



Approved by State Bureau of Technical Supervision  
The People's Republic of China  
GBW 13231—GBW 13238



## Certificate of Certified Reference Material

### Melting Point Certified Reference Material



Sample Number

Date of Certification

Date of Expiration

Tian jin Research Institute of Metrology



Tianjin China



Melting point reference materials are calibration standard of temperature -which are used in melting point instruments and melting point measurement, and powerful means to ensure that the measured values of a quantity are accurate and consistent. This material can be adopted mainly at instrument making plant, chemical industry, medicine and branch of measurement andsoon.

### 1. Preparation of Material

Melting point reference material be used highly purified substances or to undergo zone refining substances.

### 2. Certified Value and Uncertainty

Compound	Number	Tmp	(°C)	T <sub>cmpl</sub> (°C)			
		F = 1 ΔT = 0	Uncertainty	0.20 °C/min	Uncertainty	1.0 °C/min	Uncertainty
P-Nitrotoluene	GBW13231c	51.58	0.05	52.01	0.11	52.56	0.20
Naphthalene	GBW13232c	80.24	0.05	80.58	0.11	81.09	0.20
Benzoic acid	GBW13233b	122.35	0.05	122.85	0.11	123.37	0.20
1,6-AcJipic acid	GBW13234c	151.63	0.05	152.55	0.11	153.16	0.20
Anisic acid	GBW13235b	183.36	0.05	184.15	0.11	184.74	0.20
Anthracene	GBW13236c	215.94	0.05	216.51	0.11	217.11	0.20
P-Nitrobenzoic acid	GBW13237c	239.42	0.05	240.57	0.11	241.33	0.20
Anthraquinone	GBW13238d	284.63	0.05	285.15	0.11	285.69	0.20

Note: F—melted fraction;

ΔT—ambient temperature of sample decreased by sample temperature;

T<sub>mp</sub>—melting point;

T<sub>cmpl</sub>—capillary melting point of sample all liquefaction temperature。

### 3. Certification Method

The certification method of melting points has been carried out according -to the definition of melting points directly.

Time-temperature curves have been obtained under the condition that the quantity of heat the samples absorbed or gave out kept constant from beginning, to end.

The certification of capillar-melting point used capillary melting point method. Rate of temperature increase was controlled precisely. All liquefaction temperature was considered certification.

### 4. Homogeneity and Stability Assessment

Material homogeneity was evaluated by time-temperature curve methods and precise capillary melting point method. Using variance F test, the re-sults (F<F<sub>α</sub>)is not differ significantly and this material could be considered homogeneous. The quantity of samples required in the measurement is about 2mg.

Material stability was evaluated using two measuring melting points in one year, by time-temperature curve methods, proved stability is better.

### 5. Instruction for Use

Cut a tip of capillary tube with colour demand according to measurement prepare samples. This difference between certified value and measured value as the corrected value of measurement. Different temperature can be adopted insertion method or correction curve.

### 6. Package and Storage

The material use capillary of two types charged samples, carton package. The material should be kept in dry circumstance.