CCT/2022-37

CLASSIFICATION OF SERVICES IN THERMOMETRY

February 2022

METROLOGY AREA: THERMOMETRY

BRANCH: TEMPERATURE

1. **Temperature – Items used for defining ITS-90**
   - **1.1 Primary fixed-point cells**
     - 1.1.1 Cells for contact thermometry
     - 1.1.2 Cells for radiation thermometry
   - **1.2 Complete apparatus realizing fixed-points**
     - 1.2.1 Apparatus for contact thermometry
     - 1.2.2 Apparatus for radiation thermometry
   - **1.3 Standard platinum resistance thermometers (SPRTs)**
     - 1.3.1 Capsule-type SPRTs
     - 1.3.2 Long-stem SPRTs including HTSPRTs
   - **1.4 Standard radiation thermometers**
     - 1.4.1 Standard radiation thermometers

2. **Temperature – Items used for disseminating ITS-90 and PLTS 2000**
   - **2.1 Secondary fixed-point cells and apparatus for contact thermometry**
     - 2.1.1 Secondary fixed-points and apparatus for contact thermometry
   - **2.2 Resistance thermometers**
     - 2.2.1 Rhodium-iron resistance thermometers
     - 2.2.2 Platinum resistance thermometers (PRTs)
     - 2.2.3 Thermistors and other resistive thermometers
   - **2.3 Thermocouples**
     - 2.3.1 Noble-metal thermocouples
     - 2.3.2 Base-metal thermocouples
     - 2.3.3 Pure-metal thermocouples
   - **2.4 Liquid-in-glass thermometers**
     - 2.4.1 Liquid-in-glass thermometers
   - **2.5 Radiation thermometry**
     - 2.5.1 Secondary fixed-point blackbody cells and complete instruments
     - 2.5.2 Variable temperature blackbody radiation sources
     - 2.5.3 Strip lamps
     - 2.5.4 Radiation thermometers and visual optical pyrometers
   - **2.6 Other thermometers**
     - 2.6.1 Air temperature sensors
     - 2.6.2 Other thermometers
   - **2.7 Temperature sensors with display unit**
     - 2.7.1 Temperature sensors with display unit
   - **2.8 Other measurement services**
     - 2.8.1 Bridge linearity
     - 2.8.2 Compensation wires for cold junction
     - 2.8.3 Wires for melting-point measurements for thermocouples
     - 2.8.4 Temperature indicators
     - 2.8.5 Phase-transition temperature of reference materials
     - 2.8.6 Dry-well block calibrators

7. Temperature – Items used for disseminating thermodynamic temperature
- **7.1 Radiation thermometry**
  - 7.1.1 Fixed-point blackbody cells and apparatus
  - 7.1.2 Radiation thermometers
  - 7.1.3 Variable temperature blackbody radiation sources

BRANCH: HUMIDITY

3. Hygrometers
- **3.1 Dew-point hygrometers**
  - 3.1.1 Dew-point hygrometers
- **3.2 Psychrometers**
  - 3.2.1 Psychrometers
- **3.3 Relative humidity sensors**
  - 3.3.1 Relative humidity sensors
- **3.4 Other hygrometers**
  - 3.4.1 Other hygrometers

4. Dynamic generators
- **4.1 Dew-point generators**
  - 4.1.1 Dew-point generators
- **4.2 Relative humidity generators**
  - 4.2.1 Relative humidity generators
- **4.3 Flow mixing**
  - 4.3.1 Flow mixing
- **4.4 Permeation tube, diffusion tube**
  - 4.4.1 Permeation tube, diffusion tube

5. Static generators
- **5.1 Salt solutions (saturated, unsaturated)**
  - 5.1.1 Salt solutions (saturated, unsaturated)
- **5.2 Reference gases**
  - 5.2.1 Reference gases

BRANCH: THERMOPHYSICAL QUANTITIES

6. Thermophysical quantities
- **6.1 Thermal transport**
  - 6.1.1 Thermal conductivity
  - 6.1.2 Thermal diffusivity
- **6.2 Caloric quantification**
  - 6.2.1 Specific heat capacity
  - 6.2.2 Heat of fusion
  - 6.2.3 Calorific value
- **6.3 Radiative quantification**
  - 6.3.1 Spectral emissivity
  - 6.3.2 Total emissivity
- **6.4 Thermo-mechanical quantification**
  - 6.4.1 Thermal expansion coefficient