

**Report No.:** 13957  
**Date:** 04.09.2012  
**Contact:** MB

## Task:

**Application field:** Agriculture

**Material:** **Aluminium oxide (Al<sub>2</sub>O<sub>3</sub>)**

**Feed size:** presumed particle size 80 to 220 µm

**Feed quantity:** about 100 g for each sample

**Material specification(s):** dry

**Customer requirements(s):** Required particle size fraction: 110 µm

**Subsequent analysis:** Particle size analysis

## Solution

**Selected Instrument(s):** Vibratory Sieve Shaker AS 200 control

**Configuration(s) Item nos.:**

- 1 x AS 200 control, 100-240 V, 50/60 Hz, incl.test report acc. EN 10204 2.2
- 1 x Clamping device "comfort" for test sieves 200/203 mm ø
- 1 x Collecting pan stainless steel, ø 200x50 mm
- 1 x Test Sieve, ISO 3310/1, 200x50mm, 63µm, stainless steel, with compliance certificate acc. EN 10204 2.1
- 1 x Test Sieve, ISO 3310/1, 200x50mm, 90µm, stainless steel, with compliance certificate acc. EN 10204 2.1
- 1 x Test Sieve, ISO 3310/1, 200x50mm, 106µm, stainless steel, with compliance certificate acc. EN 10204 2.1
- 1 x Test Sieve, ISO 3310/1, 200x50mm, 150µm, stainless steel, with compliance certificate acc. EN 10204 2.1
- 1 x Test Sieve, ISO 3310/1, 200x50mm, 180µm, stainless steel, with compliance certificate acc. EN 10204 2.1
- 1 x Test Sieve, ISO 3310/1, 200x50mm, 212µm, stainless steel, with compliance certificate acc. EN 10204 2.1
- 1 x EasySieve, for Windows® 2000/XP/Vista/7, English/German, Single-user-licence, -SR-incl. adapter RS232-USB

Please note: Other electrical versions of the instrument(s) are available with different item numbers.

**Parameter(s):** Amplitude 1.3 mm, Interval 10 sec

**Time:** 5 min

The application report is based solely on the processing of the available sample material in the indicated amount. No legal claims shall be derived from this test report.

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**Achieved result(s):** See Test Report EasySieve

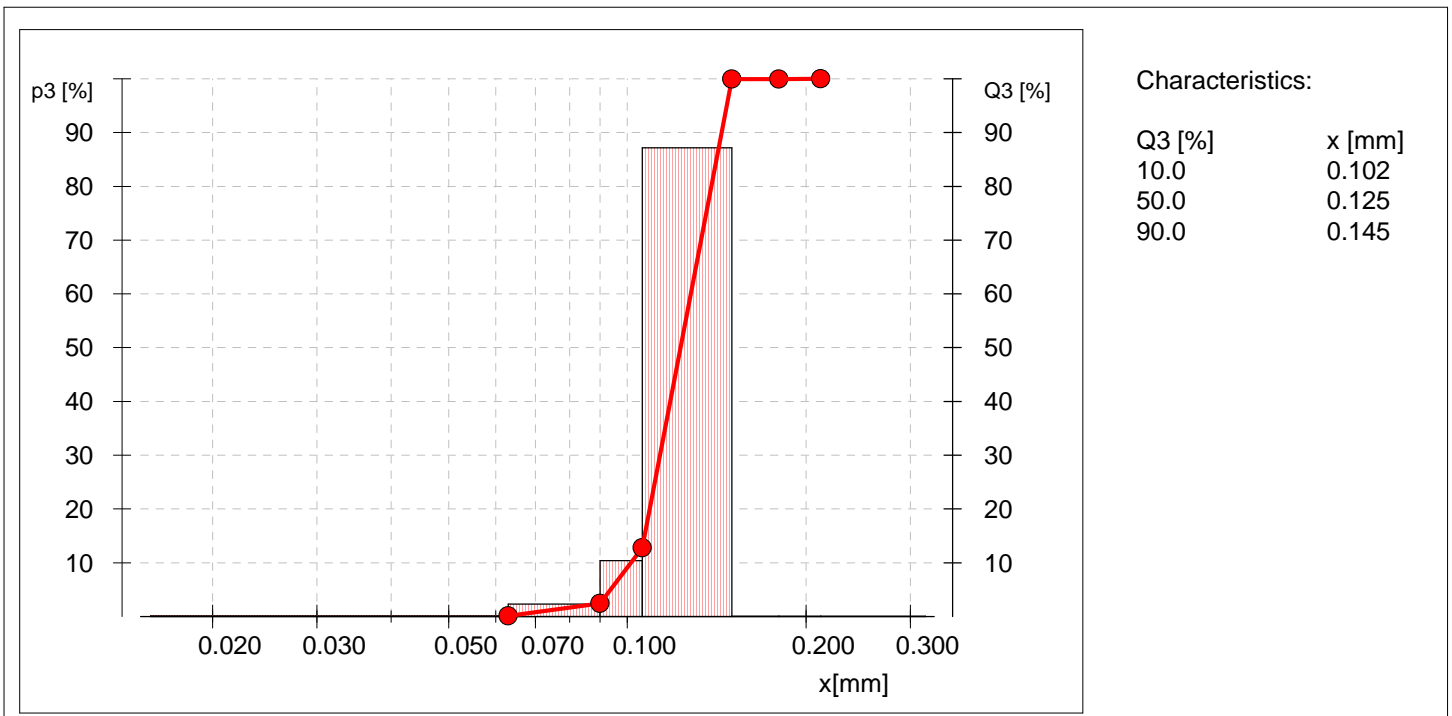
**Remark(s):** Sieves 110  $\mu\text{m}$  and 220  $\mu\text{m}$  acc. to ISO 3310-1 are not available. The closest possible aperture size is 112  $\mu\text{m}$  and 224  $\mu\text{m}$  respectively.

**Recommendation:** The Vibratory Sieve Shaker AS 200 control is suitable to analyse the sample material under the above mentioned conditions.

## Retsch Sieve Analysis

|                               |  |                               |                           |
|-------------------------------|--|-------------------------------|---------------------------|
| Company:                      | Appledesign s.r.o.   |                               |                           |
| User:                         | GBE  |                               |                           |
| Result file:                  | ... Users\Anwendungsdaten\EasySieve\SIEVEDAT\13957_Corund\13957_Corund_002.rdf |                               |                           |
| Task file:                    | 13957_Corund.afg   | Size classes file:            | 13957_Corund-2.gkl        |
| Date:                         | 4. 9.2012 16:35  | Sieving duration [mm:ss]:     | 05:00                     |
| Sieve machine:                | AS 200 control   | Amplitude [mm]:               | 1.3                       |
| Interval working              |  | Interval time [s]:            | 10.0                      |
| Material:                     | Corund Sample 1  |                               |                           |
| Sample quantity [g]:          | 101.27   | Sum loaded sieve weights [g]: | 101.26                    |
| Sieve loss [%]:               | 0.01   |                               |                           |
| Sampling:                     | ./.  | Sample preparation:           | Sample dividing by PT 100 |
| Sieve method:                 | three-dimensional AS 200   | Sieve diameter:               | 200 x 50 mm               |
| Sieves according to standard: | DIN ISO 3310-1   | Sieving aids:                 | No sieving aids           |
| Comment:                      |  |                               |                           |

| Size class [mm] | p3 [%] | Q3 [%] | $\Delta m$ [g] | $\Sigma \Delta m$ [g] |
|-----------------|--------|--------|----------------|-----------------------|
| < 0.063         | 0.1    | 0.1    | 0.12           | 0.12                  |
| 0.063 - 0.090   | 2.3    | 2.4    | 2.33           | 2.45                  |
| 0.090 - 0.106   | 10.4   | 12.8   | 10.49          | 12.94                 |
| 0.106 - 0.150   | 87.2   | 99.9   | 88.25          | 101.19                |
| 0.150 - 0.180   | 0.0    | 100.0  | 0.03           | 101.22                |
| 0.180 - 0.212   | 0.0    | 100.0  | 0.02           | 101.24                |
| > 0.212         | 0.0    | 100.0  | 0.02           | 101.26                |

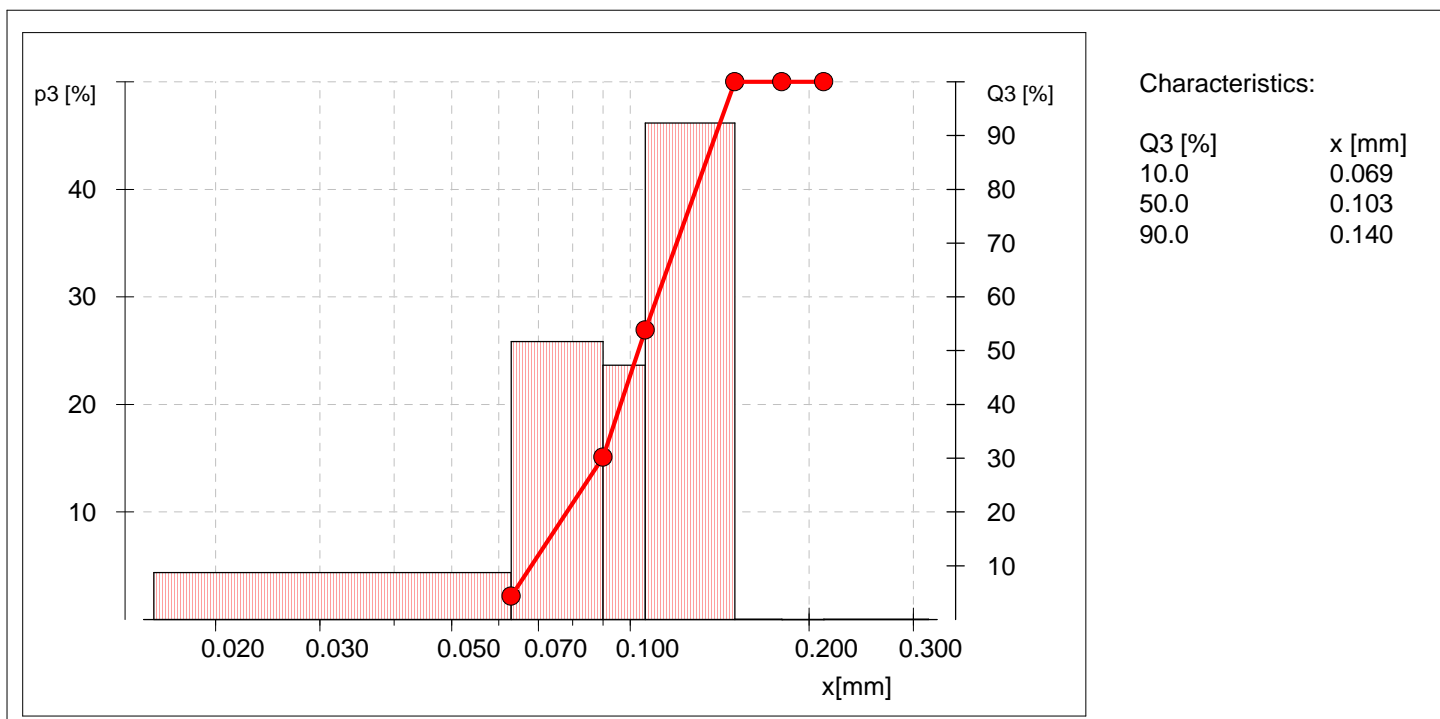


User: \_\_\_\_\_

## Retsch Sieve Analysis

|                               |  |                               |                           |
|-------------------------------|--|-------------------------------|---------------------------|
| Company:                      | Appledesign s.r.o.   |                               |                           |
| User:                         | GBE  |                               |                           |
| Result file:                  | ... Users\Anwendungsdaten\EasySieve\SIEVEDAT\13957_Corund\13957_Corund_001.rdf |                               |                           |
| Task file:                    | 13957_Corund.afg   | Size classes file:            | 13957_Corund-2.gkl        |
| Date:                         | 4. 9.2012 16:20  | Sieving duration [mm:ss]:     | 05:00                     |
| Sieve machine:                | AS 200 control   | Amplitude [mm]:               | 1.3                       |
| Interval working              |  | Interval time [s]:            | 10.0                      |
| Material:                     | Corund Sample 2  |                               |                           |
| Sample quantity [g]:          | 98.42  | Sum loaded sieve weights [g]: | 98.37                     |
| Sieve loss [%]:               | 0.05   |                               |                           |
| Sampling:                     | ./.  | Sample preparation:           | Sample dividing by PT 100 |
| Sieve method:                 | three-dimensional AS 200   | Sieve diameter:               | 200 x 50 mm               |
| Sieves according to standard: | DIN ISO 3310-1   | Sieving aids:                 | No sieving aids           |
| Comment:                      |  |                               |                           |

| Size class [mm] | p3 [%] | Q3 [%] | $\Delta m$ [g] | $\Sigma \Delta m$ [g] |
|-----------------|--------|--------|----------------|-----------------------|
| < 0.063         | 4.4    | 4.4    | 4.28           | 4.28                  |
| 0.063 - 0.090   | 25.8   | 30.2   | 25.42          | 29.70                 |
| 0.090 - 0.106   | 23.6   | 53.8   | 23.25          | 52.95                 |
| 0.106 - 0.150   | 46.2   | 100.0  | 45.40          | 98.35                 |
| 0.150 - 0.180   | 0.0    | 100.0  | 0.01           | 98.36                 |
| 0.180 - 0.212   | 0.0    | 100.0  | 0.00           | 98.36                 |
| > 0.212         | 0.0    | 100.0  | 0.01           | 98.37                 |



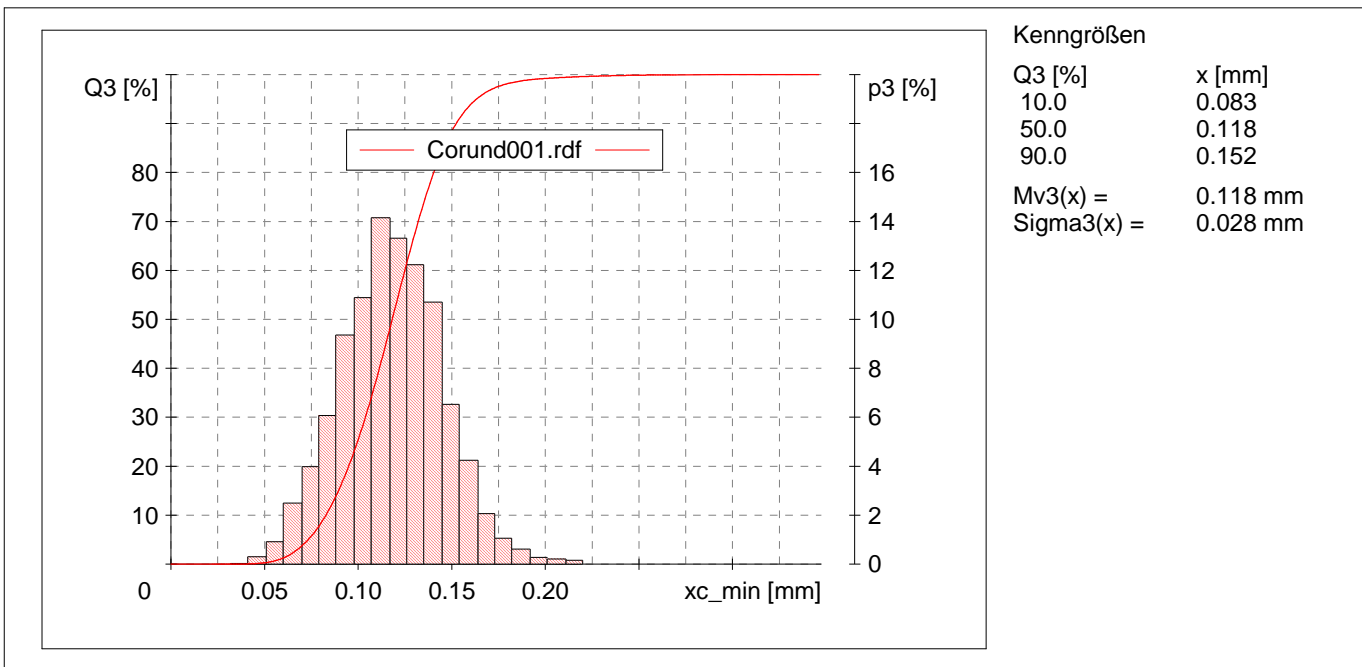
User: \_\_\_\_\_



### Retsch Particle analysis

|                 |  |
|-----------------|--|
| Firma:          | Appldesign   |
| Bearbeiter:     | GBE  |
| Ergebnisdatei:  | G:\_ANWENDUNGSTECHNIK\Testbericht\Camsizer\CAMDAT\R13957\Corund001.rdf               |
| Messaufgabe:    | C:\Camsizer\CAMSYS\R13957_Corund.afg   |
| Messzeit:       | 05.09.2012 , 9:45 , Dauer 47 min 33 s bei 0.5 % Dichte, Bildrate 1:1 und 60 mm Rinne |
| Partikelmodell: | xc_min   |
| Partikelanzahl: | CCD-B = 47152954 , CCD-Z = 3544355   |
| Anpassung:      | nein   |
| Material:       | Corund sample 1  |

| Kornklasse | [mm]    | p3 [%] | Q3 [%] | Kornklasse | [mm]  | p3 [%] | Q3 [%] |
|------------|---------|--------|--------|------------|-------|--------|--------|
|            | < 0.032 | 0.00   | 0.00   | 0.126 -    | 0.135 | 12.23  | 73.75  |
| 0.032 -    | 0.041   | 0.03   | 0.03   | 0.135 -    | 0.145 | 10.71  | 84.46  |
| 0.041 -    | 0.051   | 0.30   | 0.33   | 0.145 -    | 0.154 | 6.53   | 90.99  |
| 0.051 -    | 0.060   | 0.92   | 1.25   | 0.154 -    | 0.164 | 4.24   | 95.23  |
| 0.060 -    | 0.070   | 2.49   | 3.74   | 0.164 -    | 0.173 | 2.06   | 97.29  |
| 0.070 -    | 0.079   | 3.98   | 7.72   | 0.173 -    | 0.182 | 1.06   | 98.35  |
| 0.079 -    | 0.088   | 6.08   | 13.80  | 0.182 -    | 0.192 | 0.61   | 98.96  |
| 0.088 -    | 0.098   | 9.35   | 23.15  | 0.192 -    | 0.201 | 0.28   | 99.24  |
| 0.098 -    | 0.107   | 10.89  | 34.04  | 0.201 -    | 0.211 | 0.21   | 99.45  |
| 0.107 -    | 0.117   | 14.16  | 48.20  | 0.211 -    | 0.220 | 0.15   | 99.60  |
| 0.117 -    | 0.126   | 13.32  | 61.52  | > 0.220    |       | 0.40   | 100.00 |



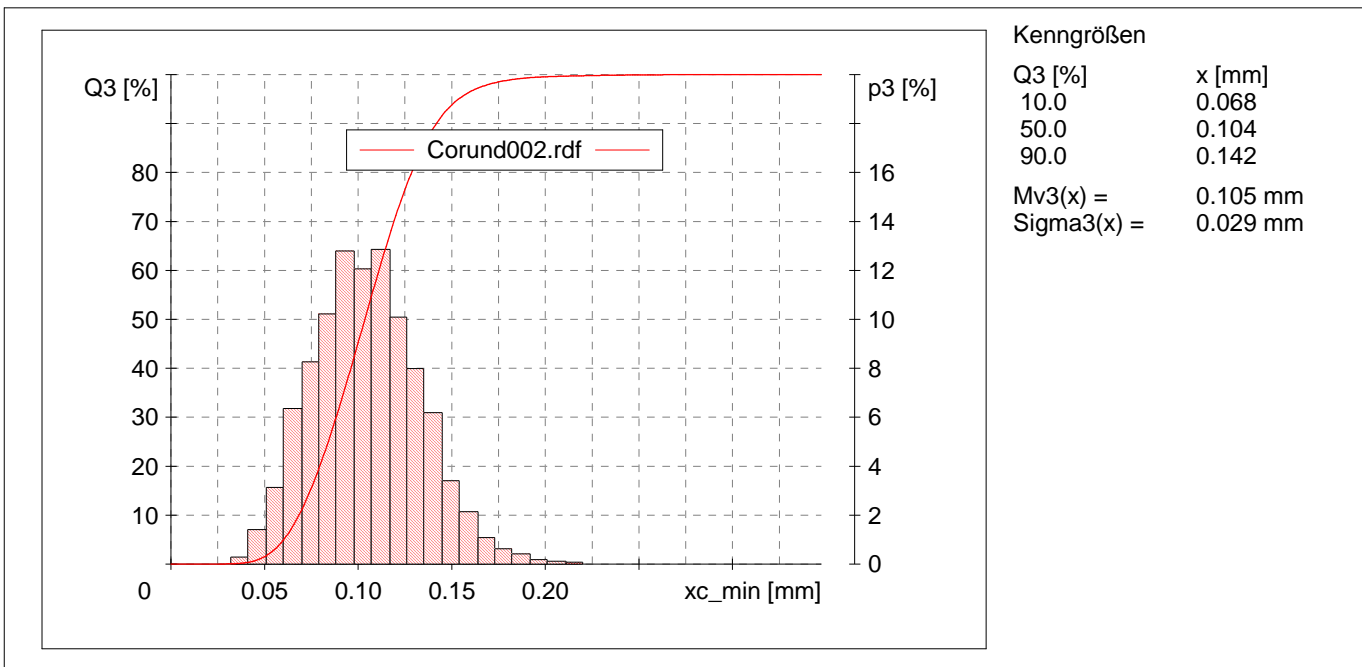
Bearbeiter



### Retsch Particle analysis

|                 |   |
|-----------------|---|
| Firma:          | Appldesign  |
| Bearbeiter:     | GBE   |
| Ergebnisdatei:  | G:\_ANWENDUNGSTECHNIK\Testbericht\Camsizer\CAMDAT\R13957\Corund002.rdf                |
| Messaufgabe:    | C:\Camsizer\CAMSYS\R13957_Corund.afg  |
| Messzeit:       | 05.09.2012 , 11:03 , Dauer 38 min 54 s bei 0.5 % Dichte, Bildrate 1:1 und 60 mm Rinne |
| Partikelmodell: | xc_min  |
| Partikelanzahl: | CCD-B = 41013161 , CCD-Z = 5393844  |
| Anpassung:      | nein  |
| Material:       | Corund sample 2   |

| Kornklasse | [mm]    | p3 [%] | Q3 [%] | Kornklasse | [mm]  | p3 [%] | Q3 [%] |
|------------|---------|--------|--------|------------|-------|--------|--------|
|            | < 0.032 | 0.06   | 0.06   | 0.126 -    | 0.135 | 7.99   | 85.52  |
| 0.032 -    | 0.041   | 0.28   | 0.34   | 0.135 -    | 0.145 | 6.18   | 91.70  |
| 0.041 -    | 0.051   | 1.41   | 1.75   | 0.145 -    | 0.154 | 3.40   | 95.10  |
| 0.051 -    | 0.060   | 3.13   | 4.88   | 0.154 -    | 0.164 | 2.15   | 97.25  |
| 0.060 -    | 0.070   | 6.36   | 11.24  | 0.164 -    | 0.173 | 1.08   | 98.33  |
| 0.070 -    | 0.079   | 8.26   | 19.50  | 0.173 -    | 0.182 | 0.63   | 98.96  |
| 0.079 -    | 0.088   | 10.22  | 29.72  | 0.182 -    | 0.192 | 0.42   | 99.38  |
| 0.088 -    | 0.098   | 12.79  | 42.51  | 0.192 -    | 0.201 | 0.19   | 99.57  |
| 0.098 -    | 0.107   | 12.06  | 54.57  | 0.201 -    | 0.211 | 0.11   | 99.68  |
| 0.107 -    | 0.117   | 12.87  | 67.44  | 0.211 -    | 0.220 | 0.09   | 99.77  |
| 0.117 -    | 0.126   | 10.09  | 77.53  | > 0.220    |       | 0.23   | 100.00 |



Bearbeiter