



# CERTIFICATE OF ANALYSIS

**Catalog No:** FRS-012S

**Description:** Hexabromobenzene (mich)

**Lot:** 217071351

**Solvent:** Toluene

**Hazards:** Refer to SDS for complete safety information

**Date Certified:** Jul 21, 2017

**Expiration:** Jul 21, 2027

**Sample Size:** 1 mL

**Components:** 1

**Storage Condition:** Ambient (>5 °C)



**Signal Word:** Danger

## Certified Reference Material



Component	CAS #	Purity % (GC/FID)	Prepared Concentration <sup>2</sup> (µg/mL)	Certified Analyte Concentration <sup>1</sup> (µg/mL)
Hexabromobenzene	87-82-1	98.0	100.2	98.2

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

<sup>2</sup> All weights are traceable through NIST, Test No. 822-275872-11

<sup>1</sup> Certified Analyte Concentration = Purity x Prepared Concentration.


The Uncertainty associated with the certified concentration reported on this certificate is  $\pm 2.4\%$ . This value is the combined expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information

Hazard Information: Please refer to the SDS for information regarding the hazards associated with using this material.

This product was prepared according to in-house procedures and is guaranteed to be homogeneous.

Certified By:   
Larry Decker, Organic QC Manager

**1. Quality Standards:**

ISO 17034:2016 – General Requirements for the Competence of Reference Material Producers ANAB Certificate Number AR-1463

ISO/IEC 17025:2017 – General Requirements for the Competence of Testing And Calibration Laboratories ANAB Certificate Number AT-1339

ISO 9001:2015 – Quality Management System – Requirements  
Eagle Registrations Certificate Number 3774

**2. Intended Use:** The product covered by this certificate is designed for calibration or for use in quality control procedures for the specified chemical compounds listed on the reverse side. This product can be used for quantification and/or identification. This product can also be used as a reference material to validate analytical procedures, subject to the conditions under Section 7.

**3. Manufacturing:** All balances are calibrated daily using an in-house procedure with weights that are compared annually to master weights and traceable to NIST. The balances are also calibrated annually by an ISO/IEC 17025 accredited calibration laboratory. Please refer to the NIST test number listed on the front of this certificate. Class A glassware is used in the manufacture and quality control of all standards. Good Laboratory Practices have been used throughout the preparation of this Standard.

**4. Homogeneity:** This product is sufficiently homogeneous and any sample size would be within the uncertainty budget.

**5. Stability:** The manufacturer guarantees the stability of this solution through the expiration date stated on the label, when handled and stored according to the conditions stated on the label

**6. Uncertainty:** The uncertainty values as stated on the face of this certificate have been determined using the EURACHEM/CITAC Guide. We report a combined expanded uncertainty equal to the positive square root of the total variance of the uncertainty of the components using the following formula:  $u_a = \sqrt{(u(V))^2 + (u(m))^2 + (u(IV))^2 + (u(RO))^2}$  This formula represents uncertainty components from the mass, volume, short-term stability, long-term stability and homogeneity factors associated with the production of this product. The expanded uncertainty, assumes a normal distribution and a coverage factor of k=2 is chosen using approximately a 95% confidence level.

**7. Legal Notice and Limit of Liability:** This product is for routine laboratory analysis and research purposes only. The company's liability will be limited to replacement of product or refund of purchase price. Notice of claims must be made within thirty (30) days from date of delivery.