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# Manganese Nodule Nano-Pellet, pressed pellet  diameter 20 mm (Standard for solid-state microanalysis)

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| Art. ID | MY-NOD-P1-NP-LA-ICP-MS-LIBS-20MM |
| Unit | each (pressed pellet) |
| Deliverydetails | No Dangerous Good /not restricted |

Description

Pellet for LA-ICP-MS and LIBS application /// The principle behind LA-ICP-MS (Laser Ablation - Inductively Coupled Plasma - Mass Spectrometry) involves a laser beam removing (ablating) material from a sample and analysing its chemical composition in a mass spectrometer /// LIBS (Laser-Induced Breakdown Spectroscopy) uses a laser beam to interact with the sample. Due to the extreme heat of the laser (10,000 K and more) a plasma is formed. A plasma is a cloud of ions (charged atoms) and electrons (negatively charged particles). When this plasma collapses it emits light. Light is a mixture of different wavelengths. This light is then transferred through a fiberoptic cable to a spectrometer, which can precisely split the light into its respective wavelengths. The working principle of the LIBS-spectrometer is similar to a prism as it disperses the incomming light. Each element has several characteristic wavelengths. A detector is able to attribute an intensity to each of them.

| Text/Information | Analyte/Parameter | CAS number | Concentration/Value | Unit | Method | Source |
|---|---|---|---|---|---|---|
| | Na2O | | 2,15 ± 0,04 | g/100g | | |
| | MgO | [1309-48-4] | 3,17 ± 0,17 | g/100g | | |
| | Al2O3 | | 4,6 ± 0,23 | g/100g | | |
| | SiO2 | | 14,9 ± 0,4 | g/100g | | |
| | P2O5 | | 0,46 ± 0,02 | g/100g | | |
| | K2O | | 1,23 ± 0,09 | g/100g | | |
| | CaO | | 3 ± 0,2 | g/100g | | |
| | TiO2 | | 0,45 ± 0,02 | g/100g | | |
| | MnO | | 37,1 ± 1,3 | g/100g | | |
| | Fe2O3(T) | | 8,24 ± 0,22 | g/100g | | |
| | Lithium (Li) | [7439-93-2] | 140 ± 13 | µg/g | | |
| | Vanadium (V) | [7440-62-2] | 469 ± 22 | µg/g | | |
| | Cobalt (Co) | [7440-48-4] | 2190 ± 91 | µg/g | | |
| | Nickel (Ni) | [7440-02-0] | 12681 ± 387 | µg/g | | |
| | Copper (Cu) | [7440-50-8] | 11288 ± 479 | µg/g | | |
| | Zinc (Zn) | [7440-66-6] | 1522 ± 87 | µg/g | | |
| | Arsenic (As) | [7440-38-2] | 88 ± 12 | µg/g | | |
| | Rubidium (Rb) | [7440-17-7] | 24,7 ± 1,7 | µg/g | | |
| | Strontium (Sr) | [7440-24-6] | 660 ± 29 | µg/g | | |
| | Yttrium (Y) | [7440-65-5] | 93 ± 10 | µg/g | | |
| | Zirconium (Zr) | [7440-67-7] | 278 ± 33 | µg/g | | |
| | Niobium (Nb) | [7440-03-1] | 23 ± 5 | µg/g | | |
| | Molybdenum (Mo) | [7439-98-7] | 632 ± 116 | µg/g | | |

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| | Antimony (Sb) | [7440-36-0] | 54,1 ± 3,6 | µg/g |
| | Barium (Ba) | [7440-39-3] | 2564 ± 65 | µg/g |
| | Lanthanum (La) | [7439-91-0] | 111 ± 21 | µg/g |
| | Cerium (Ce) | [7440-45-1] | 319 ± 24 | µg/g |
| | Praseodymium (Pr) | [7440-10-0] | 30,4 ± 2 | µg/g |
| | Neodymium (Nd) | [7440-00-8] | 135 ± 9 | µg/g |
| | Samarium (Sm) | [7440-19-9] | 33,4 ± 2,1 | µg/g |
| | Europium (Eu) | [7440-53-1] | 7,8 ± 0,3 | µg/g |
| | Gadolinium (Gd) | [7440-54-2] | 30,7 ± 1,2 | µg/g |
| | Terbium (Tb) | [7440-27-9] | 4,6 ± 0,3 | µg/g |
| | Dysprosium (Dy) | [7429-91-6] | 26,8 ± 1 | µg/g |
| | Holmium (Ho) | [7440-60-0] | 5 ± 0,6 | µg/g |
| | Erbium (Er) | [7440-52-0] | 13,7 ± 0,8 | µg/g |
| | Thulium (Tm) | [7440-30-4] | 2 ± 0,3 | µg/g |
| | Ytterbium (Yb) | [7440-64-4] | 12,9 ± 0,5 | µg/g |
| | Lutetium (Lu) | [7439-94-3] | 1,9 ± 0,2 | µg/g |
| | Hafnium (Hf) | [7440-58-6] | 86 ± 18,4 | µg/g |
| | Tantalum (Ta) | [7440-25-7] | 0,4 ± 0,3 | µg/g |
| | Tungsten (W) | [7440-33-7] | 58 ± 3 | µg/g |
| | Thallium (Tl) | [7440-28-0] | 191 ± 22 | µg/g |
| | Lead (Pb) | [7439-92-1] | 434 ± 23 | µg/g |
| | Bismuth (Bi) | [7440-69-9] | 4,8 ± 0,3 | µg/g |
| | Thorium (Th) | [7440-29-1] | 15,5 ± 0,5 | µg/g |
| | Uranium (U) | [7440-61-1] | 4,1 ± 0,4 | µg/g |