

## CERTIFICATE OF ANALYSIS

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by Intertek. Certificate Number. 2317548

Catalogue Number	19548
Lot Number	A0476263
Description	Ruthenium(III) chloride hydrate,35 - 40% Ru
CAS Number	14898-67-0
Quality Test/Release Date	23/Sep/2025
Suggested retest date	23/Sep/2028
Country of Origin	GERMANY
Declaration of Origin	synthetic
BSE/TSE	Not directly derived from or manufactured with any animal byproducts in any way (Including but not limited to fermentation or nutrient broth, catalysts, enzymes).

Result Name	Units	Specifications	Test Value
Appearance (Color)		Dark brown to black	Dark brown to black
Appearance (Form)		Powder or crystalline powder or crystals and/or chunks	Powder and chunks
Assay	%	35 to 40 (Ru)	37.5 (Ru)
Trace analysis		Trace analysis values are based on Ru	Trace analysis values are based on Ru
Silver (Ag)	ppm	≤300	≤300
Gold (Au)	ppm	≤300	≤300
Calcium (Ca)	ppm	≤300	≤300
Copper (Cu)	ppm	≤300	≤300
Iron (Fe)	ppm	≤300	≤300
Iridium (Ir)	ppm	≤500	≤500
Potassium (K)	ppm	≤300	≤300
Magnesium (Mg)	ppm	≤300	≤300
Sodium (Na)	ppm	≤300	≤300
Osmium (Os)	ppm	≤100	≤100
Palladium (Pd)	ppm	≤500	≤500
Platinum (Pt)	ppm	≤500	≤500
Rhodium (Rh)	ppm	≤500	≤500
Silicon (Si)	ppm	≤300	≤300



Geert Torfs  
Supervisor, QC

Products are processed under ISO 9001:2015 quality management systems and samples are tested for conformance to the noted specifications. Certain data may have been supplied by third parties. We disclaim the implied warranties of merchantability and fitness for a particular purpose, and the accuracy of third-party data or information associated with the product. Products are for research and development use only. Products are not for direct administration to humans or animals. It is the responsibility of the final formulator or end user to determine suitability, and to qualify and/or validate each product for its intended use.

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of the catalogue number listed above.