ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Umwelt Bundesamt

Certificate number: 3003564-ts

TÜV SÜD Industrie Service

CERTIFICATE

of product conformity (QAL 1)

Certificate number: 3003564-ts

Certified AMS	iFiD Rack for TOC
Manufacturer	Testa GmbH Kathi-Kobus-Straße 15 80797 Munich Germany
Test institute	TÜV SÜD Industrie Service GmbH

This is to certify that the AMS has been tested and found to comply with the standards DIN EN 15267-1 (2009), DIN EN 15267-2 (2009), DIN EN 15267-3 (2008) and DIN EN 14181 (2015).

Certification applies to the conditions listed in this certificate (the certificate consists of 6 pages).

DIN EN 15267 TÜV SÜD Eignungsprüfung Valid until 05/2026 Produktion überwacht

Certificate No.: 3003564-ts

Publication in the German Federal Gazette
(BAnz) of 03 May 2021

This certificate will expire on:
02 May 2026

Umweltbundesamt
Dessau, 05 May 2021

Dr. Marcel Langner
Head of Section II 4.1

TÜV SÜD Industrie Service GmbH
Testing laboratory emission measurement/ calibration
Munich, 04 May 2021

Hans-Jörg Eisenberger

TÜV®

Test report	3003564 from 03 August 2020
Initial certification	03 May 2021
Certification validity until	02 May 2026 (5 years)
Publication	BAnz AT 03 May 2021 B9, chapter I, no. 2.1

Approved application

The tested AMS is suitable for use at plants requiring authorisation and plants in accordance with the 44. BImSchV. The suitability for this application was assessed on the basis of a laboratory test and a field test of the AMS iFiD Rack lasting over more than three months at plant according to Directive 2010/75/EU chapter IV (17. BImSchV). The measuring system is approved for ambient temperatures between +5 °C bis +40 °C.

The AMS publication, the suitability test and the performance of the uncertainty calculations were conducted based on the provisions valid at the time of testing. Due to possible amendments to legal foundations, every user should ensure before use of the AMS that it is suitable for monitoring the applicable values.

The operator should consult the manufacturer to ensure that the AMS is suitable for the plant at which it is to be installed.

Certification basis

This certificate is based on:

- TÜV SÜD Industrie Service GmbH test report 3003564 from 03 August 2020
- Suitability announcement by the German Federal Environmental Agency as relevant body
- The ongoing surveillance of the product and the manufacturing process

- Publication in the German Federal Gazette (BAnz AT 03 May 2021 B9, chapter I, no. 2.1, UBA publication from 31 March 2021)

AMS: iFiD Rack for TOC

Manufacturer: Testa GmbH, Munich

Suitability: For plants requiring authorisation and plants in compliance with the 44. BImSchV

Measurement ranges in the suitability test:

Compo-nent	Certification range	Supplementary measurement ranges			Unit
		Measurement range 2	Measurement range 3	Measurement range 4	
TOC	0 – 15	0 – 30	0 – 150	0 – 500	mg/m³

Software versions:

Testa CE:	1.76
DGA:	2.0
I/O:	2.0
QPC:	2.0

Restrictions:

None

Notes:

1. The maintenance interval is four weeks.
2. The AMS should be aligned at an interval of 24 hours using the automatic alignment function at zero and span point.
3. The provision with zero gas can be realised by connecting synthethic air (5.0) or by using the internal zero gas air treatment.

Test report: TÜV SÜD Industrie Service GmbH, Munich
Report no.: 3003564 from 03 August 2020

Certified Product

The certificate applies to AMS that comply with the following description:

The entire tested measuring system iFiD Rack consists of the sampling probe with titanium filter, the heated measurement gas line, the analyser with microcomputer and display.

The measuring system iFiD Rack detects organic bonded carbon by using a flame-ionisation-detector. For this the measurement gas is fed to the analyser over a sampling gas probe, heated to 180 °C and a sample gas line with PTFE seal, heated to 180 °C. The measurement gas feed is realized by means of an air-jet injector. For the operation of the flame ionisation detector, hydrogen (5.0) is additionally required as fuel gas and synthetic air (5.0) or ambient air, which is treated within the analyser by means of activated carbon and catalyst, as fuel air.

The entire system consists of the following components:

Analyser	
Manufacturer:	Testa GmbH
Type:	iFiD Rack
Software:	Testa CE: 1.76
	DGA: 2.0
	I/O: 2.0
	QPC: 2.0
Measurement principle:	Flame-ionisation detector
Probe:	
Manufacturer:	Testa GmbH
Type:	iFiD Filter
Filter:	Titanium filter 5 µm, heated at 180°C
Controller:	integrated in the analyser
Heated line	
Manufacturer:	Testa GmbH
Type:	iFiD Line
Heating temperature:	180°C
Diameter:	40 mm
Tube:	PTFE, 4 mm ID
Controller:	integrated in the analyser

General notes

This certificate is based on the analyser tested. The manufacturer is responsible for the continuous compliance of the production to the DIN EN 15267 requirements. The manufacturer is required to maintain an approved quality management system to control the manufacture of the certified product. Regular monitoring must be conducted on both the product and the quality management systems.

If the product from the current production series no longer comply with the certified product, the Environmental Service Department of TÜV SÜD Industrie Service GmbH must be informed (address see footnote).

A certification mark with an ID-Number that is specific to the certified product is presented on page 1 of this certificate. This can be applied on the product or used in publicity material for the certified product.

This document and the certification mark shall remain the property of TÜV SÜD Industrie Service GmbH.

Should the publication be revoked, this certificate will become invalid. This document must be returned when the period of validity has elapsed and at the request of TÜV SÜD Industrie Service GmbH and the certification mark may no longer be used.

The current version of the certificate and its expiration is also accessible on the internet at **qal1.de**.

The certification of the iFiD Rack measuring system is based on the following documents and the regular continuous monitoring of the manufacturer's quality management system:

Initial certification in accordance with DIN EN 15267:

Certificate no. 3003564-ts	03 May 2021
Certificate validity until	02 May 2026 (5 years)

Report no.: 3003564 from 03 August 2020,
TÜV SÜD Industrie Service GmbH
Publication: BAnz AT 03 May 2021 B9, chapter I no. 2.1,
UBA publication from 31 March 2021

Calculation of total uncertainty for QAL1 testing according to DIN EN 14181 and DIN EN 15267-3 for the measuring system iFiD Rack

Total uncertainty for the measurement component TOC in the measuring range 0-15 mg/m³

Performance characteristic	*Uncertainty*	*Value standard uncertainty mg/m³*	*Square of standard uncertainty (mg/m³)²*
Lack-of-fit	u_{lof}	0,036	0,0013
Zero drift from field test	$u_{d,z}$	-0,035	0,0012
Span drift from field test	$u_{d,s}$	0,165	0,0272
Influence of ambient temperature at span	u_t	0,041	0,0017
Influence of sample gas pressure	u_p		
Influence of sample gas flow	u_f	-0,083	0,0069
Influence of supply voltage	u_v	0,007	0
Cross-sensitivity (interference)	u_i	0,338	0,1142
Repeatability standard deviation at span	$u_r = s_r$	0,011	ur < du
Standard deviation from paired measurements under field cond.	$u_d = s_d$	0,061	0,0037
Uncertainty of reference material 2 % by 70% of CR	u_{rm}	0,1212	0,0147
Excursion of measurement beam	u_{mb}		
Converter efficiency for AMS measuring NOx	u_{ce}		
Variation of response factors (TOC)	u_{rf}	0,205	0,042
		total	0,2129
Combined standard uncertainty	$u_c = \sqrt{\sum (u_i)^2}$	0,4614	mg/m³
Total expanded uncertainty	$U_{0,95} = 1,96 \times u_c$	0,9043	mg/m³
Relativ expanded uncertainty	U	9,0	% ELV
Permissible uncertainty of EN 15267-3	(of ELV 10 mg/m³)	22,5	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding EN 15267-3
Permissible uncertainty 13. / 17. BImSchV	(of ELV 10 mg/m³)	30	% ELV
Complied with requirements relating to the measurement uncertainty		yes	regarding 13. / 17. BImSchV