

# CERTIFICATE

## of Product Conformity (QAL1)

Certificate No.: 0000035009\_02

**AMS designation:** GRAPHITE 52M for TOC

**Manufacturer:** ENVEA  
111, Boulevard Robespierre  
78304 Poissy Cedex  
France

**Test Laboratory:** TÜV Rheinland Energy GmbH

This is to certify that the AMS has been tested  
and found to comply with the standards  
EN 15267-1 (2009), EN 15267-2 (2009), EN 15267-3 (2007)  
and EN 14181 (2014).

Certification is awarded in respect of the conditions stated in this certificate  
(this certificate contains 8 pages).  
The present certificate replaces certificate 0000035009\_01 of 28 February 2017.



Suitability Tested  
EN 15267  
QAL1 Certified  
Regular  
Surveillance

www.tuv.com  
ID 0000035009

Publication in the German Federal Gazette  
(BAnz) of 02 March 2012

German Federal Environment Agency  
Dessau, 16 February 2022

This certificate will expire on:  
01 March 2027

TÜV Rheinland Energy GmbH  
Cologne, 15 February 2022



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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.

<b>Test report:</b>	936/21214670/A of 05 October 2011
<b>Initial certification:</b>	16 March 2012
<b>Expiry date:</b>	01 March 2027
<b>Certificate</b>	Renewal (of previous certificate 0000035009_01 of 28 February 2017 valid until 01 March 2022)
<b>Publication:</b>	BAnz. 02. March 2012, no. 36, p. 920, chapter I number 2.2

### **Approved application**

The tested AMS is suitable for use at plants according to Directive 2010/75/EU, chapter III (13<sup>th</sup> BImSchV), chapter IV (17<sup>th</sup> BImSchV), 30<sup>th</sup> BImSchV, plants in compliance with TA Luft, plants according to the 27<sup>th</sup> BImSchV and other plants requiring official approval. 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 3-month field test at a waste incineration plant.

The AMS is approved for an ambient temperature range of +5° 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 limit values relevant to the application.

Any potential user should ensure, in consultation with the manufacturer, that this AMS is suitable for the intended purpose.

### **Basis of the certification**

This certification is based on:

- Test report 936/21214670/A of 05 October 2011 by TÜV Rheinland Energie und Umwelt GmbH
- Suitability announced by the German Federal Environment Agency (UBA) as the relevant body
- The ongoing surveillance of the product and the manufacturing process

Publication in the German Federal Gazette: BAnz. 02 March 2012, no. 36, p. 920, chapter I number 2.2, UBA announcement dated 23 February 2012:

**AMS designation:**

GRAPHITE 52M for TOC

**Manufacturer:**

Environnement S. A, Poissy, France

**Field of application:**

For measurements at plants requiring official approval and plants according to 27<sup>th</sup> BImSchV

**Measuring ranges during performance testing:**

Component	Certification range	Supplementary measuring ranges	Unit
TOC	0 - 15	0 - 500	mg/m <sup>3</sup>

**Software version:**

Version V2.19

**Restrictions:**

None

**Notes:**

1. The maintenance interval is four weeks.
2. The measuring system carries out a zero point adjustment daily.
3. An H<sub>2</sub>/He fuel gas mixture is required for operation.

**Test Report:**

TÜV Rheinland Energy GmbH, Cologne

Report no.: 936/21214670/A of 05 October 2011

Publication in the German Federal Gazette: BAnz AT 26.08.2015 B4, chapter V  
26<sup>th</sup> notification, UBA announcement dated 22 July 2015:

**26 Notification as regards Federal Environment Agency (UBA) notice of 23 February 2012 (BAnz. p. 920, chapter I number 2.2)**

The current software version of the GRAPHITE 52M measuring system for TOC manufactured by Environnement S.A. is:

v2.21 (calculation process)  
v3.1.b (display process)

The material used for the thermal insulation of the furnace was changed from Kerlane to glass fibre.

Statement issued by TÜV Rheinland Energie und Umwelt GmbH  
dated 14 March 2015

Publication in the German Federal Gazette: BAnz AT 26.03.2019 B7, chapter IV 26<sup>th</sup>  
notification, UBA announcement dated 27 February 2019:

**26 Notification as regards Federal Environment Agency (UBA) notices of 23 February 2012 (BAnz. p. 920, chapter I number 2.2) and of 22 July 2015 (BAnz AT 26.08.2015 B4, chapter V 26<sup>th</sup> notification)**

The current software version of the Graphite 52 M measuring system for TOC manufactured by Environnement S.A. is:

v2.21 (calculation process)  
v3.1.g (display process)

Statement issued by TÜV Rheinland Energy GmbH dated 27 September 2018

Publication in the German Federal Gazette: BAnz AT 24.03.2020 B7, chapter IV 31<sup>st</sup> notification, UBA announcement dated 24 February 2020:

**31 Notification as regards Federal Environment Agency (UBA) notices of 23 February 2012 (BAnz. p. 920, chapter I number 2.2) and of 27 February 2019 (BAnz AT 26.03.2019 B7, chapter IV 26<sup>th</sup> notification)**

The company Environnement S.A., Poissy, France, has changed its name and now operates under the name ENVEA.

The current software version of the Graphite 52 M measuring system for TOC manufactured by ENVEA is:

v2.22 (calculation process)

v3.8.b (display process)

Statement issued by TÜV Rheinland Energy GmbH dated 1 October 2019

Publication in the German Federal Gazette: BAnz AT 03.05.2021 B9, chapter III 16<sup>th</sup> notification, UBA announcement dated 31 March 2021:

**16 Notification as regards Federal Environment Agency (UBA) notices of 23 February 2012 (BAnz. p. 920, chapter I number 2) and of 24 February 2020 (BAnz AT 24.03.2020 B7, chapter IV 31<sup>st</sup> notification)**

The current software version of the Graphite 52 M measuring system for TOC manufactured by ENVEA is:

v2.22 (calculation process)

v3.8.c (display process)

Statement issued by TÜV Rheinland Energy GmbH dated 8 September 2020

**Certified product**

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

The GRAPHITE 52M uses a flame ionisation detector (FID) to measure hydrocarbons. The measuring system works extractively, i.e. the sample gas is drawn from the gas duct by means of a gas sampling probe and fed to the analysis system via a (heated) sample gas line.

The GRAPHITE 52M in its approved version consists of the following parts:

1. Measurement probe Environnement HOFI
2. Heated sample gas line (10 m length)
3. GRAPHITE 52M Analyser
4. Software versions v2.21 (Calculation process) and v3.1.b (Display process)

**General remarks**

This certificate is based upon the equipment tested. The manufacturer is responsible for ensuring that on-going production complies with the requirements of the EN 15267. The manufacturer is required to maintain an approved quality management system controlling the manufacturing process for the certified product. Both the product and the quality management systems shall be subject to regular surveillance.

If a product of the current production does not conform to the certified product, TÜV Rheinland Energy GmbH must be notified at the address given on page 1.

A certification mark with an ID-Number that is specific to the certified product is presented on page 1 of this certificate.

This document as well as the certification mark remains property of TÜV Rheinland Energy GmbH. Upon revocation of the publication the certificate loses its validity. After the expiration of the certificate and on request of TÜV Rheinland Energy GmbH this document shall be returned and the certificate mark must no longer be used.

The relevant version of this certificate and its expiration date are also accessible on the internet at [qal1.de](http://qal1.de).

### **Document history**

Certification of the GRAPHITE 52M measuring system is based on the documents listed below and the regular, continuous surveillance of the manufacturer's quality management system:

#### **Initial certification according to EN 15267**

Certificate no. 0000035009\_00: 16 March 2012  
Expiry date of the certificate: 01 March 2017  
Test report: 936/21214670/A of 05 October 2011  
TÜV Rheinland Energie und Umwelt GmbH  
Publication: BAnz. 02 March 2012, no. 36, p. 920, chapter I number 2.2  
UBA announcement dated 23 February 2012

#### **Notifications in accordance with EN 15267**

Statement issued by TÜV Rheinland Energy GmbH dated 14 March 2015  
Publication: BAnz AT 26.08.2015 B4, chapter V notification 26  
UBA announcement dated 22 July 2015  
(Software updates)

#### **Renewal of the certificate**

Certificate no. 0000035009\_01: 28 February 2017  
Expiry date of the certificate: 01 March 2022

#### **Notifications in accordance with EN 15267**

Statement issued by TÜV Rheinland Energy GmbH dated 27 September 2018  
Publication: BAnz AT 26.03.2019 B7, chapter IV notification 26  
UBA announcement dated 27 February 2019  
(Software updates)

Statement issued by TÜV Rheinland Energy GmbH dated 1 October 2019  
Publication: BAnz AT 24.03.2020 B7, chapter IV notification 31  
UBA announcement dated 24 February 2020  
(Change of software and manufacturer name, formerly Environnement S.A.)

Statement issued by TÜV Rheinland Energy GmbH dated 8 September 2020  
Publication: BAnz AT 03.05.2021, B9, chapter III notification 16  
UBA announcement dated 31 March 2021  
(Software updates)

#### **Renewal of the certificate**

Certificate no. 0000035009\_02: 16 February 2022  
Expiry date of the certificate: 01 March 2027

### Calculation of overall uncertainty according to EN 14181 and EN 15267-3

#### Measuring system

Manufacturer	Environnement S.A
Name of measuring system	Graphite 52M
Serial number of the candidates	703 / 705
Measuring principle	FID

#### Test report

Test laboratory	936/21214670/A TÜV Rheinland
Date of report	2011-10-05

#### Measured component

Certification range	TOC 0 - 15 mg/m <sup>3</sup>
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#### Evaluation of the cross sensitivity (CS)

(system with largest CS)

Sum of positive CS at zero point	0.38 mg/m <sup>3</sup>
Sum of negative CS at zero point	-0.24 mg/m <sup>3</sup>
Sum of positive CS at reference point	0.51 mg/m <sup>3</sup>
Sum of negative CS at reference point	-0.58 mg/m <sup>3</sup>
Maximum sum of cross sensitivities	-0.58 mg/m <sup>3</sup>
Uncertainty of cross sensitivity	-0.335 mg/m <sup>3</sup>

#### Calculation of the combined standard uncertainty

##### Tested parameter

	u	u <sup>2</sup>
Standard deviation from paired measurements under field conditions *	u <sub>D</sub> 0.077 mg/m <sup>3</sup>	0.006 (mg/m <sup>3</sup> ) <sup>2</sup>
Lack of fit	u <sub>lof</sub> -0.069 mg/m <sup>3</sup>	0.005 (mg/m <sup>3</sup> ) <sup>2</sup>
Zero drift from field test	u <sub>d,z</sub> 0.060 mg/m <sup>3</sup>	0.004 (mg/m <sup>3</sup> ) <sup>2</sup>
Span drift from field test	u <sub>d,s</sub> -0.152 mg/m <sup>3</sup>	0.023 (mg/m <sup>3</sup> ) <sup>2</sup>
Influence of ambient temperature at span	u <sub>t</sub> 0.173 mg/m <sup>3</sup>	0.030 (mg/m <sup>3</sup> ) <sup>2</sup>
Influence of supply voltage	u <sub>v</sub> 0.015 mg/m <sup>3</sup>	0.000 (mg/m <sup>3</sup> ) <sup>2</sup>
Cross sensitivity (interference)	u <sub>i</sub> -0.335 mg/m <sup>3</sup>	0.112 (mg/m <sup>3</sup> ) <sup>2</sup>
Influence of sample gas flow	u <sub>p</sub> -0.034 mg/m <sup>3</sup>	0.001 (mg/m <sup>3</sup> ) <sup>2</sup>
Uncertainty of reference material at 70% of certification range	u <sub>rm</sub> 0.121 mg/m <sup>3</sup>	0.015 (mg/m <sup>3</sup> ) <sup>2</sup>
Variation of response factors (TOC)	u <sub>rf</sub> 0.000 mg/m <sup>3</sup>	0.000 (mg/m <sup>3</sup> ) <sup>2</sup>

\* The larger value is used :

"Repeatability standard deviation at span" or

"Standard deviation from paired measurements under field conditions"

Combined standard uncertainty (u<sub>c</sub>)

$$u_c = \sqrt{\sum (u_{\max, j})^2} \quad 0.44 \text{ mg/m}^3$$

Total expanded uncertainty

$$U = u_c * k = u_c * 1.96 \quad 0.87 \text{ mg/m}^3$$

#### Relative total expanded uncertainty

Requirement of 2000/76/EC and 2001/80/EC

Requirement of EN 15267-3

U in % of the ELV 10 mg/m<sup>3</sup> **8.7**

U in % of the ELV 10 mg/m<sup>3</sup> **30.0**

U in % of the ELV 10 mg/m<sup>3</sup> **22.5**