | 100,31                      | 0,51      |
|      | 120%  | 0,999 | 596,58                 | 0,4801       | 600,13              | 99,41                       |           |
|      |       |       |                        |              |                     | $\bar{x} = 99,38$           | 0,77      |

Formula II

| Rep. | Kons. | Abs.  | Konsentrasi<br>(µg/ml) | W Ibu<br>(g) | Teoritis<br>(µg/ml) | Perolehan<br>Kembali<br>(%) | KV<br>(%) |
|------|-------|-------|------------------------|--------------|---------------------|-----------------------------|-----------|
| I    | 80%   | 0,665 | 396,64                 | 0,3202       | 400,25              | 99,10                       | 0,48      |
|      | 80%   | 0,668 | 398,44                 | 0,3203       | 400,38              | 99,52                       |           |
|      | 80%   | 0,672 | 400,83                 | 0,3205       | 400,63              | 100,05                      |           |
|      | 100%  | 0,851 | 507,98                 | 0,4003       | 500,38              | 101,52                      |           |
| II   | 100%  | 0,832 | 496,61                 | 0,4003       | 500,38              | 99,25                       | 1,19      |
|      | 100%  | 0,846 | 504,99                 | 0,3999       | 499,88              | 101,02                      |           |
|      | 120%  | 0,997 | 595,38                 | 0,4799       | 599,88              | 99,25                       |           |
| III  | 120%  | 1,002 | 598,37                 | 0,4850       | 606,25              | 98,70                       | 0,56      |
|      | 120%  | 1,003 | 598,97                 | 0,4801       | 600,13              | 99,81                       |           |
|      |       |       |                        |              |                     | $\bar{x} = 99,80$           | 0,74      |

Formula III

| Rep. | Kons. | Abs.  | Konsentrasi<br>(µg/ml) | W Ibu<br>(g) | Teoritis<br>(µg/ml) | Perolehan<br>Kembali<br>(%) | KV<br>(%) |
|------|-------|-------|------------------------|--------------|---------------------|-----------------------------|-----------|
| I    | 80%   | 0,670 | 399,63                 | 0,3203       | 400,38              | 99,81                       | 0,86      |
|      | 80%   | 0,659 | 393,05                 | 0,3205       | 400,63              | 98,11                       |           |
|      | 80%   | 0,665 | 396,64                 | 0,3203       | 400,38              | 99,07                       |           |
|      | 100%  | 0,836 | 499,00                 | 0,4002       | 500,25              | 99,75                       |           |
| II   | 100%  | 0,829 | 494,81                 | 0,4001       | 500,13              | 98,94                       | 0,67      |
|      | 100%  | 0,825 | 492,42                 | 0,4002       | 500,25              | 98,43                       |           |
|      | 120%  | 0,993 | 592,99                 | 0,4802       | 600,25              | 98,79                       |           |
| III  | 120%  | 0,986 | 588,80                 | 0,4804       | 600,50              | 98,05                       | 0,39      |
|      | 120%  | 0,988 | 589,99                 | 0,4803       | 600,38              | 98,27                       |           |
|      |       |       |                        |              |                     | $\bar{X} = 98,80$           | 0,64      |

Formula IV

| Rep. | Kons. | Abs.  | Konsentrasi<br>(µg/ml) | W Ibu<br>(g) | Teoritis<br>(µg/ml) | Perolehan<br>Kembali<br>(%) | KV<br>(%) |
|------|-------|-------|------------------------|--------------|---------------------|-----------------------------|-----------|
| I    | 80%   | 0,670 | 399,63                 | 0,3201       | 400,13              | 99,88                       | 1,18      |
|      | 80%   | 0,656 | 391,25                 | 0,3203       | 400,38              | 97,72                       |           |
|      | 80%   | 0,658 | 392,45                 | 0,3202       | 400,25              | 98,05                       |           |
|      | 100%  | 0,837 | 499,60                 | 0,4004       | 500,50              | 99,82                       |           |
| II   | 100%  | 0,839 | 500,80                 | 0,4000       | 500,00              | 100,16                      | 0,47      |
|      | 100%  | 0,844 | 503,79                 | 0,4000       | 500,00              | 100,76                      |           |
|      | 120%  | 0,969 | 578,62                 | 0,4801       | 600,13              | 96,42                       |           |
| III  | 120%  | 0,966 | 576,82                 | 0,4805       | 600,63              | 96,04                       | 0,21      |
|      | 120%  | 0,966 | 576,82                 | 0,4802       | 600,25              | 96,10                       |           |
|      |       |       |                        |              |                     | $\bar{X} = 98,33$           | 0,62      |

**LAMPIRAN G**  
**HASIL PENETAPAN KADAR TABLET IBUPROFEN**

| Form. | Rep. | Abs.  | Csampil<br>(µg/ml) | Cteoritis<br>(µg/ml) | W Ibu<br>(g) | Kadar<br>(%) | Rata-<br>rata<br>±SD | KV<br>(%) |
|-------|------|-------|--------------------|----------------------|--------------|--------------|----------------------|-----------|
| I     | I    | 0,844 | 503,79             | 499,94               | 0,7999       | 100,77       | 100,24               | 1,01      |
|       | II   | 0,830 | 495,41             | 500,06               | 0,8001       | 99,07        | ±                    |           |
|       | III  | 0,845 | 504,39             | 500,00               | 0,8000       | 100,88       | 1,01                 |           |
| II    | I    | 0,837 | 499,60             | 500,13               | 0,8002       | 99,90        | 100,62               | 0,95      |
|       | II   | 0,852 | 508,58             | 500,06               | 0,8001       | 101,70       | ±                    |           |
|       | III  | 0,840 | 501,40             | 500,06               | 0,8001       | 100,27       | 0,95                 |           |
| III   | I    | 0,837 | 499,60             | 500,06               | 0,8001       | 99,91        | 99,91                | 0,25      |
|       | II   | 0,839 | 500,80             | 500,00               | 0,8000       | 100,16       | ±                    |           |
|       | III  | 0,835 | 498,41             | 500,13               | 0,8002       | 99,66        | 0,25                 |           |
| IV    | I    | 0,822 | 490,62             | 500,06               | 0,8001       | 98,11        | 98,45                | 0,35      |
|       | II   | 0,828 | 494,22             | 500,25               | 0,8004       | 98,79        | ±                    |           |
|       | III  | 0,825 | 492,42             | 500,19               | 0,8003       | 98,45        | 0,34                 |           |

**LAMPIRAN H**  
**HASIL UJI AKURASI DAN PRESISI DALAM DAPAR FOSFAT**  
**pH 7,2**

Formula I

| Rep. | Kons. | Abs.  | Konsentrasi<br>(µg/ml) | W Ibu<br>(g) | Teoritis<br>(µg/ml) | Perolehan<br>Kembali<br>(%) | KV<br>(%) |
|------|-------|-------|------------------------|--------------|---------------------|-----------------------------|-----------|
| I    | 80%   | 0,648 | 356,28                 | 0,1779       | 355,80              | 100,14                      | 0,77      |
|      | 80%   | 0,650 | 357,38                 | 0,1778       | 355,60              | 100,50                      |           |
|      | 80%   | 0,640 | 351,90                 | 0,1777       | 355,40              | 99,02                       |           |
|      | 100%  | 0,813 | 446,62                 | 0,2223       | 444,60              | 100,45                      |           |
| II   | 100%  | 0,799 | 438,96                 | 0,2227       | 445,40              | 98,55                       | 0,96      |
|      | 100%  | 0,805 | 442,24                 | 0,2225       | 445,00              | 99,38                       |           |
|      | 120%  | 0,975 | 535,32                 | 0,2667       | 533,40              | 100,36                      |           |
|      | 120%  | 0,969 | 532,03                 | 0,2668       | 533,60              | 99,71                       |           |
| III  | 120%  | 0,982 | 539,15                 | 0,2667       | 533,40              | 101,08                      | 0,68      |
|      |       |       |                        |              |                     |                             |           |
|      |       |       |                        |              |                     | $\bar{x} = 99,91$           | 0,80      |

Formula II

| Rep. | Kons. | Abs.  | Konsentrasi<br>(µg/ml) | W Ibu<br>(g) | Teoritis<br>(µg/ml) | Perolehan<br>Kembali<br>(%) | KV<br>(%) |
|------|-------|-------|------------------------|--------------|---------------------|-----------------------------|-----------|
| I    | 80%   | 0,646 | 355,19                 | 0,1779       | 355,80              | 99,83                       | 0,56      |
|      | 80%   | 0,645 | 354,64                 | 0,1776       | 355,20              | 99,84                       |           |
|      | 80%   | 0,639 | 351,35                 | 0,1777       | 355,40              | 98,86                       |           |
|      | 100%  | 0,820 | 450,45                 | 0,2223       | 444,60              | 101,32                      |           |
| II   | 100%  | 0,809 | 444,43                 | 0,2228       | 445,60              | 99,74                       | 0,85      |
|      | 100%  | 0,818 | 449,36                 | 0,2222       | 444,40              | 101,12                      |           |
|      | 120%  | 0,969 | 532,03                 | 0,2665       | 533,00              | 99,82                       |           |
|      | 120%  | 0,970 | 532,58                 | 0,2662       | 532,40              | 100,03                      |           |
| III  | 120%  | 0,967 | 530,94                 | 0,2666       | 533,20              | 99,58                       | 0,23      |
|      |       |       |                        |              |                     |                             |           |
|      |       |       |                        |              |                     | $\bar{x} = 100,02$          | 0,55      |

Formula III

| Rep.              | Kons. | Abs.  | Konsentrasi<br>(µg/ml) | W Ibu<br>(g) | Teoritis<br>(µg/ml) | Perolehan<br>Kembali<br>(%) | KV<br>(%) |
|-------------------|-------|-------|------------------------|--------------|---------------------|-----------------------------|-----------|
| I                 | 80%   | 0,642 | 352,99                 | 0,1780       | 356,00              | 99,16                       | 0,50      |
|                   | 80%   | 0,647 | 355,73                 | 0,1777       | 355,40              | 100,09                      |           |
|                   | 80%   | 0,645 | 354,64                 | 0,1775       | 355,00              | 99,90                       |           |
|                   | 100%  | 0,796 | 437,31                 | 0,2227       | 445,40              | 98,18                       |           |
| II                | 100%  | 0,808 | 443,88                 | 0,2225       | 445,00              | 99,75                       | 0,82      |
|                   | 100%  | 0,798 | 438,41                 | 0,2223       | 444,60              | 98,61                       |           |
|                   | 120%  | 0,985 | 540,79                 | 0,2665       | 533,00              | 101,46                      |           |
| III               | 120%  | 0,977 | 536,41                 | 0,2668       | 533,60              | 100,53                      | 0,86      |
|                   | 120%  | 0,969 | 532,03                 | 0,2667       | 533,40              | 99,74                       |           |
| $\bar{X} = 99,71$ |       |       |                        |              |                     |                             | 0,73      |

Formula IV

| Rep.              | Kons. | Abs.  | Konsentrasi<br>(µg/ml) | W Ibu<br>(g) | Teoritis<br>(µg/ml) | Perolehan<br>Kembali<br>(%) | KV<br>(%) |
|-------------------|-------|-------|------------------------|--------------|---------------------|-----------------------------|-----------|
| I                 | 80%   | 0,648 | 356,28                 | 0,1779       | 355,80              | 100,14                      | 0,59      |
|                   | 80%   | 0,639 | 351,35                 | 0,1775       | 355,00              | 98,97                       |           |
|                   | 80%   | 0,644 | 354,09                 | 0,1776       | 355,20              | 99,69                       |           |
|                   | 100%  | 0,810 | 444,98                 | 0,2227       | 445,40              | 99,91                       |           |
| II                | 100%  | 0,815 | 447,71                 | 0,2229       | 445,80              | 100,43                      | 0,31      |
|                   | 100%  | 0,809 | 444,43                 | 0,2225       | 445,00              | 99,87                       |           |
|                   | 120%  | 0,980 | 538,05                 | 0,2663       | 532,60              | 101,02                      |           |
| III               | 120%  | 0,966 | 530,39                 | 0,2668       | 533,60              | 99,40                       | 0,83      |
|                   | 120%  | 0,969 | 532,03                 | 0,2662       | 532,40              | 99,93                       |           |
| $\bar{X} = 99,93$ |       |       |                        |              |                     |                             | 0,58      |

**LAMPIRAN I**  
**HASIL UJI DISOLUSI TABLET IBUPROFEN PADA**  
**T = 30 MENIT**

| Form. | Rep. | Abs   | Csampil<br>(µg/ml) | Wt<br>percobaan<br>(µg/ml) | Wt teo<br>(µg/ml) | % Obat<br>terlarut | Rata-<br>rata ±<br>SD | KV<br>(%) |
|-------|------|-------|--------------------|----------------------------|-------------------|--------------------|-----------------------|-----------|
| I     | I    | 0,768 | 421,98             | 379,784                    | 401,35            | 94,63              | 94,93                 | 1,11      |
|       | II   | 0,763 | 419,24             | 377,320                    | 401,15            | 94,06              | ±                     |           |
|       | III  | 0,78  | 428,55             | 385,697                    | 401,35            | 96,10              | 1,05                  |           |
| II    | I    | 0,791 | 434,57             | 391,117                    | 394,00            | 99,27              | 98,51                 | 0,69      |
|       | II   | 0,785 | 431,29             | 388,161                    | 394,95            | 98,28              | ±                     |           |
|       | III  | 0,783 | 430,19             | 387,175                    | 395,20            | 97,97              | 0,68                  |           |
| III   | I    | 0,766 | 420,89             | 378,798                    | 401,55            | 94,33              | 93,39                 | 0,88      |
|       | II   | 0,755 | 414,86             | 373,378                    | 402,10            | 92,86              | ±                     |           |
|       | III  | 0,756 | 415,41             | 373,871                    | 402,15            | 92,97              | 0,82                  |           |
| IV    | I    | 0,753 | 413,77             | 372,393                    | 400,10            | 93,07              | 93,08                 | 0,61      |
|       | II   | 0,758 | 416,51             | 374,856                    | 400,30            | 93,64              | ±                     |           |
|       | III  | 0,749 | 411,58             | 370,422                    | 400,40            | 92,51              | 0,57                  |           |

## LAMPIRAN J

### CONTOH PERHITUNGAN

#### Contoh perhitungan sudut diam

Formula I:

$$W \text{ persegi panjang} = 4,92 \text{ gram}$$

$$W \text{ lingkaran} = 1,25 \text{ gram}$$

$$\begin{aligned} \text{Luas persegi panjang} &= 21,1 \times 29,7 \\ &= 626,67 \text{ cm}^2 \end{aligned}$$

$$\text{Luas lingkaran} = \frac{1,25}{4,92} \times 626,67 = 159,21$$

$$A = \pi \cdot r^2$$

$$\begin{aligned} r^2 &= \frac{A}{\pi} \\ &= \frac{159,21}{3,14} = 50,70 \end{aligned}$$

$$r = 7,12 \text{ cm}$$

$$\text{tg } \alpha = \frac{t}{r} = \frac{4,55}{7,12} = 0,6386$$

$$\alpha = 32,58^\circ$$

#### Contoh perhitungan Hausner ratio dan indeks

Formula I :

$$\text{Berat gelas} = 106,68 \text{ g } (W_1)$$

$$\text{Berat gelas + granul} = 148,41 \text{ g } (W_2)$$

$$V_1 = 100 \text{ ml}$$

$$V_2 = 82 \text{ ml}$$

$$\rho_{\text{tapped}} = \frac{148,41 - 106,68}{82} = 0,51$$

$$\rho_{\text{bulk}} = \frac{148,41 - 106,68}{100} = 0,42$$

$$\text{Hausner Ratio} = \frac{0,51}{0,42} = 1,21$$

$$\% \text{ Indeks Kompresibilitas} = \left( 1 - \frac{0,42}{0,51} \right) = 17,65 \%$$

#### Contoh perhitungan akurasi dan presisi

| %   | Bahan aktif (mg) | Matriks (mg) | NaOH 0,1 N ad | Pipet | NaOH 0,1 N ad | Konsentrasi (ppm) |
|-----|------------------|--------------|---------------|-------|---------------|-------------------|
| 100 | 400              | 400          | 100           | 1,25  | 10            | 500               |

$$\text{Absorbansi} = 0,822 \rightarrow y = 0,0017x + 0,0024$$

$$\text{Konsentrasi sebenarnya} = 490,6234 \text{ ppm}$$

$$\text{Konsentrasi teoritis} = 500 \text{ ppm}$$

$$\% \text{ Perolehan kembali} = \frac{\text{Kons. Sebenarnya}}{\text{Kons. Teoritis}} \times 100\%$$

$$= \frac{490,6234}{500} \times 100\%$$

$$= 98,12 \%$$

$$\begin{aligned}\text{Untuk menghitung \% KV} &= \frac{SD}{\hat{X}} \times 100\% \\ &= \frac{0,56}{98,12} \times 100\% = 0,57\%\end{aligned}$$

### **Contoh perhitungan persen obat terlarut pada t = 30 menit**

Formula I replikasi 1 pada t = 30 menit

Wt tablet = 0,8027

$$\text{Wt teoritis} = \frac{0,8027 \times 10^{-3}}{800} = 401,35$$

$$\% \text{ Obat terlepas} = \frac{\text{Wt percobaan}}{\text{Wt teo}} \times 100\%$$

$$= \frac{379,784}{401,35} \times 100\% = 94,63\%$$

# LAMPIRAN K

## SERTIFIKAT ANALISIS BAHAN

Avicel PH 102

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                        |                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ASAHI KASEI CHEMICALS CORPORATION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                        | Date: 21-JUN-2010<br>Issued by manufacturer                                                                                                                                                                  |
| <small>1-105 Kanda Jinbocho, Chiyoda-ku, TOKYO 101-8101, JAPAN<br/>         TEL. +81-(0)3-3296-3301 FAX +81-(0)3-3296-3467<br/>         Manufacturing site: 304, Mizushima-machi, Nobeoka-city, Miyazaki 882-0015, Japan</small>                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                        |                                                                                                                                                                                                              |
| YOUR NO.: S7ME-10-5298-0060                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                        | 1699/1510/VII/10<br>1670/1510/VII/10                                                                                                                                                                         |
| <b><u>CERTIFICATE OF ANALYSIS</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                        |                                                                                                                                                                                                              |
| Compendial name: Microcrystalline Cellulose, NF, Ph. Eur., JP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                        |                                                                                                                                                                                                              |
| Trade name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | : CEOLUS®                                                                                                                                                                                                                                              |                                                                                                                                                                                                              |
| Grade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | : PH-102                                                                                                                                                                                                                                               | Lot No. 2045 (230bags)                                                                                                                                                                                       |
| Manufacturing Date: 26-APR-2010<br>Re-evaluation Date: 26-APR-2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                        |                                                                                                                                                                                                              |
| Organic Solvent: not used in our process                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                        |                                                                                                                                                                                                              |
| <b>Compendial Standards</b><br>Description<br>Identification<br>Degree of polymerization<br>Loss on drying (%)<br>Water-soluble substances (mg)<br>Ether-soluble substances (mg)<br>Conductivity (μ S/cm)<br>Heavy metals (ppm)<br>Solubility<br>Residue on ignition (%)<br>Bulk density (g/cm³)<br>pH<br>Total aerobic microbial count (cfu/g)<br>Total combined molds and yeasts count (cfu/g)<br><i>Escherichia coli</i><br><i>Salmonella</i> species<br><i>Pseudomonas Aeruginosa</i><br><i>Staphylococcus Aureus</i>                                                                                   | <b>Specifications</b><br>Passes<br>Passes<br>100 - 300<br>2.0 - 5.0<br>NMT 12.5<br>NMT 5.0<br>NMT 75<br>NMT 10<br>Passes<br>NMT 0.1<br>0.28 - 0.33<br>5.0 - 7.5<br>NMT 1000<br>NMT 100<br>None Present<br>None Present<br>None Present<br>None Present | <b>Lot Analysis</b><br>Passes<br>Passes<br>Passes<br>3.2<br>5.9<br>0.5<br>22<br>NMT 10<br>Passes<br>0.02<br>0.302<br>6.2<br>Passes<br>Passes<br>None Present<br>None Present<br>None Present<br>None Present |
| <b>ASAHI Standards</b><br>Particle size, wt. % >250 μ m (60 mesh)      LT 8.0      1.2<br>Particle size, wt. % >150 μ m (100 mesh)      20 - 40      28                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                        |                                                                                                                                                                                                              |
| <small>NMT --Not More Than;    LT --Less Than<br/>         We certify that the product complies with the standards of the NF, Ph. Eur., JP.<br/> <b>Storage conditions:</b> Store at ambient conditions. Keep containers sealed; material is hygroscopic.<br/> <b>Re-evaluation Date:</b> Three years after manufacturing, if stored as recommended.<br/>         Asahi Kasei Chemicals recommends that the customer's quality control unit may re-evaluate the quality of this material at the given time e.g. for loss on drying and extend the shelf life of this lot on its own responsibility.</small> |                                                                                                                                                                                                                                                        |                                                                                                                                                                                                              |
| <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="width: 40%;">              Shuji ONISHI<br/>             Manager<br/>             Quality Assurance Section<br/>             CEOLUS Production Department           </div> <div style="width: 60%; text-align: right;">             3           </div> </div>                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                        |                                                                                                                                                                                                              |

spray dried lactose

**DMV-Fonterra Excipients**  
The ingredients of success



## Certificate of analysis

Page 1/2

Issue date  
27.09.2010  
Purchase order  
DMV-014/10  
Delivery item  
8046990 000030  
Order item  
345311 000050  
Total Quantity Item  
1.800 KG

PT Signa Husada  
Jl. Daan Mogot Km. 17  
11840 Jakarta Barat  
Indonesia

### Material:

SuperTab 11SD  
Monohydrate Lactose USP/NF, Ph.Eur., JP  
Drum with polyethylene innerbag 40 kg net.  
(EU)

Manufacturing site : DMV-Fonterra Excipients GmbH & Co. KG, Nörten-Hardenberg, Germany.

Product name : SuperTab 11SD

Conforms to USP/NF, Ph.Eur., JP, Lactose monohydrate monograph, current at time of manufacture.

Product description: A white or almost white, crystalline powder freely but slowly soluble in water, practically insoluble in ethanol

### Residual solvents

(CPMP/ICH/283/95) : No class 1,2,3 solvents are used during production  
Identification : Complies with Pharmacopoeia when tested

Lot: 10527231 ✓

Quantity: 1.800 KG

Manufacture date: 08.2010

Expiry date: 07.2012

| Characteristic                                                                 | SPECIFICATION |             | Upper Limit | Value       |
|--------------------------------------------------------------------------------|---------------|-------------|-------------|-------------|
|                                                                                | Unit          | Lower Limit |             |             |
| Water ( KF)                                                                    | %             | 4,5         | 5,5         | 5,0         |
| Loss on drying                                                                 | %             | 0,0         | 1,0         | 0,2         |
| Specific rotation 20 °C anhydr                                                 | NON           | 54,4        | 55,9        | 55,1        |
| Residue on ignition/Sulph.Ash                                                  | %             | 0,00        | 0,10        | 0,03        |
| Absorb.1%, 1cm at 270-300 nm                                                   | NON           | 0,00        | 0,07        | 0,01        |
| Absorb.1%, 1cm at 210-220 nm                                                   | NON           | 0,00        | 0,25        | 0,04        |
| Absorb.10%, 1cm at 400 nm                                                      | NON           | 0,00        | 0,04        | 0,01        |
| Appearance of solution (Ph.Eur<br>Clear and colourless<br>or nearly colourless |               |             | Passes test | Passes test |
| Clarity and Colour of Solution<br>Clear and not more                           |               |             | Passes test | Passes test |

(This is an electronic document valid without signature)

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**JRS PHARMA**  **LEADING THE WORLD IN EXCIPIENTS**  
A Division of JRS AG

**VIVASOL®**  
Croscarmellose Sodium Ph. Eur. NF, JP  
**CERTIFICATE OF ANALYSIS**

Batch-no: 3201093156      Manufacturing site: Pirna, Germany  
Re-evaluation date: August 2013  
Manufacturing date: August 2009

| Description                               | Almost white, very hygroscopic powder, practically insoluble in acetone, ethanol, ether and toluene |               |                   |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------|-------------------|
| Standards                                 | Specification                                                                                       | Batch Result  | Reference         |
| Particle size (retained on air jet sieve) |                                                                                                     |               | T226F (MCW)       |
| > 75 µm                                   | max. 2 %                                                                                            | < 2 % *       |                   |
| > 45 µm                                   | max. 10 %                                                                                           | < 10 % *      |                   |
| Pharmacopoeial test items                 | Specification                                                                                       | Batch Result  | Reference         |
| Identification (A, B, C) (1, 2, 3)        | passes                                                                                              | passes *      | Ph. Eur., NF, JP  |
| Degree of Substitution                    | 0.60 - 0.85                                                                                         | 0.75 *        | Ph. Eur., NF, JP  |
| Loss on drying                            | max. 10.0 %                                                                                         | 5.2 %         | Ph. Eur., NF, JP  |
| pH                                        | 5.0 - 7.0                                                                                           | 6.1           | Ph. Eur., USP, JP |
| Content of water-soluble material         | 1.0 - 10.0 %                                                                                        | 6.1 %         | Ph. Eur., NF, JP  |
| Sulphated ash                             | 14.0 - 28.0 %                                                                                       | passes *      | Ph. Eur., JP      |
| Settling volume                           | 10.0 - 30.0 ml                                                                                      | 16.0 ml       | Ph. Eur., NF, JP  |
| Sodium chloride and Sodium glycolate      | max. 0.5 %                                                                                          | < 0.5 % *     | T CC 013 (CHP)    |
| Heavy metals                              | max. 10 ppm                                                                                         | < 10 ppm *    | T CC 043 (CHP)    |
| Arsenic                                   | max. 2 ppm                                                                                          | < 2 ppm *     | T CC 043 (CHP)    |
| Residue of Methanol                       | max. 1.0 %                                                                                          | < 1.0 % *     | T CC 019 (CHP)    |
| Total aerobic microbial count             | < 100 CFU/g                                                                                         | < 100 CFU/g * | Ph. Eur., USP     |
| Fungi / molds and yeasts                  | < 20 CFU/g                                                                                          | < 20 CFU/g *  | Ph. Eur., USP     |
| E. coli, Pseudomonas aeruginosa           | absent in 10 g                                                                                      | absent *      | Ph. Eur., USP     |
| Staph. aureus, Salmonella sp.             | absent in 10 g                                                                                      | absent *      | Ph. Eur., USP     |

\* Results reported are expected results based on periodic testing

The batch described by this certificate meets the requirements of Ph. Eur., NF and JP monographs for Croscarmellose Sodium, current edition. It complies with E 459 monograph and all current EU Food regulations. It is released on the basis of the results ascertained.

The raw materials, manufacturing process, and product do not contain any of the solvents listed in Organic Volatile Impurities (USP<467>) and Residual Solvents (Ph. Eur.<5.4>) except for Methanol limited to max. 1.0 %.

**Storage recommendation:** Protect from excessive heat and moisture  
Keep containers closed.

September 30, 2009  
AB 21127859  
VSD/ P08

Matthias Winkelmann  
QUALITY CONTROL  
CHP Carbohydrate Pirna

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# Crospovidone



**BASF**  
The Chemical Company

**Certificate of Analysis**  
BASF South East Asia Pte Ltd

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Fax No 0062000216452309

PT MEGASETIA AGUNG KIMIA  
SUNTER AGUNG POOMORO TANJUNG PRIK  
14380 JAKARTA UTARA  
Indonesia

2007-04-30  
OKA/M320  
Pr.Jgpr  
+62 621 60-61484  
Certificate No 989  
Page 1 of 4

Certificate of Analysis according to DIN 55350-16-4.2.2

Kollidon® CL  
40KG PE-Drum, removable head  
Purchase Order/Customer Product#  
1421019078  
50000695

Material 50000695  
Order 1327308490 000020  
Delivery 8027112236 000002  
Lot/No 106133771.0  
Lot/Qty 200.000 KG  
Total 200.000 KG

| Test Parameter                           | Requirements                    | UoM    | Results  |
|------------------------------------------|---------------------------------|--------|----------|
| Identification (IR)<br>(Ph.Bur., test A) | must conform                    |        | conforms |
| Identification (Ph.Bur.,<br>test B)      | must conform                    |        | conforms |
| Identification (Ph.Bur.,<br>test C)      | must conform                    |        | conforms |
| Identification (Typ A)                   | must conform                    |        | conforms |
| Peroxides                                | Max.: 400                       | mg/kg  | 46       |
| pH-value (1 % suspension in<br>water)    | Min.: 5.0<br>Max.: 7.5          |        | 6.2      |
| Water soluble substances                 | Max.: 1.00                      | g/100g | 0.25     |
| N-Vinylpyrrolidone (GC)                  | Max.: 10                        | mg/kg  | <2       |
| Arsenic *                                | must conform (max.: 2<br>mg/kg) |        | conforms |

The aforementioned data shall substantiate the agreed contractual quality of the product at the time of passing of risk. The data are controlled at regular intervals as part of our assurance program. Further these data for the properties of product specimens shall imply any legally binding guarantee of certain properties or of fitness for a specific purpose. No liability of ours can be derived therefrom.



PT. MEGASETIA AGUNG KIMIA

## LAMPIRAN L

### TABLE F

#### Tabel Distribusi F

| Denomins<br>for Degrees<br>of Freedom | Numerator Degrees of Freedom |       |       |       |       |       |       |       |       |
|---------------------------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                       | 1                            | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     |
| 1                                     | 161.4                        | 199.5 | 215.7 | 224.6 | 230.2 | 234.0 | 236.8 | 238.9 | 240.5 |
| 2                                     | 18.81                        | 19.00 | 19.16 | 19.25 | 19.30 | 19.33 | 19.35 | 19.37 | 19.38 |
| 3                                     | 10.73                        | 9.55  | 9.28  | 9.12  | 9.01  | 8.94  | 8.89  | 8.85  | 8.81  |
| 4                                     | 7.71                         | 6.94  | 6.59  | 6.39  | 6.26  | 6.16  | 6.09  | 6.04  | 6.00  |
| 5                                     | 6.61                         | 5.79  | 5.41  | 5.19  | 5.05  | 4.95  | 4.88  | 4.82  | 4.77  |
| 6                                     | 5.99                         | 5.14  | 4.76  | 4.53  | 4.39  | 4.28  | 4.21  | 4.15  | 4.10  |
| 7                                     | 5.59                         | 4.74  | 4.35  | 4.12  | 3.97  | 3.87  | 3.79  | 3.73  | 3.68  |
| 8                                     | 5.32                         | 4.46  | 4.07  | 3.84  | 3.69  | 3.58  | 3.50  | 3.44  | 3.39  |
| 9                                     | 5.12                         | 4.26  | 3.86  | 3.63  | 3.48  | 3.37  | 3.29  | 3.23  | 3.18  |
| 10                                    | 4.96                         | 4.10  | 3.71  | 3.48  | 3.33  | 3.22  | 3.14  | 3.07  | 3.02  |
| 11                                    | 4.84                         | 3.98  | 3.59  | 3.36  | 3.20  | 3.09  | 3.01  | 2.95  | 2.90  |
| 12                                    | 4.75                         | 3.89  | 3.49  | 3.26  | 3.11  | 3.00  | 2.91  | 2.85  | 2.80  |
| 13                                    | 4.67                         | 3.81  | 3.41  | 3.18  | 3.03  | 2.92  | 2.83  | 2.77  | 2.71  |
| 14                                    | 4.60                         | 3.74  | 3.34  | 3.11  | 2.96  | 2.85  | 2.76  | 2.70  | 2.65  |
| 15                                    | 4.54                         | 3.68  | 3.29  | 3.06  | 2.90  | 2.79  | 2.71  | 2.64  | 2.59  |
| 16                                    | 4.49                         | 3.63  | 3.24  | 3.01  | 2.85  | 2.74  | 2.66  | 2.59  | 2.54  |
| 17                                    | 4.45                         | 3.59  | 3.20  | 2.96  | 2.81  | 2.70  | 2.61  | 2.55  | 2.49  |
| 18                                    | 4.41                         | 3.55  | 3.16  | 2.93  | 2.77  | 2.66  | 2.58  | 2.51  | 2.46  |
| 19                                    | 4.38                         | 3.52  | 3.13  | 2.90  | 2.74  | 2.63  | 2.54  | 2.48  | 2.42  |
| 20                                    | 4.35                         | 3.49  | 3.10  | 2.87  | 2.71  | 2.60  | 2.51  | 2.45  | 2.39  |
| 21                                    | 4.32                         | 3.47  | 3.07  | 2.84  | 2.68  | 2.57  | 2.49  | 2.42  | 2.37  |
| 22                                    | 4.30                         | 3.44  | 3.05  | 2.82  | 2.66  | 2.55  | 2.46  | 2.40  | 2.34  |
| 23                                    | 4.28                         | 3.42  | 3.03  | 2.80  | 2.64  | 2.53  | 2.44  | 2.37  | 2.32  |
| 24                                    | 4.26                         | 3.40  | 3.01  | 2.78  | 2.62  | 2.51  | 2.42  | 2.36  | 2.30  |
| 25                                    | 4.24                         | 3.39  | 2.99  | 2.76  | 2.60  | 2.49  | 2.40  | 2.34  | 2.28  |
| 26                                    | 4.23                         | 3.37  | 2.98  | 2.74  | 2.59  | 2.47  | 2.39  | 2.32  | 2.27  |
| 27                                    | 4.21                         | 3.35  | 2.96  | 2.73  | 2.57  | 2.46  | 2.37  | 2.31  | 2.25  |
| 28                                    | 4.20                         | 3.34  | 2.95  | 2.71  | 2.56  | 2.45  | 2.36  | 2.29  | 2.24  |
| 29                                    | 4.18                         | 3.33  | 2.93  | 2.70  | 2.55  | 2.43  | 2.35  | 2.28  | 2.22  |
| 30                                    | 4.17                         | 3.32  | 2.92  | 2.69  | 2.53  | 2.42  | 2.33  | 2.27  | 2.21  |
| 40                                    | 4.08                         | 3.23  | 2.84  | 2.61  | 2.45  | 2.34  | 2.25  | 2.18  | 2.12  |
| 60                                    | 4.00                         | 3.15  | 2.76  | 2.53  | 2.37  | 2.25  | 2.17  | 2.10  | 2.04  |
| 120                                   | 3.92                         | 3.07  | 2.68  | 2.45  | 2.29  | 2.17  | 2.09  | 2.02  | 1.96  |
| ∞                                     | 3.84                         | 3.00  | 2.60  | 2.37  | 2.21  | 2.10  | 2.01  | 1.94  | 1.88  |

(Sumber: John E., 1992)

LAMPIRAN M

TABLE UJI r

| DEGREES OF<br>FREEDOM (DF) | 5<br>PERCENT | 1<br>PERCENT | DEGREES OF<br>FREEDOM (DF) | 5<br>PERCENT | 1<br>PERCENT |
|----------------------------|--------------|--------------|----------------------------|--------------|--------------|
| 1                          | .997         | 1.000        | 24                         | .388         | .496         |
| 2                          | .950         | .990         | 25                         | .381         | .487         |
| 3                          | .878         | .959         | 26                         | .374         | .478         |
| 4                          | .811         | .917         | 27                         | .367         | .470         |
| 5                          | .754         | .874         | 28                         | .361         | .463         |
| 6                          | .707         | .834         | 29                         | .355         | .456         |
| 7                          | .666         | .798         | 30                         | .349         | .449         |
| 8                          | .632         | .765         | 35                         | .325         | .418         |
| 9                          | .602         | .735         | 40                         | .304         | .393         |
| 10                         | .576         | .708         | 48                         | .288         | .372         |
| 11                         | .553         | .684         | 50                         | .273         | .354         |
| 12                         | .532         | .661         | 60                         | .250         | .325         |
| 13                         | .514         | .641         | 70                         | .232         | .302         |
| 14                         | .497         | .623         | 80                         | .217         | .283         |
| 15                         | .482         | .606         | 90                         | .205         | .267         |
| 16                         | .468         | .590         | 100                        | .195         | .254         |
| 17                         | .456         | .575         | 125                        | .174         | .228         |
| 18                         | .444         | .561         | 150                        | .159         | .208         |
| 19                         | .433         | .549         | 200                        | .138         | .181         |
| 20                         | .423         | .537         | 300                        | .113         | .148         |
| 21                         | .413         | .526         | 400                        | .098         | .128         |
| 22                         | .404         | .515         | 500                        | .088         | .115         |
| 23                         | .396         | .505         | 1000                       | .062         | .081         |

LAMPIRAN N  
TABLE UJI HSD (0,05)

| $k$<br>d. k. | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   |
|--------------|------|------|------|------|------|------|------|------|------|------|
| 5            | 3.64 | 4.60 | 5.22 | 5.67 | 6.03 | 6.33 | 6.58 | 6.80 | 6.99 | 7.17 |
| 6            | 3.46 | 4.34 | 4.90 | 5.30 | 5.63 | 5.90 | 6.12 | 6.32 | 6.49 | 6.65 |
| 7            | 3.34 | 4.16 | 4.68 | 5.06 | 5.36 | 5.61 | 5.82 | 6.00 | 6.16 | 6.30 |
| 8            | 3.26 | 4.01 | 4.53 | 4.89 | 5.17 | 5.40 | 5.60 | 5.77 | 5.92 | 6.05 |
| 9            | 3.20 | 3.95 | 4.41 | 4.76 | 5.02 | 5.24 | 5.43 | 5.59 | 5.74 | 5.87 |
| 10           | 3.15 | 3.88 | 4.33 | 4.65 | 4.91 | 5.12 | 5.30 | 5.46 | 5.60 | 5.72 |
| 11           | 3.11 | 3.82 | 4.26 | 4.57 | 4.82 | 5.03 | 5.20 | 5.35 | 5.49 | 5.61 |
| 12           | 3.08 | 3.77 | 4.20 | 4.51 | 4.75 | 4.95 | 5.12 | 5.27 | 5.39 | 5.51 |
| 13           | 3.06 | 3.73 | 4.15 | 4.45 | 4.69 | 4.88 | 5.05 | 5.19 | 5.32 | 5.43 |
| 14           | 3.03 | 3.70 | 4.11 | 4.41 | 4.64 | 4.83 | 4.99 | 5.13 | 5.25 | 5.36 |
| 15           | 3.01 | 3.67 | 4.08 | 4.37 | 4.59 | 4.78 | 4.94 | 5.08 | 5.20 | 5.31 |
| 16           | 3.00 | 3.65 | 4.05 | 4.33 | 4.56 | 4.74 | 4.90 | 5.03 | 5.15 | 5.26 |
| 17           | 2.98 | 3.63 | 4.02 | 4.30 | 4.52 | 4.71 | 4.86 | 4.99 | 5.11 | 5.21 |
| 18           | 2.97 | 3.61 | 4.00 | 4.28 | 4.49 | 4.67 | 4.82 | 4.96 | 5.07 | 5.17 |
| 19           | 2.96 | 3.59 | 3.98 | 4.25 | 4.47 | 4.65 | 4.79 | 4.92 | 5.04 | 5.14 |
| 20           | 2.95 | 3.58 | 3.96 | 4.23 | 4.45 | 4.62 | 4.77 | 4.90 | 5.01 | 5.11 |
| 24           | 2.92 | 3.53 | 3.90 | 4.17 | 4.37 | 4.54 | 4.68 | 4.81 | 4.92 | 5.01 |
| 30           | 2.89 | 3.49 | 3.85 | 4.10 | 4.30 | 4.46 | 4.60 | 4.72 | 4.82 | 4.92 |
| 40           | 2.86 | 3.44 | 3.79 | 4.04 | 4.23 | 4.39 | 4.52 | 4.63 | 4.73 | 4.82 |
| 60           | 2.83 | 3.40 | 3.74 | 3.98 | 4.16 | 4.31 | 4.44 | 4.55 | 4.65 | 4.73 |
| 120          | 2.80 | 3.36 | 3.68 | 3.92 | 4.10 | 4.24 | 4.36 | 4.47 | 4.56 | 4.64 |
| $\infty$     | 2.77 | 3.31 | 3.63 | 3.86 | 4.03 | 4.17 | 4.29 | 4.39 | 4.47 | 4.55 |

Catatan kaki: Dari *Annals of mathematical statistics*. Diulang cetak selzin penerbit, The Institute of Mathematical Statistics.

Sumber: Scheffler (1987).

**LAMPIRAN O**  
**TABEL T**

| v    | $\alpha$ |       |        |        |        |
|------|----------|-------|--------|--------|--------|
|      | 0.10     | 0.05  | 0.025  | 0.01   | 0.005  |
| 1    | 3.078    | 6.314 | 12.706 | 31.821 | 63.657 |
| 2    | 1.886    | 2.920 | 4.303  | 6.965  | 9.925  |
| 3    | 1.638    | 2.353 | 3.182  | 4.451  | 5.841  |
| 4    | 1.533    | 2.132 | 2.776  | 3.747  | 4.604  |
| 5    | 1.476    | 2.015 | 2.561  | 3.365  | 4.012  |
| 6    | 1.440    | 1.943 | 2.447  | 3.143  | 3.707  |
| 7    | 1.415    | 1.895 | 2.365  | 2.998  | 3.499  |
| 8    | 1.397    | 1.860 | 2.308  | 2.896  | 3.355  |
| 9    | 1.383    | 1.833 | 2.262  | 2.821  | 3.250  |
| 10   | 1.372    | 1.812 | 2.228  | 2.764  | 3.169  |
| 11   | 1.363    | 1.796 | 2.201  | 2.718  | 3.106  |
| 12   | 1.356    | 1.782 | 2.179  | 2.681  | 3.055  |
| 13   | 1.350    | 1.771 | 2.160  | 2.650  | 3.012  |
| 14   | 1.345    | 1.761 | 2.145  | 2.624  | 2.977  |
| 15   | 1.341    | 1.753 | 2.131  | 2.602  | 2.947  |
| 16   | 1.337    | 1.746 | 2.120  | 2.583  | 2.921  |
| 17   | 1.333    | 1.740 | 2.110  | 2.567  | 2.898  |
| 18   | 1.330    | 1.734 | 2.101  | 2.552  | 2.878  |
| 19   | 1.328    | 1.729 | 2.093  | 2.539  | 2.861  |
| 20   | 1.325    | 1.725 | 2.086  | 2.528  | 2.845  |
| 21   | 1.323    | 1.721 | 2.080  | 2.518  | 2.831  |
| 22   | 1.321    | 1.717 | 2.074  | 2.508  | 2.819  |
| 23   | 1.319    | 1.714 | 2.069  | 2.500  | 2.807  |
| 24   | 1.318    | 1.711 | 2.064  | 2.492  | 2.797  |
| 25   | 1.316    | 1.708 | 2.060  | 2.485  | 2.787  |
| 26   | 1.315    | 1.706 | 2.056  | 2.479  | 2.779  |
| 27   | 1.314    | 1.703 | 2.052  | 2.473  | 2.771  |
| 28   | 1.313    | 1.701 | 2.048  | 2.467  | 2.763  |
| 29   | 1.311    | 1.699 | 2.045  | 2.462  | 2.756  |
| inf. | 1.282    | 1.645 | 1.960  | 2.326  | 2.576  |

Sumber : Ronald E. Walpole (1995) : Pengantar Statistika.

**LAMPIRAN P**  
**HASIL UJI STATISTIK KEKERASAN TABLET IBUPROFEN**  
**ANTAR FORMULA**

| F     | N  | Mean    | Std.<br>Deviation | Std.<br>Error | 95% Confidence<br>Interval for Mean |                |       |       |
|-------|----|---------|-------------------|---------------|-------------------------------------|----------------|-------|-------|
|       |    |         |                   |               | Lower<br>Bound                      | Upper<br>Bound | Min.  | Max.  |
| I     | 3  | 13,6700 | 1,62231           | 0,93664       | 9,6400                              | 17,7000        | 12,00 | 15,24 |
| II    | 3  | 12,6367 | 0,69759           | 0,40275       | 10,9038                             | 14,3696        | 11,86 | 13,21 |
| III   | 3  | 12,3300 | 0,06928           | 0,04000       | 12,1579                             | 12,5021        | 12,25 | 12,37 |
| IV    | 3  | 9,9767  | 0,82051           | 0,47372       | 7,9384                              | 12,0149        | 9,08  | 10,69 |
| Total | 12 | 12,1533 | 1,63768           | 0,47276       | 11,1128                             | 13,1939        | 9,08  | 15,24 |

**ANAVA**  
**KEKERASAN**

| Source         | Sum of<br>Squares | df | Mean Square | F     | Sig.  |
|----------------|-------------------|----|-------------|-------|-------|
| Between Groups | 21,909            | 3  | 7,303       | 7,694 | 0,010 |
| Within Groups  | 7,593             | 8  | 0,949       |       |       |
| Total          | 29,502            | 11 |             |       |       |

Hipotesa pengujian :

F hitung > F tabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

**KEKERASAN  
HSD**

| (I) F | (J) F | Mean<br>Difference (I-J) | Std.<br>Error | Sig.  | 95% Confidence Interval |             |
|-------|-------|--------------------------|---------------|-------|-------------------------|-------------|
|       |       |                          |               |       | Lower Bound             | Upper Bound |
| I     | II    | 1,03333                  | 0,79546       | 0,230 | -0,8010                 | 2,8677      |
|       | III   | 1,34000                  | 0,79546       | 0,131 | -0,4943                 | 3,1743      |
|       | IV    | 3,69333*                 | 0,79546       | 0,002 | 1,8590                  | 5,5277      |
| II    | I     | -1,03333                 | 0,79546       | 0,230 | -2,8677                 | 0,8010      |
|       | III   | 0,30667                  | 0,79546       | 0,710 | -1,5277                 | 2,1410      |
|       | IV    | 2,66000*                 | 0,79546       | 0,010 | 0,8257                  | 4,4943      |
| III   | I     | -1,34000                 | 0,79546       | 0,131 | -3,1743                 | 0,4943      |
|       | II    | -0,30667                 | 0,79546       | 0,710 | -2,1410                 | 1,5277      |
|       | IV    | 2,35333*                 | 0,79546       | 0,018 | 0,5190                  | 4,1877      |
| IV    | I     | -3,69333*                | 0,79546       | 0,002 | -5,5277                 | -1,8590     |
|       | II    | -2,66000*                | 0,79546       | 0,010 | -4,4943                 | -0,8257     |
|       | III   | -2,35333*                | 0,79546       | 0,018 | -4,1877                 | -0,5190     |

Keterangan :

Symbol \* : Perbedaannya signifikan, karena selisih > HSD (5%)

Tanpa symbol : Perbedaannya tidak signifikan, karena selisih < HSD (5%)

**LAMPIRAN Q**  
**HASIL UJI STATISTIK KERAPUHAN TABLET IBUPROFEN**  
**ANTAR FORMULA**

| F     | N  | Mean   | Std.<br>Deviation | Std.<br>Error | 95% Confidence<br>Interval for Mean |                | Min. | Max. |
|-------|----|--------|-------------------|---------------|-------------------------------------|----------------|------|------|
|       |    |        |                   |               | Lower<br>Bound                      | Upper<br>Bound |      |      |
| I     | 3  | 0,3400 | 0,10440           | 0,06028       | 0,0806                              | 0,5994         | 0,27 | 0,46 |
| II    | 3  | 0,4133 | 0,01528           | 0,00882       | 0,3754                              | 0,4513         | 0,40 | 0,43 |
| III   | 3  | 1,4933 | 0,24173           | 0,13956       | 0,8928                              | 2,0938         | 1,27 | 1,75 |
| IV    | 3  | 1,5600 | 0,32419           | 0,18717       | 0,7547                              | 2,3653         | 1,21 | 1,85 |
| Total | 12 | 0,9517 | 0,62752           | 0,18115       | 0,5530                              | 1,3504         | 0,27 | 1,85 |

**ANAVA**  
**KERAPUHAN**

| Source         | Sum of<br>Squares | df | Mean Square | F      | Sig.  |
|----------------|-------------------|----|-------------|--------|-------|
| Between Groups | 3,982             | 3  | 1,327       | 30,399 | 0,000 |
| Within Groups  | 0,349             | 8  | 0,044       |        |       |
| Total          | 4,332             | 11 |             |        |       |

Hipotesa pengujian :

F hitung > F tabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

**KERAPUHAN  
HSD**

| (I) F | (J) F | Mean<br>Difference (I-J) | Std.<br>Error | Sig.  | 95% Confidence Interval |                |
|-------|-------|--------------------------|---------------|-------|-------------------------|----------------|
|       |       |                          |               |       | Lower<br>Bound          | Upper<br>Bound |
| I     | II    | -0,07333                 | 0,17062       | 0,679 | -0,4668                 | 0,3201         |
|       | III   | -1,15333*                | 0,17062       | 0,000 | -1,5468                 | -0,7599        |
|       | IV    | -1,22000*                | 0,17062       | 0,000 | -1,6134                 | -0,8266        |
| II    | I     | 0,07333                  | 0,17062       | 0,679 | -0,3201                 | 0,4668         |
|       | III   | -1,08000*                | 0,17062       | 0,000 | -1,4734                 | -0,6866        |
|       | IV    | -1,14667*                | 0,17062       | 0,000 | -1,5401                 | -0,7532        |
| III   | I     | 1,15333*                 | 0,17062       | 0,000 | 0,7599                  | 1,5468         |
|       | II    | 1,08000*                 | 0,17062       | 0,000 | 0,6866                  | 1,4734         |
|       | IV    | -0,06667                 | 0,17062       | 0,706 | -0,4601                 | 0,3268         |
| IV    | I     | 1,22000*                 | 0,17062       | 0,000 | 0,8266                  | 1,6134         |
|       | II    | 1,14667*                 | 0,17062       | 0,000 | 0,7532                  | 1,5401         |
|       | III   | 0,06667                  | 0,17062       | 0,706 | -0,3268                 | 0,4601         |

Keterangan :

Symbol \* : Perbedaannya signifikan, karena selisih > HSD (5%)

Tanpa symbol : Perbedaannya tidak signifikan, karena selisih < HSD (5%)

**LAMPIRAN R**  
**HASIL UJI STATISTIK WAKTU HANCUR TABLET IBUPROFEN**  
**ANTAR FORMULA**

| F     | N  | Mean    | Std.<br>Deviation | Std.<br>Error | 95% Confidence<br>Interval for Mean |                |       |       |
|-------|----|---------|-------------------|---------------|-------------------------------------|----------------|-------|-------|
|       |    |         |                   |               | Lower<br>Bound                      | Upper<br>Bound | Min.  | Max.  |
| I     | 3  | 9,6667  | 2,51661           | 1,45297       | 3,4151                              | 15,9183        | 7,00  | 12,00 |
| II    | 3  | 11,0000 | 1,73205           | 1,00000       | 6,6973                              | 15,3027        | 9,00  | 12,00 |
| III   | 3  | 22,0000 | 3,00000           | 1,73205       | 14,5476                             | 29,4524        | 19,00 | 25,00 |
| IV    | 3  | 19,6667 | 1,52753           | 0,88192       | 15,8721                             | 23,4612        | 18,00 | 21,00 |
| Total | 12 | 15,5833 | 5,90005           | 1,70320       | 11,8346                             | 19,3320        | 7,00  | 25,00 |

**ANAVA**

**WAKTU HANCUR**

| Source         | Sum of<br>Squares | df | Mean Square | F      | Sig.  |
|----------------|-------------------|----|-------------|--------|-------|
| Between Groups | 341,583           | 3  | 113,861     | 22,038 | 0,000 |
| Within Groups  | 41,333            | 8  | 5,167       |        |       |
| Total          | 382,917           | 11 |             |        |       |

Hipotesa pengujian :

F hitung > F tabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

## WAKTU HANCUR

### HSD

| (I) F | (J) F | Mean<br>Difference (I-J) | Std.<br>Error | Sig.  | 95% Confidence Interval |                |
|-------|-------|--------------------------|---------------|-------|-------------------------|----------------|
|       |       |                          |               |       | Lower<br>Bound          | Upper<br>Bound |
| I     | II    | -1,33333                 | 1,85592       | 0,493 | -5,6131                 | 2,9464         |
|       | III   | -12,33333*               | 1,85592       | 0,000 | -16,6131                | -8,0536        |
|       | IV    | -10,00000*               | 1,85592       | 0,001 | -14,2798                | -5,7202        |
| II    | I     | 1,33333                  | 1,85592       | 0,493 | -2,9464                 | 5,6131         |
|       | III   | -11,00000*               | 1,85592       | 0,000 | -15,2798                | -6,7202        |
|       | IV    | -8,66667*                | 1,85592       | 0,002 | -12,9464                | -4,3869        |
| III   | I     | 12,33333*                | 1,85592       | 0,000 | 8,0536                  | 16,6131        |
|       | II    | 11,00000*                | 1,85592       | 0,000 | 6,7202                  | 15,2798        |
|       | IV    | 2,33333                  | 1,85592       | 0,244 | -1,9464                 | 6,6131         |
| IV    | I     | 10,00000*                | 1,85592       | 0,001 | 5,7202                  | 14,2798        |
|       | II    | 8,66667*                 | 1,85592       | 0,002 | 4,3869                  | 12,9464        |
|       | III   | -2,33333                 | 1,85592       | 0,244 | -6,6131                 | 1,9464         |

Keterangan :

Symbol \* : Perbedaannnya signifikan, karena selisih > HSD (5%)

Tanpa symbol : Perbedaannnya tidak signifikan, karena selisih < HSD (5%)

**LAMPIRAN S**  
**HASIL UJI STATISTIK PERSEN OBAT TERLARUT TABLET**  
**IBUPROFEN ANTAR FORMULA**

| F     | N  | Mean    | Std.<br>Deviation | Std.<br>Error | 95% Confidence<br>Interval for Mean |                |       |       |
|-------|----|---------|-------------------|---------------|-------------------------------------|----------------|-------|-------|
|       |    |         |                   |               | Lower<br>Bound                      | Upper<br>Bound | Min.  | Max.  |
| I     | 3  | 94,9300 | 1,05257           | 0,60770       | 92,3153                             | 97,5447        | 94,06 | 96,10 |
| II    | 3  | 98,5067 | 0,67899           | 0,39202       | 96,8200                             | 100,1934       | 97,97 | 99,27 |
| III   | 3  | 93,3867 | 0,81880           | 0,47273       | 91,3527                             | 95,4207        | 92,86 | 94,33 |
| IV    | 3  | 93,0733 | 0,56501           | 0,32621       | 91,6698                             | 94,4769        | 92,51 | 93,64 |
| Total | 12 | 94,9742 | 2,35408           | 0,67956       | 93,4785                             | 96,4699        | 92,51 | 99,27 |

**ANAVA**

**PERSEN OBAT TERLARUT PADA T = 30 MENIT**

| Source         | Sum of<br>Squares | df | Mean Square | F      | Sig.  |
|----------------|-------------------|----|-------------|--------|-------|
| Between Groups | 55,841            | 3  | 18,614      | 29,100 | 0,000 |
| Within Groups  | 5,117             | 8  | 0,640       |        |       |
| Total          | 60,959            | 11 |             |        |       |

Hipotesa pengujian :

F hitung > F tabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

**PERSEN OBAT TERLARUT PADA T = 30 MENIT  
HSD**

| (I) F | (J) F | Mean<br>Difference (I-J) | Std.<br>Error | Sig.  | 95% Confidence Interval |                |
|-------|-------|--------------------------|---------------|-------|-------------------------|----------------|
|       |       |                          |               |       | Lower<br>Bound          | Upper<br>Bound |
| I     | II    | -3,57667*                | 0,65302       | 0,001 | -5,0825                 | -2,0708        |
|       | III   | 1,54333*                 | 0,65302       | 0,046 | 0,0375                  | 3,0492         |
|       | IV    | 1,85667*                 | 0,65302       | 0,022 | 0,3508                  | 3,3625         |
| II    | I     | 3,57667*                 | 0,65302       | 0,001 | 2,0708                  | 5,0825         |
|       | III   | 5,12000*                 | 0,65302       | 0,000 | 3,6141                  | 6,6259         |
|       | IV    | 5,43333*                 | 0,65302       | 0,000 | 3,9275                  | 6,9392         |
| III   | I     | -1,54333*                | 0,65302       | 0,046 | -3,0492                 | -0,0375        |
|       | II    | -5,12000*                | 0,65302       | 0,000 | -6,6259                 | -3,6141        |
|       | IV    | 0,31333                  | 0,65302       | 0,644 | -1,1925                 | 1,8192         |
| IV    | I     | -1,85667*                | 0,65302       | 0,022 | -3,3625                 | -0,3508        |
|       | II    | -5,43333*                | 0,65302       | 0,000 | -6,9392                 | -3,9275        |
|       | III   | -0,31333                 | 0,65302       | 0,644 | -1,8192                 | 1,1925         |

Keterangan :

Symbol \* : Perbedaannya signifikan, karena selisih > HSD (5%)

Tanpa symbol : Perbedaannya tidak signifikan, karena selisih < HSD (5%)

# LAMPIRAN T

## HASIL ANAVA UJI KEKERASAN PADA PROGRAM DESIGN EXPERT

### Response 1 Kekerasan

#### ANOVA for selected factorial model

#### Analysis of variance table [Partial sum of squares - Type III]

| Source             | Sum of Squares | df | Mean Square | F Value | p-value<br>Prob > F | sig. |
|--------------------|----------------|----|-------------|---------|---------------------|------|
| Model              | 22,35          | 3  | 7,45        | 7,99    | 0,0086              | sig. |
| A-Macam pengikat   | 12,20          | 1  | 12,20       | 13,09   | 0,0068              |      |
| B-Macam penghancur | 8,77           | 1  | 8,77        | 9,41    | 0,0154              |      |
| AB                 | 1,37           | 1  | 1,37        | 1,47    | 0,2594              |      |
| Pure Error         | 7,46           | 8  | 0,93        |         |                     |      |
| Cor Total          | 29,80          | 11 |             |         |                     |      |

The Model F-value of 7,99 implies the model is significant. There is only a 0,86% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0,0500 indicate model terms are significant. In this case A, B are significant model terms. Values greater than 0,1000 indicate the model terms are not significant. If there are many insignificant model terms (not counting those required to support hierarchy), model reduction may improve your model.

|           |       |                |        |
|-----------|-------|----------------|--------|
| Std. Dev. | 0,97  | R-Squared      | 0,7498 |
| Mean      | 12,15 | Adj R-Squared  | 0,6560 |
| C.V. %    | 7,95  | Pred R-Squared | 0,4370 |
| PRESS     | 16,78 | Adeq Precision | 6,686  |

The "Pred R-Squared" of 0,4370 is not as close to the "Adj R-Squared" of 0,6560 as one might

normally expect. This may indicate a large block effect or a possible problem with your model

and/or data. Things to consider are model reduction, response tranformation, outliers, etc.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 6.686 indicates an adequate signal. This model can be used to navigate the design space.

| Factor             | Coefficient | df | Standard Error | 95% CI |       | VIF  |
|--------------------|-------------|----|----------------|--------|-------|------|
|                    | Estimate    |    |                | Low    | High  |      |
| Intercept          | 12,15       | 1  | 0,28           | 11,50  | 12,79 |      |
| A-Macam pengikat   | -1,01       | 1  | 0,28           | -1,65  | -0,37 | 1,00 |
| B-Macam penghancur | -0,86       | 1  | 0,28           | -1,50  | -0,21 | 1,00 |
| AB                 | -0,34       | 1  | 0,28           | -0,98  | 0,30  | 1,00 |

#### Final Equation in Terms of Coded Factors:

$$\begin{aligned} \text{Kekerasan} &= +12,15 \\ &-1,01 \quad * A \\ &-0,86 \quad * B \\ &-0,34 \quad * A * B \end{aligned}$$

#### Final Equation in Terms of Actual Factors:

$$\begin{aligned} \text{Kekerasan} &= +12,14500 \\ &-1,00833 \quad * \text{Macam pengikat} \\ &-0,85500 \quad * \text{Macam penghancur} \\ &-0,33833 \quad * \text{Macam pengikat} * \text{Macam penghancur} \end{aligned}$$

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.

In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:

- 1) Normal probability plot of the studentized residuals to check for normality of residuals.
- 2) Studentized residuals versus predicted values to check for constant error.
- 3) Externally Studentized Residuals to look for outliers, i.e., influential values.
- 4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

**LAMPIRAN U**  
**HASIL ANAVA UJI KERAPUHAN PADA PROGRAM DESIGN**  
**EXPERT**

**Response 2 Kerapuhan**

**ANOVA for selected factorial model**

**Analysis of variance table [Partial sum of squares - Type III]**

| <b>Source</b>             | <b>Sum of Squares</b> | <b>df</b> | <b>Mean Square</b> | <b>F Value</b> | <b>p-Value Prob &gt; F</b> |
|---------------------------|-----------------------|-----------|--------------------|----------------|----------------------------|
| Model                     | 3,93                  | 3         | 1,31               | 32,20          | < 0,0001 Sig.              |
| <i>A-Macam pengikat</i>   | 3,91                  | 1         | 3,91               | 96,15          | < 0,0001                   |
| <i>B-Macam penghancur</i> | 0,018                 | 1         | 0,018              | 0,45           | 0,5200                     |
| AB                        | 7,500E-005            | 1         | 7,500E-005         | 1,844E-003     | 0,9668                     |
| Pure Error                | 0,33                  | 8         | 0,041              |                |                            |
| Cor Total                 | 4,25                  | 11        |                    |                |                            |

The Model F-value of 32,20 implies the model is significant. There is only a 0.01% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0,0500 indicate model terms are significant. In this case A are significant model terms. Values greater than 0,1000 indicate the model terms are not significant. If there are many insignificant model terms (not counting those required to support hierarchy), model reduction may improve your model.

|           |       |                |        |
|-----------|-------|----------------|--------|
| Std. Dev. | 0,20  | R-Squared      | 0,9235 |
| Mean      | 0,95  | Adj R-Squared  | 0,8948 |
| C.V. %    | 21,28 | Pred R-Squared | 0,8279 |
| PRESS     | 0,73  | Adeq Precision | 10,479 |

The "Pred R-Squared" of 0,8279 is in reasonable agreement with the "Adj R-Squared" of 0,8948.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 10,479 indicates an adequate signal. This model can be used to navigate the design space.

| Factor             | Coefficient |    | Standard Error | 95% CI |      | 95% CI High | VIF |
|--------------------|-------------|----|----------------|--------|------|-------------|-----|
|                    | Estimate    | df |                | Low    | High |             |     |
| Intercept          | 0,95        | 1  | 0,058          | 0,81   | 1,08 |             |     |
| A-Macam pengikat   | 0,57        | 1  | 0,050          | 0,44   | 0,71 | 1,00        |     |
| B-Macam penghancur | 0,039       | 1  | 0,058          | -0,095 | 0,17 | 1,00        |     |
| AB                 | 2.500E-003  | 1  | 0,058          | -0,13  | 0,14 | 1,00        |     |

#### Final Equation in Terms of Coded Factors:

Kerapuhan = +0,95  
 +0,57 \* A  
 +0,039 \* B  
 +2,500E-003 \* A \* B

#### Final Equation in Terms of Actual Factors:

Kerapuhan = +0,94750  
 +0,57083 \* Macam pengikat  
 +0,039167 \* Macam penghancur  
 +2,50000E-003 \* Macam pengikat \* Macam penghancur

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.

In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:

- 1) Normal probability plot of the studentized residuals to check for normality of residuals.
- 2) Studentized residuals versus predicted values to check for constant error.
- 3) Externally Studentized Residuals to look for outliers, i.e., influential values.
- 4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon

## LAMPIRAN V

### HASIL ANAVA UJI WAKTU HANCUR PADA PROGRAM DESIGN EXPERT

#### Response 3 Waktu Hancur

##### ANOVA for selected factorial model

##### Analysis of variance table [Partial sum of squares - Type III]

| Source             | Sum of<br>Squares | df | Mean<br>Square | F<br>Value | p-Value<br>Prob > F |
|--------------------|-------------------|----|----------------|------------|---------------------|
| Model              | 341,58            | 3  | 113,861        | 22,04      | < 0,0003 Sig.       |
| A-Macam pengikat   | 330,75            | 1  | 330,75         | 64,02      | < 0,0001            |
| B-Macam penghancur | 0,075             | 1  | 0,75           | 0,15       | 0,7131              |
| AB                 | 10,08             | 1  | 10,08          | 1,95       | 0,1999              |
| Pure Error         | 41,33             | 8  | 5,17           |            |                     |
| Cor Total          | 382,92            | 11 |                |            |                     |

The Model F-value of 22,04 implies the model is significant. There is only a 0,03% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0,0500 indicate model terms are significant. In this case A are significant model terms. Values greater than 0,1000 indicate the model terms are not significant. If there are many insignificant model terms (not counting those required to support hierarchy), model reduction may improve your model.

|           |       |                |        |
|-----------|-------|----------------|--------|
| Std. Dev. | 2,27  | R-Squared      | 0,8921 |
| Mean      | 15,58 | Adj R-Squared  | 0,8516 |
| C.V. %    | 14,59 | Pred R-Squared | 0,7571 |
| PRESS     | 93,00 | Adeq Precision | 9,398  |

The "Pred R-Squared" of 0,7571 is in reasonable agreement with the "Adj R-Squared" of 0,8516.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 9,398 indicates an adequate signal. This model can be used to navigate the design space.

| Factor             | Coefficient | df | Standard Error | 95% CI |       | VIF  |
|--------------------|-------------|----|----------------|--------|-------|------|
|                    | Estimate    |    |                | Low    | High  |      |
| Intercept          | 15,58       | 1  | 0,66           | 14,07  | 17,10 |      |
| A-Macam pengikat   | 5,25        | 1  | 0,66           | 3,74   | 6,76  | 1,00 |
| B-Macam penghancur | -0,25       | 1  | 0,66           | -1,76  | 1,26  | 1,00 |
| AB                 | -0,92       | 1  | 0,66           | -2,43  | 0,60  | 1,00 |

#### Final Equation in Terms of Coded Factors:

$$\begin{aligned} \text{Waktu hancur} &= +15,58 \\ &+ 5,25 * A \\ &- 0,25 * B \\ &- 0,92 * A * B \end{aligned}$$

#### Final Equation in Terms of Actual Factors:

$$\begin{aligned} \text{Waktu hancur} &= +15,58333 \\ &+ 5,25000 * \text{Macam pengikat} \\ &- 0,25000 * \text{Macam penghancur} \\ &- 0,91667 * \text{Macam pengikat} * \text{Macam penghancur} \end{aligned}$$

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.

In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:

- 1) Normal probability plot of the studentized residuals to check for normality of residuals.
- 2) Studentized residuals versus predicted values to check for constant error.
- 3) Externally Studentized Residuals to look for outliers, i.e., influential values.
- 4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

## LAMPIRAN W

### HASIL ANAVA UJI PERSEN OBAT TERLARUT PADA T = 30 MENIT PADA PROGRAM DESIGN EXPERT

#### Response 4 Persen Obat Terlarut

##### ANOVA for selected factorial model

##### Analysis of variance table [Partial sum of squares - Type III]

| Source             | Sum of Squares | df | Mean Square | F Value | p-Value<br>Prob > F |
|--------------------|----------------|----|-------------|---------|---------------------|
| Model              | 55,58          | 3  | 18,61       | 29,10   | < 0,0001 Sig.       |
| A-Macam pengikat   | 36,51          | 1  | 36,51       | 57,07   | < 0,0001            |
| B-Macam penghancur | 7,99           | 1  | 7,99        | 12,49   | 0,0077              |
| AB                 | 11,35          | 1  | 11,35       | 17,74   | 0,0029              |
| Pure Error         | 5,12           |    | 8,00        | 0,64    |                     |
| Cor Total          | 60,96          |    | 11,00       |         |                     |

The Model F-value of 29,10 implies the model is significant. There is only a 0.01% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0,0500 indicate model terms are significant. In this case A, B, AB are significant model terms. Values greater than 0,1000 indicate the model terms are not significant. If there are many insignificant model terms (not counting those required to support hierarchy), model reduction may improve your model.

|           |       |                |        |
|-----------|-------|----------------|--------|
| Std. Dev. | 0,80  | R-Squared      | 0,9161 |
| Mean      | 94,97 | Adj R-Squared  | 0,8846 |
| C.V. %    | 0,84  | Pred R-Squared | 0,8111 |
| PRESS     | 11,51 | Adeq Precision | 11,767 |

The "Pred R-Squared" of 0,8111 is in reasonable agreement with the "Adj R-Squared" of 0,8846.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 11,767 indicates an adequate signal. This model can be used to navigate the design space.

| Factor             | Coefficient |    | Standard Error | 95% CI |       | VIF  |
|--------------------|-------------|----|----------------|--------|-------|------|
|                    | Estimate    | df |                | Low    | High  |      |
| Intercept          | 94,97       | 1  | 0.23           | 94.44  | 95.51 |      |
| A-Macam pengikat   | -1,74       | 1  | 0.23           | -2.28  | -1.21 | 1.00 |
| B-Macam penghancur | 0,82        | 1  | 0.23           | 0.28   | 1.35  | 1.00 |
| AB                 | -0,97       | 1  | 0.23           | -1.50  | -0.44 | 1.00 |

#### Final Equation in Terms of Coded Factors:

Persen obat terlarut = +94.97  
 -1.74 \* A  
 +0.82 \* B  
 -0.97 \* A \* B

#### Final Equation in Terms of Actual Factors:

Persen obat terlarut = +94.97417  
 -1.74417 \* Macam pengikat  
 +0.81583 \* Macam penghancur  
 -0.97250 \* Macam pengikat \* Macam penghancur

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.

In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:

- 1) Normal probability plot of the studentized residuals to check for normality of residuals.
- 2) Studentized residuals versus predicted values to check for constant error.
- 3) Externally Studentized Residuals to look for outliers, i.e., influential values.
- 4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

**LAMPIRAN X**  
**HASIL UJI STATISTIK HASIL PERCOBAAN DAN HASIL**  
**TEORITIS PADA UJI KEKERASAN**

| <b>Paired Samples Statistics</b> |             |          |                       |                        |
|----------------------------------|-------------|----------|-----------------------|------------------------|
|                                  | <b>Mean</b> | <b>N</b> | <b>Std. Deviation</b> | <b>Std. Error Mean</b> |
| Percobaan                        | 12,1550     | 4        | 1,5590                | 0,7795                 |
| Teoritis                         | 12,1500     | 4        | 1,5813                | 0,7906                 |

| <b>Paired Samples Correlations</b> |          |                    |             |
|------------------------------------|----------|--------------------|-------------|
|                                    | <b>N</b> | <b>Correlation</b> | <b>Sig.</b> |
| Percobaan & Teoritis               | 4        | 1,000              | 0,000       |

| <b>Paired Samples Test</b> |             |                       |                        |                                                  |              |          |           |                        |
|----------------------------|-------------|-----------------------|------------------------|--------------------------------------------------|--------------|----------|-----------|------------------------|
| <b>Paired Differences</b>  |             |                       |                        |                                                  |              |          |           |                        |
|                            | <b>Mean</b> | <b>Std. Deviation</b> | <b>Std. Error Mean</b> | <b>95% Confidence Interval of the Difference</b> |              | <b>t</b> | <b>df</b> | <b>Sig. (2-tailed)</b> |
|                            |             |                       |                        | <b>Lower</b>                                     | <b>Upper</b> |          |           |                        |
| Percobaan - Teoritis       | 0,0050      | 0,0238                | 0,0119                 | -0.0329                                          | 0,0429       | 0,42     | 3         | 0,703                  |

**LAMPIRAN Y**  
**HASIL UJI STATISTIK HASIL PERCOBAAN DAN HASIL**  
**TEORITIS PADA UJI KERAPUHAN**

| <b>Paired Samples Statistics</b> |             |          |                       |                        |
|----------------------------------|-------------|----------|-----------------------|------------------------|
|                                  | <b>Mean</b> | <b>N</b> | <b>Std. Deviation</b> | <b>Std. Error Mean</b> |
| Percobaan                        | 0,9500      | 4        | 0,6652                | 0,3326                 |
| Teoritis                         | 0,9500      | 4        | 0,6598                | 0,3299                 |

| <b>Paired Samples Correlations</b> |          |                    |             |
|------------------------------------|----------|--------------------|-------------|
|                                    | <b>N</b> | <b>Correlation</b> | <b>Sig.</b> |
| Percobaan & Teoritis               | 4        | 1,000              | 0,000       |

| <b>Paired Samples Test</b> |             |                       |                        |                                                  |              |          |           |                        |
|----------------------------|-------------|-----------------------|------------------------|--------------------------------------------------|--------------|----------|-----------|------------------------|
| <b>Paired Differences</b>  |             |                       |                        |                                                  |              |          |           |                        |
|                            | <b>Mean</b> | <b>Std. Deviation</b> | <b>Std. Error Mean</b> | <b>95% Confidence Interval of the Difference</b> |              | <b>t</b> | <b>df</b> | <b>Sig. (2-tailed)</b> |
|                            |             |                       |                        | <b>Lower</b>                                     | <b>Upper</b> |          |           |                        |
| Percobaan - Teoritis       | 0,0000      | 0,0082                | 0,0041                 | -0,0130                                          | 0,0130       | 0,00     | 3         | 1,000                  |

## LAMPIRAN Z

### HASIL UJI STATISTIK HASIL PERCOBAAN DAN HASIL TEORITIS PADA UJI WAKTU HANCUR

| Paired Samples Statistics |         |   |                |                 |
|---------------------------|---------|---|----------------|-----------------|
|                           | Mean    | N | Std. Deviation | Std. Error Mean |
| Percobaan                 | 15,5850 | 4 | 6,1603         | 3,0802          |
| Teoritis                  | 15,5800 | 4 | 6,1613         | 3,0807          |

| Paired Samples Correlations |   |             |       |
|-----------------------------|---|-------------|-------|
|                             | N | Correlation | Sig.  |
| Percobaan & Teoritis        | 4 | 1,000       | 0,000 |

| Paired Samples Test  |        |                |                 |                                           |        |      |    |                 |
|----------------------|--------|----------------|-----------------|-------------------------------------------|--------|------|----|-----------------|
| Paired Differences   |        |                |                 |                                           |        |      |    |                 |
|                      | Mean   | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference |        | t    | df | Sig. (2-tailed) |
|                      |        |                |                 | Lower                                     | Upper  |      |    |                 |
| Percobaan - Teoritis | 0,0050 | 0,0058         | 0,0029          | -0,0042                                   | 0,0142 | 1,73 | 3  | 0,182           |

## LAMPIRAN AA

### HASIL UJI STATISTIK HASIL PERCOBAAN DAN HASIL TEORITIS PADA UJI PERSEN OBAT TERLARUT PADA T = 30 MENIT

#### Paired Samples Statistics

|           | Mean    | N | Std. Deviation | Std. Error<br>Mean |
|-----------|---------|---|----------------|--------------------|
| Percobaan | 94,9775 | 4 | 2,4901         | 1,2450             |
| Teoritis  | 94,9700 | 4 | 2,4875         | 1,2438             |

#### Paired Samples Correlations

|                      | N | Correlation | Sig.  |
|----------------------|---|-------------|-------|
| Percobaan & Teoritis | 4 | 1,000       | 0,000 |

#### Paired Samples Test

|                      | Paired Differences |                |                 |                                           |        | t    | df | Sig. (2-tailed) |
|----------------------|--------------------|----------------|-----------------|-------------------------------------------|--------|------|----|-----------------|
|                      | Mean               | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference |        |      |    |                 |
|                      |                    |                |                 |                                           |        |      |    |                 |
|                      |                    |                |                 | Lower                                     | Upper  |      |    |                 |
| Percobaan - Teoritis | 0,0075             | 0,0050         | 0,0025          | -0,0005                                   | 0,0155 | 3,00 | 3  | 0,058           |

**LAMPIRAN AB**  
**UJI F KURVA BAKU PENETAPAN KADAR**

Uji Kesamaan Regresi (NaOH)

| Konsentrasi<br>(X) | Absorbansi<br>(Y) | $X^2$     | $Y^2$    | XY       |
|--------------------|-------------------|-----------|----------|----------|
| 99,8               | 0,176             | 9960,04   | 0,030976 | 17,5648  |
| 199,6              | 0,357             | 39840,16  | 0,127449 | 71,2572  |
| 299,4              | 0,505             | 89640,36  | 0,255025 | 151,197  |
| 399,2              | 0,655             | 159360,64 | 0,429025 | 261,476  |
| 499                | 0,849             | 249001    | 0,720801 | 423,651  |
| 598,8              | 1                 | 358561,44 | 1        | 598,8    |
| $\Sigma$           |                   | 906363,64 | 2,563276 | 1523,946 |

| Konsentrasi<br>(X) | Absorbansi<br>(Y) | $X^2$     | $Y^2$    | XY        |
|--------------------|-------------------|-----------|----------|-----------|
| 100,1              | 0,166             | 10020,01  | 0,027556 | 16,6166   |
| 200,2              | 0,33              | 40080,04  | 0,1089   | 66,066    |
| 300,3              | 0,525             | 90180,09  | 0,275625 | 157,6575  |
| 400,4              | 0,682             | 160320,16 | 0,465124 | 273,0728  |
| 500,5              | 0,838             | 250500,25 | 0,702244 | 419,419   |
| 600,6              | 0,993             | 360720,36 | 0,986049 | 596,3958  |
| $\Sigma$           |                   | 911820,91 | 2,565498 | 1529,2277 |

| Konsentrasi<br>(X) | Absorbansi<br>(Y) | $X^2$     | $Y^2$    | XY        |
|--------------------|-------------------|-----------|----------|-----------|
| 99,9               | 0,158             | 9980,01   | 0,024964 | 15,7842   |
| 199,8              | 0,344             | 39920,04  | 0,118336 | 68,7312   |
| 299,7              | 0,506             | 89820,09  | 0,256036 | 151,6482  |
| 399,6              | 0,678             | 159680,16 | 0,459684 | 270,9288  |
| 499,5              | 0,837             | 249500,25 | 0,700569 | 418,0815  |
| 599,4              | 0,996             | 359280,36 | 0,992016 | 597,0024  |
| $\Sigma$           |                   | 908180,91 | 2,551605 | 1522,1763 |

|             | $\Sigma X^2$ | $\Sigma XY$ | $\Sigma Y^2$ | N | SSi         | RDF |
|-------------|--------------|-------------|--------------|---|-------------|-----|
| Regresi I   | 906363,6400  | 1523,9460   | 2,563276     | 6 | 0,00093644  | 4   |
| Regresi II  | 911820,9100  | 1529,2277   | 2,565498     | 6 | 0,00080867  | 4   |
| Regresi III | 908180,9100  | 1522,1763   | 2,551605     | 6 | 0,00032841  | 4   |
| $\Sigma$    | 2726365,46   | 4575,35     | 7,680379     |   | 0,002087909 |     |

Ssc = 0,002073527

F hitung = 0,027742993 < Ftabel 0,05(3;12) 3,49

**LAMPIRAN AC**  
**UJI F KURVA BAKU UJI DISOLUSI**

Uji Kesamaan Regresi (Dapar Fosfat pH 7,2)

| Konsentrasi<br>(X) | Absorbansi<br>(Y) | X <sup>2</sup> | Y <sup>2</sup> | XY       |
|--------------------|-------------------|----------------|----------------|----------|
| 100,1              | 0,174             | 10020,01       | 0,030276       | 17,4174  |
| 200,2              | 0,357             | 40080,04       | 0,127449       | 71,4714  |
| 300,3              | 0,531             | 90180,09       | 0,281961       | 159,4593 |
| 400,4              | 0,72              | 160320,16      | 0,5184         | 288,288  |
| 500,5              | 0,909             | 250500,25      | 0,826281       | 454,9545 |
| 600,6              | 1,014             | 360720,36      | 1,028196       | 609,0084 |
| <b>Σ</b>           |                   | 911820,91      | 2,812563       | 1600,599 |

| Konsentrasi<br>(X) | Absorbansi<br>(Y) | X <sup>2</sup> | Y <sup>2</sup> | XY       |
|--------------------|-------------------|----------------|----------------|----------|
| 100,1              | 0,181             | 10020,01       | 0,032761       | 18,1181  |
| 200,2              | 0,363             | 40080,04       | 0,131769       | 72,6726  |
| 300,3              | 0,546             | 90180,09       | 0,298116       | 163,9638 |
| 400,4              | 0,722             | 160320,16      | 0,521284       | 289,0888 |
| 500,5              | 0,919             | 250500,25      | 0,844561       | 459,9595 |
| 600,6              | 1,092             | 360720,36      | 1,192464       | 655,8552 |
| <b>Σ</b>           |                   | 911820,91      | 3,020955       | 1659,658 |

| Konsentrasi<br>(X) | Absorbansi<br>(Y) | X <sup>2</sup> | Y <sup>2</sup> | XY        |
|--------------------|-------------------|----------------|----------------|-----------|
| 100,2              | 0,176             | 10040,04       | 0,030976       | 17,6352   |
| 200,4              | 0,367             | 40160,16       | 0,134689       | 73,5468   |
| 300,6              | 0,55              | 90360,36       | 0,3025         | 165,33    |
| 400,8              | 0,721             | 160640,64      | 0,519841       | 288,9768  |
| 501                | 0,912             | 251001         | 0,831744       | 456,912   |
| 601,2              | 1,09              | 361441,44      | 1,1881         | 655,308   |
| <b>Σ</b>           |                   | 913643,64      | 3,00785        | 1657,7088 |

|             | $\Sigma X^2$ | $\Sigma XY$ | $\Sigma Y^2$ | N | SSi         | RDF |
|-------------|--------------|-------------|--------------|---|-------------|-----|
| Regresi I   | 911820,91    | 1600,599    | 2,812563     | 6 | 0,002891571 | 4   |
| Regresi II  | 911820,91    | 1659,658    | 3,020955     | 6 | 0,00011544  | 4   |
| Regresi III | 913643,64    | 1657,7088   | 3,00785      | 6 | 0,00011444  | 4   |
| $\Sigma$    | 2737285,46   | 4917,9658   | 8,841368     |   | 0,005465438 |     |

Ssc

= 0,005465438

F hitung

= 3,003715147 < Ftabel 0,05(3;12) 3,49