

## Certificate of Analysis

Date of Testing: 2022-06-22 15:17:15  
Date of Next Testing: 2022-12-19 15:17:15  
Product Name: **Zirconium butoxide solution**  
CAS Number: 1071-76-7  
Specifications & Purity: 80 wt. % in n-butanol  
Lot #: G2117340  
SKU #: **Z106334**  
**Analysis: 104441**  
Storage Temperature: Argon charged

Parameter	Limit Values	Result
Hydrolyzable Chloride	0-1000 (ppm)	244.00 ppm
Density (20°C)	1.06-1.08	1.07
Iron(Fe)	0-300 (ppm)	123.00 ppm
ZrO <sub>2</sub> basis	27-29 (%)	28.10 %
Concentration(Chelometric Method)	80-86 (%)	82.30 %
Appearance (Z106334)	Colorless to Yellow Viscous Liquid	Colorless to Yellow Viscous Liquid
Proton NMR spectrum	Conforms to Structure	Conforms to Structure
Solubility in EtOH , Clear, Colorless to Yellow	pass	Pass



John Su  
QA & QC Manager