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CONFIRMATION

of Product Conformity (QAL1)

Approved AMS:	SM-5 for Hg
Manufacturer:	ENVEA GmbH (Mercury Instruments GmbH) Liebigstr. 5 85757 Karlsfeld Germany
Test Institute::	TÜV Rheinland Energy & Environment GmbH

This is to certify that the AMS has been tested according to the standards

EN 15267-1 (2009), EN 15267-2 (2023), EN 15267-3 (2023), as well as EN 14181 (2014).

The AMS underwent independent expert testing and was accepted.
This confirmation is valid up to the publication of the certificate,
but no longer than 6 months from the date of issue
(this document contains 4 pages).

This confirmation is valid until: 30 April 2026

TÜV Rheinland Energy & Environment GmbH
Cologne, 4 July 2025

i. V. Dipl.-Ing. G. Baum

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Test institute accredited to EN ISO/IEC 17025 by DAkkS (German Accreditation Body).
This accreditation is limited to the accreditation scope defined in the enclosure to certificate D-PL-11120-02-00.

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Test Report:	EuL/21246513/C dated 20 February 2025
Initial certification:	11 April 2022
Expiry date:	30 April 2026

Approved application
The tested AMS is suitable for use at plants according to Directive 2010/75/EC, chapter III (combustion plants / 13th BImSchV:2021), Directive 2010/75/EC and chapter IV (waste incineration plants / 17th BImSchV:2023). The measured ranges have been selected so as to ensure as broad a field of application as possible.

The suitability of the AMS for this application was assessed on the basis of a laboratory test and a seven month field test at a waste incineration and a two month field test at power plant.

The AMS is approved for an ambient temperature range of +5 °C to 40 °C.

The notification of suitability of the AMS, performance testing and the uncertainty calculation have been effected on the basis of the regulations applicable at the time of testing. As changes in legal provisions are possible, any potential user should ensure that this AMS is suitable for monitoring the emission limit values relevant to the application.

Note
The legal regulations mentioned do not correspond to the current state of legislation in every case. Each user should, if necessary, in consultation with the competent authority, ensure that this AMS meets the legal requirements for the intended use. In addition, it cannot be ruled out that legal regulations governing the use of a measuring device for emission monitoring may change during the lifetime of the certificate.

Basis of the confirmation
This confirmation is based on:

- Test report EuL/21246513/C dated 20 February 2025 issued by TÜV Rheinland Energy & Environment GmbH
- The ongoing surveillance of the product and the manufacturing process
- Expert testing and approval by an independent body
- Suitability announced by the relevant body.

AMS designation:
SM-5 for Hg

Manufacturer:
ENVEA GmbH, Karlsfeld, Deutschland

Field of application:
For plants according to the 17th BImSchV

Measuring ranges during performance testing:

Component	Certification range	additional range				Unit
Hg	0 - 5	0 - 30	0 - 45	0 - 100	0 – 1,000	µg/m³

Software version:
Software System: 1.42
Software Display: 2
Software Sonde: 2.07

Restrictions:
none

Notes:
1. The maintenance interval is three months.
2. Moist test gases shall be used when testing Hg.
3. An external test gas generator shall be used for regular check of reference point in maintenance interval.
4. the length of the sample gas line was 15 m in the laboratory test and 35 m in the field test.
5. From system software version 1.22, the measuring system has digital interfaces of type Modbus TCP/IP and Modbus RTU in accordance with VDI 4201.
6. Software version 1.07 can also be used for the probe of the SM-5 measuring system in addition to the software versions already announced.
7. Supplementary test (Extension of the area of application of the measuring system, introduction of a digital interface) to the announcement of the Federal Environment Agency of 28 June 2022 (BAnz AT 28.07.2022 B4 chap.. I No. 2.1).

Test Institute:
TÜV Rheinland Energy & Environment GmbH, Cologne
Addendum to audit report no.: 936/21246513/B dated 18 May 2022
Report no.: EuL/21246513/C dated 20 February 2025

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Tested product

This confirmation applies to automated measurement systems conforming to the following description:

The SM-5 measuring system is a continuously operating, extractive mercury measuring device for recording the emissions of total mercury, i.e. the sum of elemental mercury, ionic mercury and mercury compounds.

The test gas is continuously conveyed to the analyser cabinet via a sampling probe heated to 200 °C with a hot filter and via a sampling line heated to 180 °C. In the analyser cabinet, the test gas first flows through a heat reactor. There, at a temperature of about 950°C, the mercury compounds are broken down and ionic mercury is converted into the elemental form. The test gas then flows through an acid absorber and is dried in a gas cooler. In turn, a partial flow is alternately sucked through the detector - directly or via an Hg absorber.

The measuring principle used to determine the mercury concentration is the resonance absorption of the Hg atoms by UV radiation of wavelength 253.7 nm (atomic absorption spectrometry, AAS). The measurement itself takes place in a cycle of 1 min.

The measuring system comprises the following components:

- Sampling system (manufacturer: M&C; type: SP2200), consisting of heated sampling tube and external heated dust filter with backflush valve unit and connection for the external test gas feed
- Heated sample gas pipe (15 m in the laboratory, 35 m in the field), including: heated sample gas line (180 °C), line for back-purging air and the communication line
- Lockable analyser cabinet with thermal reactor, acid absorber, gas cooler, switchover unit with Hg absorber and the detector with microprocessor. Furthermore, the analyser cabinet contains a bypass pump and a compressed air preparation unit.