**Laboratory Name: Laboratory " Metallurgy of Non-Ferrous metals"**

1. **Objectives of the Scientific Laboratory: Conducting hydrometallurgical processes**
2. **List of Laboratory Equipment**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **№**  | **Equipment Name** | **Brief Equipment Description** | **Tasks Performed on the Equipment** | **Year of Manufacture** | **Certification (yes/no)** | **Verification Date** | **Equipment Notes** |
|  | **Top-Drive Mixer** | **Maximum volume, H2O, liters: 20****Viscosity range of the sample, mpas: 0-10000****Rotational torque range, rpm: 100-2500****Control type: Digital****Internal diameter of the chuck, mm: 0.5-10****4-blade attachment****Dimensions of the working unit, mm: 90×240×148****Overall dimensions, m: 300×410×800****Stand dimensions, mm: 200×300****Height of the stand, mm: 800****Power supply frequency, Hz: 50/60****Power supply voltage, V: 100-240****Weight, kg: 7.4** | **Conducting the mixing of solutions of different media** | **2023** | **no** | **May 2023** | **no** |
|  | **Rotary Evaporator** | **Evaporating flask: 1000 ml****Receiving flask: 1000 ml****Rotational speed range: 20-280 rpm****Heating temperature: RT – 180 °C****Type of vertical refrigerator****Bath lifting: automatic****Lifting height: 150 mm****Rotation direction: reversible****Timer: 1-999 min****Dimensions: 465×457×583 mm****Weight: 15 kg** | **The device performs the distillation of liquids with different boiling temperatures or solvents under reduced nominal pressure conditions** | **2023** | **No** | **2023** | **no** |
|  | **Small Induction Furnace** | **Temperature in the crucible – 500-1500°C****Crucible capacity – 70 cubic cm** | **For melting colored and precious metals** | **2013** | **no** | **from 12.06.2013** | **no** |
|  | **Orbital and Linear Shaker** | **Weight: 13.5 kg****Speed control range: 100-350 rpm****Time setting range, min: 1 min – 19 h 59 min****Display: LCD display****Additional relative humidity: 80%****Additional ambient temperature: 5 - 40 °C****Protection class: IP21****Maximum load: with platform 7.5 kg** | **performs uniform rotational movements, used for working with solutions** | **2023** | **no** | **2023** | **no** |
|  | **Magnetic Separator** | **Maximum productivity on material with particle size -4 +1 mm, kg/h, not less than: 20****Particle size of separated materials, mm: -4 +0.1****Rotation frequency of the magnetic system, rpm: 44 ± 5****Stroke (vertical displacement magnitude) of the magnetic system, mm: 10****Amplitude of vibrations of the vibrohammer, mm: from 0 to 2****Maximum power consumption from the AC power supply voltage (220±20)V at a frequency of (50±0.5)Hz, VA, not more than: 100****Voltage of the AC power supply, V: 220±22****Frequency of the AC power supply, Hz: 50±1****Weight of the product, kg, not more than: 15****Overall dimensions of the product, mm, LWH, not more than: 560270340** | **Used for separating the metallic component from ore materials (enrichment)** | **2023** | **no** | **-** | **no** |
|  | **Flotation Machine** | **Chamber capacity, useful, liters: 0.5; 0.75; 1.0****Impeller diameter, mm: 55****Impeller rotation frequencies, s-1: 15-40****Air intake by the impeller at the maximum rotation frequency, l/s, not less than: 0.05****Drive power, kW: 0.18****Voltage of the power supply network, V: 220****Overall dimensions, mm:****Length: 460****Width: 380****Height: 630****Weight, kg: 28** | **Conducting enrichment by flotation in laboratory conditions** | **2023** | **no** | **2023** | **no** |
|  | **Nutsche Filter** | **Net weight, kg: 3****Filtration surface area, sq.m: 0.015****Volume of suspension receiver, liters: 1.5****Volume of filtrate receiver, liters: 3****Dimensions, (WxDxH), mm: 190x210x350****Connection to vacuum, Du, mm: 6** | **Nutsche filters are designed to purify solutions from impurities by filtration** | **2023** | **No** | **May 2023** | **no** |
|  | **Muffle Furnace** | **Automatic temperature control range – from 50 to 1300 °C****Time for electric furnace to heat up to nominal temperature without residue – 75 minutes****Temperature stability in established thermal mode without residue - ± 1 °C** | **For heat treatment, drying various samples** | **2015** | **no** | **October 2015** | **Muffle Furnace** |

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