

# Central Office of Measures

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## Mass Laboratory

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### Tasks:

Maintenance and development of national standards of measurement units and reference standards, and ensuring their traceability with international standards and standards of other countries through calibration and participation in international comparisons.

Dissemination of the mass unit according to the new kilogram definition with the least possible uncertainty for domestic and foreign entities.

Ensuring measurement traceability in the field of: mass, force, torque, hardness, density, viscosity, surface tension, static volume, pressure and mass ethanol concentration with measurement traceability.

Carrying out tasks of the Notified Body in the scope of conducting the conformity assessment process with the requirements of the NAWID and MID Directives.

Issuing certificates of calibration and expertise of measuring instruments in the field of mass and related quantities

Production of certified reference materials for density, viscosity, surface tension and mass ethanol concentrations.

Conducting national interlaboratory comparisons as a reference laboratory.

Carrying out research and development works in the field of mass and related quantities.

### Services:

#### Mass standards and Weighing Mass Instruments Section

- Calibration and testing of instruments for measuring mass, including mass standards, reference standards of force and pressure, non-automatic and automatic weighing instruments, and parts of instruments such as indicators, standard instruments to measure grain density.

#### Force and Hardness Section

- Calibration of force measuring instruments, including force transducers, torque transducers and reference torque wrenches, force measuring devices and static testing machines, calibration of hardness measuring instruments, diamond indenters, hardness measuring instruments including reference blocks according to the hardness scales: Brinell, Rockwell and Vickers.

#### Physicochemistry Section

- Calibration of density measuring instruments, such as oscillation type density meters, glass and metal pycnometers, hydrometers, hydrostatic balances, liquid and solid samples, calibration of viscosity measuring instruments, such as glass capillary viscometers, Höppler's viscometers, Stabinger's viscometers, rotational viscometers, flow cups, production of certified reference materials: standards of density, viscosity and surface tension, calibration of static volume measuring instruments, such as flasks, graduated pipettes, measuring cylinders, burettes, piston

pipettes, containers.

#### Thermodynamics Section

- Calibration of pressure measuring instruments, including pressure balances and piston – cylinder pressure gauges, electronic pressure gauges, calibration of instruments for measuring ethanol in the exhaled human breath, including ethanol standards and breath analyzers.

#### Certification Group

- Carrying out process of conformity assessment and type approval.
- Coordination of testing and checks of measuring instruments included in the conformity assessment and legal metrological control, including:
  - non-automatic weighing instruments,
  - continuous totalizing automatic weighing instruments (belt weighers),
  - automatic catchweighing instruments,
  - automatic gravimetric filling instruments,
  - automatic rail-weighbridges,
  - discontinuous totalizing automatic weighing instruments (totalizing hopper weighers),
  - automatic instruments for weighing road vehicles in motion and measuring axle loads,
  - development of new type of measuring instrument – High Speed Weighing in Motion,
  - 20 L, 1 L and 1/4 L utility instruments to measure grain density,
  - tyre pressure gauges for motor vehicles,
  - oscillation type density meters for measuring liquid density (from 450 kg/m<sup>3</sup> to 2000 kg/m<sup>3</sup>),
  - glass hydrometers – alcoholometers and alcohol hydrometers,
  - glass hydrometers – densimeters for liquids other than alcohol,
  - mass standards (weights) of accuracy class: E1, E2, F1, F2, M1.

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