

## Certificate of Analysis

Date of Testing: 2023-11-13 15:01:44  
Date of Next Testing: 2024-05-11 15:01:44  
Product Name: **Zirconium butoxide solution**  
CAS Number: 1071-76-7  
Specifications & Purity: 80 wt. % in n-butanol  
Lot #: H2310297  
SKU #: **Z106334**  
**Analysis:** **294741**  
Storage Temperature: Argon charged

Parameter	Limit Values	Result
Hydrolyzable Chloride	0-1000 (ppm)	1.06 ppm
Density (20°C)	1.06-1.08	1.06
Iron(Fe)	0-300 (ppm)	0.00 ppm
ZrO <sub>2</sub> basis	27-29 (%)	28.60 %
Concentration(Chelometric Method)	80-86 (%)	80.17 %
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