

**PRODUCT TEST CERTIFICATE**

|  |   |                       |                     |
|--|---|-----------------------|---------------------|
| Product Name                                   | Spherical Nb521 Powder                    | Type                  | 15-53 $\mu\text{m}$ |
| <b>Chemical Composition</b>                    |   |                       |                     |
| Element  | Value (%)                                 | Element               | Value (%)           |
| Nb   | Bal.                                      | W                     | 4.96                |
| Mo   | 1.90                                      | Zr                    | 0.98                |
| Al   | <0.005                                    | Si                    | <0.002              |
| Fe   | <0.005                                    | Others                | <0.05               |
| <b>Gas Impurities</b>                          |   |                       |                     |
| Element  | Value (%)                                 | Element               | Value (%)           |
| C  | 0.057                                     | O                     | 0.036               |
| H  | 0.0027                                    | N                     | 0.0089              |
| <b>Density</b>                                 |   | <b>Hall Flow Rate</b> |                     |
| Apparent Density<br>( $\text{g}/\text{cm}^3$ ) | Tap Density<br>( $\text{g}/\text{cm}^3$ ) | Value (s/50g)         |                     |
| $\geq 4.5$                                     | $\geq 5.5$                                | $\leq 15.0$           |                     |
| SEM  |   |                       |                     |