

Certificate of the Reference Material

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Name of the Material : Benzoic Acid
Material Code : UME CRM 1505
Issue Date : 18.06.2026
Revision Date : 18.06.2026 (Revision history can be found on the last page)
Validity Period of the Certificate : 12 months from the sales date
Certified Values :

Parameter	Certified Value ^[2] (J/g)	Uncertainty ^[2,3] (J/g)
Gross Calorific Value ^[1]	26469	36

[1] The certified value has been determined by the oxygen bomb method using isoperibol calorimetry.

[2] The certified value and the uncertainty are traceable to the International System of Units (SI).

[3] The expanded uncertainty of certified value includes characterization, homogeneity, stability components and is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95 %. The standard uncertainty of measurement has been determined in accordance with GUM "Guide to the Expression of Uncertainty in Measurement".

TÜBİTAK UME has been accredited by TÜRKAK as a reference material producer under the accreditation number AB-0001-RM in accordance with the TS EN ISO 17034:2018 standard.

Turkish Accreditation Agency (TÜRKAK) is a signatory to the European Cooperation for Accreditation (EA) Multilateral Agreement (MLA) and the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of reference material certificates.

Sales Date



Assoc. Prof. Mustafa ÇETİNTAŞ
Director

The following pages are an integral part of the certificate. The use of current certificate is customers' responsibility.

Most recent certificate can be downloaded from www.ume.tubitak.gov.tr.

Description

The material consists of 50 tablets in an amber coloured glass bottle, each containing approximately one gram of benzoic acid. Additional information about the preparation of the material is presented in the certification report.

Intended Use

This material is intended to be used in the calibration of calorimeters used for calorific value measurements, validation of methods and quality control activities in this field.

Instructions for Use

During the opening and use of the bottle, all precautions must be taken to prevent contamination and moisture uptake of the material, and the bottle cap must not be left open for a long time.

Each tablet in the bottle is produced in a unit weight (1.0 ± 0.1) g that will not damage the calorimeter combustion chambers. The user can use the appropriate amount of material in the combustion chamber according to the calorific value measurement standard used. This material can be safely dispatched under conditions where the temperature does not exceed 50 °C for up to four weeks, i.e. at ambient temperature without applying any cooling elements.

Storage Conditions

The material should be stored at (18 ± 5) °C in dark environment.

TÜBİTAK UME cannot be held responsible for changes that might happen to the material at customer's premises due to noncompliance with the instructions for use, and the storage conditions given.

Safety Information

Contact of the material with skin and eyes should be avoided. After the calorific value measurement is carried out, the gases formed in the bomb must not be inhaled. It is strongly recommended that the material must be handled and disposed according to the safety guidelines where applicable. Please refer to the Safety Datasheet before any use of the material.

Participants

Information about the laboratory participated in the characterization study is given in the following table.

Laboratory	Address
TÜBİTAK UME	TÜBİTAK Gebze Yerleşkesi, Barış Mahallesi, Dr. Zeki Acar Caddesi No.1, 41470 Gebze - Kocaeli / Türkiye

Methods and/or Techniques Used for the Determination of the Certified Values

Information about the technique used in the characterisation studies is presented in the following table.

Method/Technique	Parameter
Oxygen Bomb Method (Calorimeter)	Gross Calorific Value

Revision History

Date	Remarks
18.06.2026	First issue.