

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2023-05-10 19:13:09

Date of Next Testing: 2027-05-09 19:13:09

Product Name: **Hafnium oxide**

CAS Number: 12055-23-1

Specifications & Purity:  $\geq 99.99\%$  metals basis, excluding Zr, Zr < 0.3%

Lot #: E23061328

SKU #: **H301462**

Version: **0**

Analysis #: **156966**

Storage Temperature: Room temperature

| Parameter                                           | Limit Values          | Result                |
|-----------------------------------------------------|-----------------------|-----------------------|
| Loss on Ignition (1100 °C, 1 Hr)                    | 0-2 (%)               | 1.28500 %             |
| Zirconium(Zr)                                       | 0-3000 (ppm)          | 34.00000 ppm          |
| Purity Based On Trace Metals Analysis(excluding Zr) | 99.99-100 (%)         | 99.99100 %            |
| Total metallic impurities (excluding Zr)            | 0-3000 (ppm)          | 90.00000 ppm          |
| Appearance (H301462)                                | White powder          | White powder          |
| ICP:Confirms Hafnium Component                      | Confirmed             | Confirmed             |
| X-Ray Diffraction                                   | Conforms to Structure | Conforms to Structure |



John Su  
QA & QC Manager