

Certificate of Analysis

CERTIFIED REFERENCE MATERIAL

9 components; 10ug/ml each of Atrazine [CAS:1912-24-9] ; Atrazine-desethyl [CAS:6190-65-4] ; Atrazine-desisopropyl [CAS:1007-28-9] ; Cyanazine [CAS:21725-46-2] ; Propazine [CAS:139-40-2] ; Sebuthylazine [CAS:7286-69-3] ; Simazine [CAS:122-34-9] ; Terbutylazine [CAS:5915-41-3] ; Sebuthylazine-desethyl [CAS:37019-18-4] in Acetone

Lot N: 755004
Barcode: 92755383

Ref N: EA6B.10.A.1.5

Certification Date: 31.05.2021

Component	Certified Value* and uncertainty [µg/ml]	CAS	Chemical Formula
Atrazine	9.991 ± 0.121	1912-24-9	C ₈ H ₁₄ ClN ₅
Atrazine-desethyl	10.123 ± 0.219	6190-65-4	C ₆ H ₁₀ ClN ₅
Atrazine-desisopropyl	10.064 ± 0.129	1007-28-9	C ₅ H ₈ ClN ₅
Cyanazine	10.012 ± 0.160	21725-46-2	C ₉ H ₁₃ ClN ₆
Propazine	10.133 ± 0.181	139-40-2	C ₉ H ₁₆ ClN ₅
Sebuthylazine	10.088 ± 0.122	7286-69-3	C ₉ H ₁₆ ClN ₅
Simazine	10.034 ± 0.112	122-34-9	C ₇ H ₁₂ ClN ₅
Terbutylazine	10.140 ± 0.139	5915-41-3	C ₉ H ₁₆ ClN ₅
Sebuthylazine-desethyl	10.040 ± 0.118	37019-18-4	C ₇ H ₁₂ ClN ₅

* WQP 5.15.1/2 The certified value was obtained gravimetrically and confirmed experimentally by GC/MS or HPLC

Density 0.7886 g/cm³ at 20°C

Starting Material	Purity, Batch
Atrazine	99.2% (41411261)
Atrazine-desethyl	99.2% (41384398)
Atrazine-desisopropyl	99.02% (41351789)
Cyanazine	99.5% (41387733)
Propazine	99.7% (41398524)
Sebuthylazine	95.5% (41391259)
Simazine	99.9% (41384985)
Terbutylazine	99.5% (41403990)
Sebuthylazine-desethyl	99.9% (41417904)

Storage Conditions: Store in a refrigerator at temperatures between 2°C to 8°C

Expiry Date: 30.06.2022

Concept of Certification and traceability statement:

This certified reference material is produced by gravimetric measurement and dissolving the individual substances in Acetone .
The reported expanded uncertainty of measurement 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 EA 4/02 and incorporates the uncertainties of the raw-material purity, the mass and the volume.
The metrological traceability is defined as the "property of a measurement result whereby the result can be related to a reference through a documented unbroken chain of calibrations, each contributing to the measurement uncertainty".
The metrological traceability is ensured through gravimetric measurement and dissolving of certified reference material/s (traceable to SI) from laboratories/producers, accredited according to ISO 17034.
The measurement results are traceable to SI. All analytical balances used for the preparation of the solution are calibrated yearly under an in-house procedure with class E1 and class E2 analytical weights, traceable to SI (DKD), and are checked daily.
Class A laboratory glassware is used.
The results from temperature measurement are traceable to SI. The thermometers used for solution's calibration are calibrated from an ISO 17025 accredited laboratory. The ambient conditions are controlled with a hygrometer calibrated from an ISO 17025 accredited laboratory.



Both, purity of the starting materials and solvent, were checked using appropriate analytical instrument.

Intended use: For Laboratory Use Only

This CRM is intended for:
Calibration of TLC, GC/FID, GC/TCD, GC/ECD, GC/MS, GC/MS/MS, LC/UV, LC/MS and LC/MS/MS
Validation of analytical methods
Preparation of "working reference samples"
Detection limit and linearity studies
This statement is not intended to restrict the use for other purposes.

Instructions for the correct use of this certified reference material:

This CRM can be used directly or can be diluted in an appropriate solvent. Only a clean class A glassware should be used. Do not pipet from container. Obtained concentration (in mg/l) after dilution is a result from the multiplication of certified value of CRM concentration and the CRM's volume used for dilution and divided into the flask's volume used for dilution. For quantitative analysis, we recommend analyzing this mixture separately, without mixing it with other solutions, to ensure accurate results for every compound.

Stability and storage:

This CRM is with a guaranteed stability until $\pm 5\%$ of the certified concentration for a period of 12 months. Stability is guaranteed of an unopened original packaging stored, as written in the section: Storage Conditions. Even if the product is stable at normal laboratory conditions, in order to increase its stability, we highly recommend it to be stored in a refrigerator. The product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to a product stored after opening.

Hazardous situation:

The normal laboratory safety precautions should be observed when working with this RM. Further details for the handling of this RM are available in a safety data sheet.

Level of homogeneity

This solution was mixed according to an in-house procedure (MQP 5.13.1) and is guaranteed to be homogeneous. To ensure sufficient homogeneity of the sample prior to use thoroughly mix by inversion or sonicate.

Names of certifying officers:

Laboratory:  Margarita Dimitrova

Manager:  Krassimira Taralova

This document QF 5.17.1/1 version 1 is designed and the certified value(s) and uncertainty(ies) are determined in accordance with ISO Guide 31, ISO Guide 35, and Eurachem / CITAC Guides

This certificate relates solely to the lot number given above.
All processes (including generating of this certificate) are completely controlled by the specialized Computer-Aided-Manufacturing (CAM) software.

This Certified Reference Material was produced under a quality management system that is:
- Registered to ISO 9001 Quality Management System (Lloyd's Register Quality Assurance Ltd Cert No 0039638)
- Accredited according to ISO/IEC 17025 – Testing (ANAB Cert No AT-1836)
- Accredited according to ISO 17034 - Reference Material Producer (ANAB Cert No AR-1835)

Additional Information

Gravimetric Data

Component	Purity %	Source Lot No	Weighed quantity, g	Final quantity, $\text{kg} \cdot 10^{-3}$	Bulk/ Standard Solution lot No	Concentration mg/kg	Chemist ID
Atrazine	99.2	41411261	0.02413	3.1034	91739117	7713.1	AS
		91739117	0.129	7.8877	92750791	126.145	PA
		92750791	1.188	11.8283	92755383	12.6696	PA
Atrazine-desethyl	99.2	41384398	0.00924	2.1621	91738264	4239.4	AS
		91738264	0.2378	7.8877	92750791	127.812	PA
		92750791	1.188	11.8283	92755383	12.8370	PA
Atrazine-desisopropyl	99.02	41351789	0.02206	2.6851	91723949	8135.2	AS
		91723949	0.1232	7.8877	92750791	127.066	PA
		92750791	1.188	11.8283	92755383	12.7622	PA
Cyanazine	99.5	41387733	0.01514	3.3040	91729309	4559.4	AS
		91729309	0.2187	7.8877	92750791	126.417	PA
		92750791	1.188	11.8283	92755383	12.6970	PA

Propazine	99.7	41398524	0.01252	2.6877	91738271	4644.3	AS
		91738271	0.2173	7.8877	92750791	127.946	PA
		92750791	1.188	11.8283	92755383	12.8505	PA
Sebuthylazine	95.5	41391259	0.02614	3.3047	91729613	7554.0	AS
		91729613	0.133	7.8877	92750791	127.373	PA
		92750791	1.188	11.8283	92755383	12.7930	PA
Simazine	99.9	41384985	0.03028	4.1289	91739070	7326.3	AS
		91739070	0.1364	7.8877	92750791	126.692	PA
		92750791	1.188	11.8283	92755383	12.7246	PA
Terbuthylazine	99.5	41403990	0.02088	2.7258	91733528	7621.8	AS
		91733528	0.1325	7.8877	92750791	128.034	PA
		92750791	1.188	11.8283	92755383	12.8593	PA
Sebuthylazine-desethyl	99.9	41417904	0.02636	3.1394	91736543	8388.1	AS
		91736543	0.1192	7.8877	92750791	126.762	PA
		92750791	1.188	11.8283	92755383	12.7316	PA

