CERTIFICATE OF ACCREDITATION

Korea Institute of Geoscience and Mineral Resources

Accreditation No. : KT013

Corporation Registration No. : 160122-0001974

Address of Laboratory : (Branch site)124, Gwahak-ro, Yuseong-gu, Daejeon, Republic of Korea

Date of Initial Accreditation : March 15, 1995

Validity of Accreditation : May 25, 2023 ~ May 24, 2027

Scope of Accreditation : Attached Annex

Date of issue : May 25, 2023

This testing laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to Joint ISO-ILAC-IAF Communiqué).

CHIN CHONGWOOK

Head
Korea Laboratory Accreditation Scheme

No. KT013

02. Chemical Testing

02.004 Mine and Ceramic Related Products

Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
KS E 3076:2022	Mine and Ceramic Related Products	Methods for X-ray fluorescence spectrometric analysis of silica stone and silica sand	Silicon dioxide: (85.0 ~ 98.0) mass % Aluminium oxide: (0.20 ~ 9.0) mass % Ferric oxide: (0.06 ~ 0.80) mass % Potassium oxide: (0.10 ~ 0.90) mass % Titanium dioxide: (0.01 ~ 0.57) mass %	BS	N

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02. Chemical Testing

02.021 Water Quality

Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
ASTM D5673-16	Water Quality	Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry	Selenium (Se): 5.0 μg/L over	BS	N
Environmental Protection Agency Method 300.1:1997	Water Quality	Determination of Inorganic Anions in Drinking Water by Ion Chromatography	Fluoride (F^-): 0.1 mg/L over Chloride (Cl^-): 0.1 mg/L over Nitrite (NO_2^-): 0.1 mg/L over Nitrate (NO_3^-): 0.1 mg/L over Sulfate (SO_4^{2-}): 0.1 mg/L over	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
Environmental Protection Agency Method 6010C:2007	Water Quality	Inductively Coupled Plasma-Atomic Emission Spectrometry	Aluminum (Al): 30 μg/L over Barium (Ba): 10 μg/L over Boron (B): 10 μg/L over Cadmium (Cd) 30 μg/L over Calcium (Ca): 30 μg/L over Chromium (Cr): 30 μg/L over Cobalt (Co): 30 μg/L over Copper (Cu): 30 μg/L over Iron (Fe): 30 μg/L over Lead (Pb): 30 μg/L over Lithium (Li): 10 μg/L over Magnesium (Mg): 20 μg/L over Manganese (Mn): 10 μg/L over Molybdenum (Mo): 20 μg/L over Nickel (Ni): 20 μg/L over Phosphorus (P): 60 μg/L over Potassium (K): 50 μg/L over Selenium (Se): 50 μg/L over Silica (SiO_2): 30 μg/L over Sodium (Na): 30 μg/L over Strontium (Sr): 10 μg/L over Titanium (Ti): 30 μg/L over Vanadium (V): 10 μg/L over Zinc (Zn): 20 μg/L over	BS	N
KS I ISO 17294:2014	Water Quality	Water quality — Application of inductively coupled plasma mass spectrometry(ICP-MS)	Germanium (Ge): 0.3 μg/L over Selenium (Se): 10 μg/L over	BS	N
Standard Methods for the Examination of Water and Wastewater 24th Edition 2022	Water Quality	2540 B. Total Solids Dried from 103 to 105 ℃	(10 ~ 20 000) mg/L	BS	N

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End.