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## CONTROL GRADE 30\_20230804\_122800\_G03\_S03\_M03-Evalu report (CONTROL GRADE 30\_20230804\_122800\_G03\_S03\_M03)

### General information

|                    |                                                          |                        |                     |
|--------------------|----------------------------------------------------------|------------------------|---------------------|
| Analysis date      | 2023-08-04 15:19:49                                      | Measurement start time | 2023-08-04 12:36:54 |
| Analyst            | Administrator                                            | Operator               | Administrator       |
| Sample name        | CONTROL GRADE 30                                         | Comment                |                     |
| Measured data name | C:\Users\Rigaku pc\Desktop\ANALYSIS\OGA\04-08-2023\CO... | Memo                   |                     |

### Peak list

| No. | 2 $\theta$ , ° | d, Å        | Height, cps | FWHM, °   | Int. I., cps° | Int. W., ° | Asymmetry | Decay( $\eta$ L/mL) | Decay( $\eta$ H/mH) | Size, Å   |
|-----|----------------|-------------|-------------|-----------|---------------|------------|-----------|---------------------|---------------------|-----------|
| 1   | 20.815(10)     | 4.264(2)    | 543(66)     | 0.06(2)   | 75(9)         | 0.14(3)    | 0.8(5)    | 1.5(8)              | 1.5(6)              | 1301(421) |
| 2   | 21.98(3)       | 4.041(5)    | 279(41)     | 0.16(4)   | 50(9)         | 0.18(6)    | 3(3)      | 0.0(6)              | 0.7(11)             | 542(128)  |
| 3   | 24.1(2)        | 3.69(3)     | 102(15)     | 1.1(2)    | 130(25)       | 1.3(4)     | 3(3)      | 0.0(6)              | 0.7(11)             | 76(16)    |
| 4   | 26.595(5)      | 3.3490(7)   | 2027(157)   | 0.130(18) | 429(18)       | 0.21(3)    | 0.5(2)    | 1.50(18)            | 0.77(19)            | 658(90)   |
| 5   | 27.471(5)      | 3.2442(6)   | 812(87)     | 0.08(2)   | 97(11)        | 0.12(3)    | 4(5)      | 0.7(5)              | 1.4(4)              | 1065(285) |
| 6   | 27.958(9)      | 3.1888(10)  | 578(63)     | 0.16(4)   | 135(13)       | 0.23(5)    | 0.9(11)   | 1.0(4)              | 0.5(4)              | 519(114)  |
| 7   | 29.810(10)     | 2.9947(10)  | 604(68)     | 0.22(3)   | 256(21)       | 0.42(8)    | 4(4)      | 1.5(2)              | 0.0(10)             | 391(55)   |
| 8   | 30.431(8)      | 2.9350(8)   | 1370(128)   | 0.058(10) | 115(9)        | 0.084(14)  | 0.8(6)    | 1.0(6)              | 0.5(5)              | 1476(262) |
| 9   | 34.06(3)       | 2.630(2)    | 354(45)     | 0.15(6)   | 92(10)        | 0.26(6)    | 0.9(9)    | 1.5(6)              | 0.9(8)              | 583(223)  |
| 10  | 36.551(9)      | 2.4564(6)   | 565(70)     | 0.08(2)   | 73(12)        | 0.13(4)    | 1.1(11)   | 1.5(4)              | 0.0(11)             | 1088(322) |
| 11  | 47.085(7)      | 1.9285(3)   | 474(56)     | 0.07(3)   | 71(8)         | 0.15(4)    | 1.1(12)   | 1.5(4)              | 1.5(4)              | 1260(468) |
| 12  | 59.959(6)      | 1.54155(15) | 339(50)     | 0.10(2)   | 36(8)         | 0.11(4)    | 5(10)     | 0.0(8)              | 0(2)                | 956(202)  |



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| No. | 2 $\theta$ , ° | Phase Name                          | Chemical Formula                                                        | Card No              | Norm. I. | Profile Type       | Distributi... | Degree of Orientation |
|-----|----------------|-------------------------------------|-------------------------------------------------------------------------|----------------------|----------|--------------------|---------------|-----------------------|
| 1   | 20.815(10)     | Quartz, syn: 1 0 0                  | Si O <sub>2</sub>                                                       | 01-089-1961          | 17.43    | Split pseudo-Voigt | -             | -                     |
| 2   | 21.98(3)       | Anorthite: 2 0 -2                   | Ca Al <sub>2</sub> ( Si O <sub>4</sub> ) <sub>2</sub>                   | 00-002-0523          | 11.66    | Split pseudo-Voigt | -             | -                     |
| 3   | 24.1(2)        | Unknown                             |                                                                         |                      | 30.36    | Split pseudo-Voigt | -             | -                     |
| 4   | 26.595(5)      | Quartz, syn: 1 0 1,Anorthite: 1...  | Si O <sub>2</sub> ,Ca Al <sub>2</sub> ( Si O <sub>4</sub> ...           | 01-089-1961,00-00... | 100.00   | Split pseudo-Voigt | -             | -                     |
| 5   | 27.471(5)      | Osumilite: 2 1 1                    | K - Na - Ca - Mg -...                                                   | 00-010-0413          | 22.66    | Split pseudo-Voigt | -             | -                     |
| 6   | 27.958(9)      | Anorthite: 2 0 -4,Albite: 0 0 2,... | Ca Al <sub>2</sub> ( Si O <sub>4</sub> ) <sub>2</sub> ,N...             | 00-002-0523,00-00... | 31.44    | Split pseudo-Voigt | -             | -                     |
| 7   | 29.810(10)     | Muscovite: 0 2 5                    | H <sub>2</sub> K Al <sub>3</sub> ( Si O <sub>4</sub> ) <sub>3</sub>     | 00-001-1098          | 59.70    | Split pseudo-Voigt | -             | -                     |
| 8   | 30.431(8)      | Albite: 2 2 -2,Orthoclase: 2 2 -... | Na Al Si <sub>3</sub> O <sub>8</sub> ,Al <sub>2</sub> O...              | 00-001-0739,00-00... | 26.66    | Split pseudo-Voigt | -             | -                     |
| 9   | 34.06(3)       | Albite: 3 1 -1                      | Na Al Si <sub>3</sub> O <sub>8</sub>                                    | 00-001-0739          | 21.32    | Split pseudo-Voigt | -             | -                     |
| 10  | 36.551(9)      | Quartz, syn: 1 1 0,Orthoclase: 1... | Si O <sub>2</sub> ,Al <sub>2</sub> O <sub>3</sub> · K <sub>2</sub> O... | 01-089-1961,00-00... | 17.00    | Split pseudo-Voigt | -             | -                     |
| 11  | 47.085(7)      | Unknown                             |                                                                         |                      | 16.43    | Split pseudo-Voigt | -             | -                     |
| 12  | 59.959(6)      | Quartz, syn: 2 1 1                  | Si O <sub>2</sub>                                                       | 01-089-1961          | 8.42     | Split pseudo-Voigt | -             | -                     |

| No. | 2 $\theta$ , ° | Ring Factor | $\beta$ Cluster |
|-----|----------------|-------------|-----------------|
| 1   | 20.815(10)     | -           | -               |
| 2   | 21.98(3)       | -           | -               |
| 3   | 24.1(2)        | -           | -               |
| 4   | 26.595(5)      | -           | -               |
| 5   | 27.471(5)      | -           | -               |
| 6   | 27.958(9)      | -           | -               |
| 7   | 29.810(10)     | -           | -               |
| 8   | 30.431(8)      | -           | -               |
| 9   | 34.06(3)       | -           | -               |
| 10  | 36.551(9)      | -           | -               |
| 11  | 47.085(7)      | -           | -               |
| 12  | 59.959(6)      | -           | -               |



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## Qualitative Analysis Results



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| Phase name  | Formula                           | Figure of merit | Phase reg. detail        | Space Group  | DB Card Number |
|-------------|-----------------------------------|-----------------|--------------------------|--------------|----------------|
| Quartz, syn | Si O2                             | 0.866           | S/M(PDF-4 Minerals 2021) | 180 : P6222  | 01-089-1961    |
| Anorthite   | Ca Al2 ( Si O4 )2                 | 3.014           | S/M(PDF-4 Minerals 2021) | 2 : C-1      | 00-002-0523    |
| Albite      | Na Al Si3 O8                      | 3.061           | S/M(PDF-4 Minerals 2021) | 2 : C-1      | 00-001-0739    |
| Orthoclase  | Al2 O3 · K2 O ·6 Si O2            | 3.256           | S/M(PDF-4 Minerals 2021) | 12 : C12/m1  | 00-002-0475    |
| Muscovite   | H2 K Al3 ( Si O4 )3               | 2.983           | S/M(PDF-4 Minerals 2021) | 15 : C12/c1  | 00-001-1098    |
| Osumilite   | K - Na - Ca - Mg - Fe - Al - S... | 1.773           | S/M(PDF-4 Minerals 2021) | 192 : P6/mcc | 00-010-0413    |

Phase Data View

