

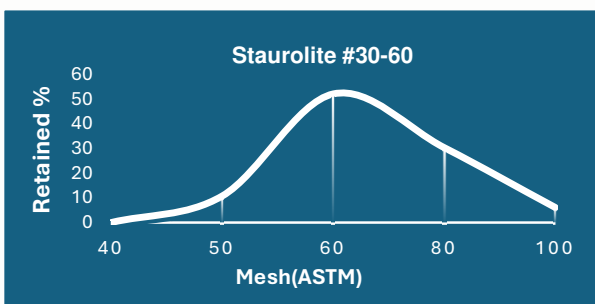


ARIMA MINERALS

## Staurolite #30-60



| Particle Size Analysis* <sup>1</sup> |       |                |              |
|--------------------------------------|-------|----------------|--------------|
| Mesh                                 | MM    | Guaranteed (%) | Retained (%) |
| 30                                   | 0.600 | < 1            | 0.20         |
| 40                                   | 0.425 | 2 ~ 20         | 8.84         |
| 50                                   | 0.300 | 35 ~ 85        | 80.38        |
| 60                                   | 0.250 | 0 ~ 15         | 7.70         |
| Pan                                  |       | < 5            | 2.88         |



| Mineralogical Report* <sup>3</sup> |                |             |
|------------------------------------|----------------|-------------|
| Minerals                           | Guaranteed (%) | Typical (%) |
| Staurolite                         | 95.00 Min      | 95.64       |
| Ilmenite                           | 2.00 Max       | 1.82        |
| Leucoxene                          | 1.00 Max       | 0.86        |
| Zircon                             | 1.00 Max       | 0.75        |
| Silica                             | 1.00 Max       | 0.93        |

| Chemical Content* <sup>2</sup>     |              |             |
|------------------------------------|--------------|-------------|
| Elements                           | Guaranteed % | Typical (%) |
| Al <sub>2</sub> O <sub>3</sub>     | 47 ~ 54      | 49.26       |
| Fe <sub>2</sub> O <sub>3</sub>     | 10 ~ 20      | 16.05       |
| SiO <sub>2</sub>                   | 25 ~ 32      | 28.19       |
| TiO <sub>2</sub>                   | 2.00 Max     | 1.27        |
| ZrO <sub>2</sub> +HfO <sub>2</sub> | 2.00 Max     | 0.98        |
| MgO                                | 3.00 Max     | 2.03        |
| MnO                                | 0.50 Max     | 0.28        |
| CaO                                | 0.50 Max     | 0.16        |

| Physical Parameters                        |             |                       |
|--|-------------|-----------------------|
| Parameters                                 | Guaranteed  | Typical               |
| Chloride(ppm)                              | 25 Max      | 20.41                 |
| Conductivity(mS/m)                         | 15 Max      | 7.25                  |
| LOI @ 1000°C* <sup>4</sup> (%)             | 0.50 Max    | 0.18                  |
| H <sub>2</sub> O @ 110°C* <sup>5</sup> (%) | 0.25 Max    | 0.14                  |
| Specific gravity                           | 3.4 ~ 3.8   | 3.71                  |
| Bulk Density (t/m <sup>3</sup> )           | 1.9 to 2.3  | 2.04 t/m <sup>3</sup> |
| Colour                                     | Brown/Black | Black                 |
| Hardness (Mohs Scale)                      | 6.5 Min     | 7                     |

1. Particle Size determined by the method of ASTM C136
2. Chemical assay tested by X Ray Florescence Spectrometry (Epsilon 1 / Axios Max). Instrument calibrated with standard samples and tested by Bureau Veritas.
3. Mineral purity determined by Grain counting.

4. Loss on ignition (LOI @1000°C) determined gravimetrically.
5. Moisture content (H<sub>2</sub>O) determined by the method of ASTM C566/ISO 1127-5.
6. This material is naturally occurring and some variations in grain size and/or chemical analyses can be expected. Other guarantees for specific elements are subject to discussion for individual contracts.

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