

*Trace***SELECT**[®]

High-Purity Reagents Tailored for Trace Analysis



sigma-aldrich.com

T411149

What **TraceSELECT** Means for Your Analysis

Highest purity and long term stability

- ✓ Over 60 cation traces specified in the low ppt (*TraceSELECT* Ultra) or ppb range (*TraceSELECT*)
- ✓ Long shelf life with consistent purity, because of due to high-quality fluoropolymer bottles

**Accurate, fast, and
cost-effective analyses**

**Competitive prices and
high availability due to
world-class distribution**

Comprehensive product range

- ✓ AAS (graphite furnace AAS, flame AAS, hydride AAS)
- ✓ ICP-OES, ICP-MS, LC-ICP-MS
- ✓ IC, Voltammetry (including Polarography)

... get the highest purity



*Trace***SELECT** Ultra

Metal Contamination
(each metal)

<0.1 $\mu\text{g}/\text{kg}$ (<0.1 ppb)

*Trace***SELECT**

<10 $\mu\text{g}/\text{kg}$ (<10 ppb)

puriss. p.a.

<500 $\mu\text{g}/\text{kg}$ (<500 ppb)

... get all your trace analysis reagents from Sigma-Aldrich

Sample
Preparation

Digestion reagents (acids, bases, salts)

- trace analysis (*TraceSELECT*)
- ultratrace analysis (*TraceSELECT Ultra*)



Analysis

- Matrix modifiers, buffers, and reducing agents for AAS
- Solvents for LC-ICP-MS applications
- Eluent concentrates for IC
- Ultrapure reagents for polarography



Calibration

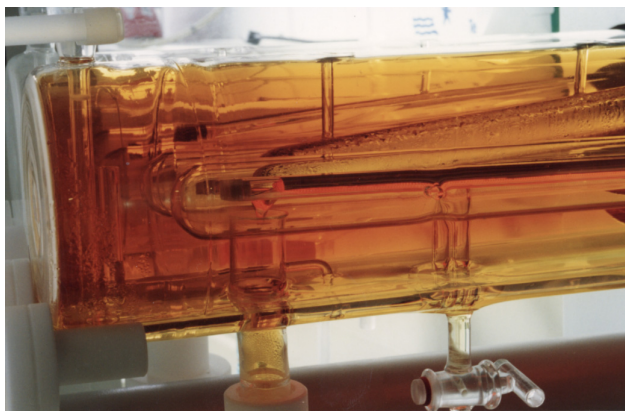
TraceCERT[®] - Certified Reference Materials (CRMs)



4

...ultra-low blank values

- Purified by sub-boiling distillation



- Stored in high-quality, fluoropolymer bottles



SIGMA-ALDRICH **Fluka**
ANALYTICAL

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Certificate of Analysis

Product Name:	NITRIC ACID	
Product Number:	TraceSelectUltra, for trace analysis	
Product Brand:	Fluka	
Molecular Formula:	HNO ₃	
Molecular Mass:	63.01	
CAS Number:	7697-37-2	

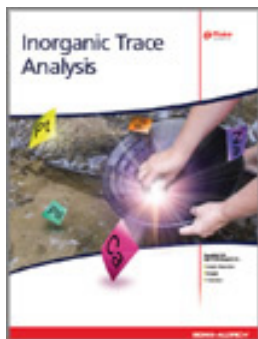
TEST	SPECIFICATION	LOT BCBF4568V RESULTS
APPEARANCE (COLOR)	COLORLESS	COLORLESS
APPEARANCE (FORM)	CLEAR LIQUID	CLEAR LIQUID
TITRATION (T) NAOH 1M	≥ 65 %	69.5 %
DENSITY D20/4	1.360 - 1.415	1.411
SILVER (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG
ALUMINIUM (ICP)	≤ 0.05 UG/KG	< 0.05 UG/KG
ARSENIC (ICP)	≤ 0.1 UG/KG	< 0.1 UG/KG
GOLD (ICP)	≤ 0.02 UG/KG	< 0.02 UG/KG
BARIUM (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG
BERYLLIUM (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG
BISMUTH (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG
CALCIUM (ICP)	≤ 0.1 UG/KG	< 0.1 UG/KG
CADMIUM (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG
COBALT (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG
CHROMIUM (ICP)	≤ 0.05 UG/KG	< 0.05 UG/KG
CESIUM (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG
COPPER (ICP)	≤ 0.02 UG/KG	< 0.02 UG/KG
IRON (ICP)	≤ 0.1 UG/KG	< 0.1 UG/KG
GALLIUM (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG
GERMANIUM (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG
HAFNIUM (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG
INDIUM (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG
IRIDIUM (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG
POTASSIUM (ICP)	≤ 0.1 UG/KG	< 0.1 UG/KG
LITHIUM (ICP)	≤ 0.01 UG/KG	< 0.01 UG/KG

Sigma-Aldrich Certificate of Analysis - Product 02650 Lot BCBF4568V Page 1 of 3

Certificate of Analysis (example)

Most Popular *TraceSELECT* Ultra Products

Cat. No.	Name	Description	Pack Sizes
02650	Nitric acid	≥65%, <i>TraceSELECT</i> Ultra, for ultratrace analysis	250 mL, 1L
16911	Hydrogen peroxide solution	≥30%, <i>TraceSELECT</i> Ultra, for ultratrace analysis	250 mL, 1 L, 5 L
96208	Hydrochloric acid	≥30%, <i>TraceSELECT</i> Ultra, for ultratrace analysis	250 mL, 1 L
14211	Water	<i>TraceSELECT</i> Ultra, ACS Reagent for ultratrace analysis	1 L
02658	Hydrofluoric acid	≥49%, <i>TraceSELECT</i> Ultra, for ultratrace analysis	250 mL, 1 L
77239	Sulfuric acid	≥95%, <i>TraceSELECT</i> Ultra, for ultratrace analysis	250 mL, 1 L



Inorganic Trace Analysis brochure

- Contains reagents and standards for sample preparation, calibration, and analysis.

Please find the complete product list at sigmaaldrich.com/traceselect