

## Certificate of Analysis

<b>Product</b>	Nitric Acid 70%	<b>Batch No.</b>	: 21 05 0441
<b>Grade</b>	VLSI	<b>Manufacturing date</b>	: 31/05/2021
<b>Code No.</b>	VL1137	<b>Best before</b>	: 05/2025

Items	Descriptions	Specifications	Test Results
1	Assay (by acidimetry)	69.0 – 70.0%	69.6% (w/w)
2	Appearance	Passes test	Passes test
3	Color (APHA)	7 max.	< 7
4	Residue after Ignition	1 ppm max.	< 1 ppm
5	Chloride (Cl)	0.08 ppm max.	< 0.08 ppm
6	Phosphate (PO <sub>4</sub> )	0.1 ppm max.	< 0.1 ppm
7	Sulfate (SO <sub>4</sub> )	0.2 ppm max.	< 0.2 ppm
8	Silicate (as Si)	0.1 ppm max.	< 0.1 ppm
9	Aluminium (Al)	20 ppb max.	< 20 ppb
10	Antimony (Sb)	1 ppb max.	< 1 ppb
11	Arsenic (As)	1 ppb max.	< 1 ppb
12	Barium (Ba)	5 ppb max.	< 5 ppb
13	Beryllium (Be)	1 ppb max.	< 1 ppb
14	Bismuth (Bi)	5 ppb max.	< 5 ppb
15	Boron (B)	5 ppb max.	< 5 ppb
16	Cadmium (Cd)	1 ppb max.	< 1 ppb
17	Calcium (Ca)	50 ppb max.	< 50 ppb
18	Chromium (Cr)	10 ppb max.	< 10 ppb
19	Cobalt (Co)	1 ppb max.	< 1 ppb
20	Copper (Cu)	5 ppb max.	< 5 ppb
21	Gallium (Ga)	1 ppb max.	< 1 ppb
22	Germanium (Ge)	5 ppb max.	< 5 ppb
23	Gold (Au)	1 ppb max.	< 1 ppb
24	Indium (In)	1 ppb max.	< 1 ppb
25	Iron (Fe)	50 ppb max.	< 50 ppb
26	Lead (Pb)	5 ppb max.	< 5 ppb
27	Lithium (Li)	1 ppb max.	< 1 ppb
28	Magnesium (Mg)	10 ppb max.	< 10 ppb
29	Manganese (Mn)	5 ppb max.	< 5 ppb
30	Molybdenum (Mo)	1 ppb max.	< 1 ppb
31	Nickel (Ni)	5 ppb max.	< 5 ppb
32	Platinum (Pt)	1 ppb max.	< 1 ppb
33	Potassium (K)	5 ppb max.	< 5 ppb
34	Silver (Ag)	5 ppb max.	< 5 ppb
35	Sodium (Na)	50 ppb max.	< 50 ppb
36	Strontium (Sr)	1 ppb max.	< 1 ppb
37	Tantalum (Ta)	1 ppb max.	< 1 ppb
38	Thallium (Tl)	1 ppb max.	< 1 ppb
39	Tin (Sn)	1 ppb max.	< 1 ppb
40	Titanium (Ti)	5 ppb max.	< 5 ppb
41	Vanadium (V)	5 ppb max.	< 5 ppb
42	Zinc (Zn)	10 ppb max.	< 10 ppb
43	Zirconium (Zr)	1 ppb max.	< 1 ppb
44	Particle/ml : 0.5 µm and greater	64 max.	< 64

This is to certify the above batch has been tested and complies with this specification.

Ladaphan.

Chemist

Acham.

Technical Manager