Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-14115-02-18 according to DIN EN ISO/IEC 17025:2018

Valid from: **01.04.2021**

Date of issue: 01.04.2021

Holder of certificate:

SGS INSTITUT FRESENIUS GmbH

at the locations

Im Maisel 14, 65232 Taunusstein
Goerzallee 305a, 14167 Berlin
Im Paesch 1a, 54340 Longuich
Am Technologiepark 10, 45699 Herten
Königsbrücker Landstr. 161, 01109 Dresden
Geretsrieder Straße 10a, 81379 München
Am TÜV 1, 66280 Sulzbach

Tests in the fields:

Immission control/hazardous substances/indoor air

Immission control
Determination of inorganic and organic gaseous or particulateairborne substances;
sampling of airborne polyhalogenated dibenzo-p-dioxins and dibenzofurans;
sampling and measurement of odours
Module for immission control

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories. Laboratories that conform to the requirements of this standard, operate generally in accordance with the principles of DIN EN ISO 9001.

The certificate together with the annex reflects the status as indicated by the date of issue.
The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at https://www.dakks.de/en/content/accredited-bodies-dakks.

Hazardous materials
Determination of aerosols and fibre dusts, inorganic and organic gases and vapours and of selected parameters and in selected areas for workplace measurements in accordance with the German Ordinance on Hazardous Substances, Section 7 (10) (group 1-5)

Indoor air
Sampling of airborne pollutants in indoor air

Determination of diffuse gas emissions from biogas plants and landfills;
Analysis of landfill gas, digester gas, biogas and special gases

The testing laboratory is permitted to apply the listed standardised or equivalent test methods with different versions of the standards without obtaining prior notification and consent from DAkkS.

The testing laboratory has an up-to-date list of all test methods within the flexible scope of accreditation.

The methods for sampling (P) and analysis (A) are marked with the following symbols for the locations at which they are carried out:

TS = Taunusstein location
B1 = Berlin-Goerzallee location
HE = Herten location
DD = Dresden location
M = Munich location
LO = Longuich location
SB = Sulzbach location

1 Areas of activity regulated by immission control law

Measurement procedure as per immission control module and VDI 4220 Blatt 1.
The fulfilment of the requirements of DIN CEN/TS 15675:2008 is hereby confirmed.

The requirements for emission measurements in accordance with DIN EN 15259:2008 (Measurement of stationary source emissions - Requirements for measurement sections and sites and for the measurement objective, plan and report) are fulfilled.

The measuring body as per Section 29b Federal Immission Control Act, SGS Institut Fresenius GmbH, carries out its activities at the Longuich and Berlin locations. Analysis is carried out at the Longuich (LO), Berlin (B1) and Dresden (DD) laboratory locations.

Test area group I.1:	**Determination of emissions (air) Sections 26, 28 BImSchG and corresponding measurement tasks in accordance with ordinances on the implementation of BImSchG**		
Component	**Standard / Guideline / Technical rule**	**SRM**	**Comments Location**
General	**Reference variables and flue gas boundary conditions**		
Water vapour	DIN EN 14790:2017-05	☒	P+A: LO/B1
Oxygen	DIN EN 14789:2017-05	☒	P+A: LO/B1
Volume flow	EN ISO 16911-1:2013-03	☒	P+A: LO/B1
ID P:	**Particulate and chemical substances adsorbed on particles**		
Total dust at low dust concentrations	DIN EN 13284-1:2018-02	☒	P+A: LO/B1
Dust constituents or compounds adsorbed to dust, including filterable fractions			
Arsenic (As)	DIN EN 14385:2004-05	☒	P: LO/B1; A: B1
Cadmium (Cd)	DIN EN 14385:2004-05	☒	P: LO/B1; A: B1
Nickel (Ni)	DIN EN 14385:2004-05	☒	P: LO/B1; A: B1
Lead (Pb)	DIN EN 14385:2004-05	☒	P: LO/B1; A: B1
Mercury (Hg)	DIN EN 13211:2001-06	☒	P: LO/B1; A: B1
Additional components as part of determination of emissions			
Copper (Cu), chromium (Cr), cobalt (Co), manganese (Mn), antimony (Sb), thallium (Tl), vanadium (V)	DIN EN 14385:2004-05	☒	P: LO/B1; A: B1

Test area group I.1:	Determination of emissions (air) Sections 26, 28 BImSchG and corresponding measurement tasks in accordance with ordinances on the implementation of BImSchG		
Component	**Standard / Guideline / Technical rule**	**SRM**	**Comments Location**
Total dust at high dust concentrations	VDI 2066 Blatt 1:2006-11	☒	P+A: LO/B1
Soot	VDI 2066 Blatt 8:1995-09	☒	P+A: LO/B1
PAH	VDI 3874:2006-12	☒	P: LO/B1; A: B1
ID G	**Gaseous inorganic and organic substances**		
NO_x	DIN EN 14792:2017-05	☒	LO/B1
CO	DIN EN 15058:2017-05	☒	LO/B1
SO_X	DIN EN 14791:2017-05	☒	P+A: LO/B1
HCl	DIN EN 1911:2010-12	☒	P+A: LO/B1
HF	VDI 2470 Bl. 1:1975-10	☐	P+A: LO/B1
Total C (organic)	DIN EN 12619:2013-04	☒	LO/B1
Aldehydes/ketones (e.g. formaldehyde)	VDI 3862 Bl.4:2001-05 VDI 3862 Bl.2:2000-12 VDI 3862 Bl.3:2000-12	☒ ☒ ☒	P: LO/B1; A: LO P: LO/B1; A: B1 P: LO/B1; A: B1
PAH	VDI 3874:2006-12	☒	P: LO/B1; A: B1
Benzene, toluene, xylene (BTX)	DIN CEN TS 13649:2015-03	☒	P: LO/B1; A: DD
Ethylbenzene, tetrachloroethene and other gaseous organic compounds	DIN CEN TS 13649:2015-03	☒	P: LO/B1; A: DD
Ammonia (NH3)	VDI 3878:2017-09	☒	P: LO/B1; A: LO
Ammonia (NH3)	VDI 3496 Bl.1:1982-04	☐	P: LO/B1; A: LO
Additional components as part of determination of emissions if applicable			
Hydrogen sulphide (H2S)	VDI 3486 Bl.2:1979-04	☐	P: LO/B1; A: LO
Formaldehyde	VDI 3862 Bl. 8:2015-06	☐	P: LO/B1
SOx continuous	In-house method using suitability-tested measuring Instruments -IR method	☐	P: LO/B1

Test area group I.1:	Determination of emissions (air) Sections 26, 28 BImSchG and corresponding measurement tasks in accordance with ordinances on the implementation of BImSchG		
Component	**Standard / Guideline / Technical rule**	**SRM**	**Comments Location**
ID O	**Odours**		
Plane source with through-flow	DIN EN 13725:2003-07; VDI 3880:2011-10	☐	P+A: LO
Plane source without through-flow	DIN EN 13725:2003-07; VDI 3880:2011-10	☐	P+A: LO
Industrial point source	DIN EN 13725:2003-07; VDI 3880:2011-10	☐	P+A: LO
ID Sp	**Special sampling of substances requiring additional effort for sampling or analysis**		
Methods of sampling for determination of the single isomers of PCDD/PCDF	DIN EN 1948-1:2006-06	☒	P: LO/B1

The methods listed **in section 1** comply with the requirements for the
"Specialist customer certificate for determination in the area of immission control"
"LAI specialist module for immission control" (updated version by L/W/V of 30.01.2018)

Competence is confirmed for the testing and technical areas of activity regulated by immission control law

Group I No.1: P, G, Sp, O.

2 Determination of hazardous substances in the air in work areas in accordance with the German Ordinance on Hazardous Substances Section 7 (10)

Group 1 Aerosols (without fibre dusts) Section	Component	Standard issue date	QM document	Comments Location
I-dust and constituents	Inhalable fraction	BIA 7284 X/03	SOP M 3384	P: TS, B1
	Gravimetric dust mass determination	DFG Air Analyses 2005, BGI 505.41 10/06, DIN ISO 15767 (10/2010)	SOP M 3383	A: TS, B1
	Wood dust	IFA 7630 XI/11	SOP M 3384	P: TS, B1
	Metals and metal compounds (e.g. arsenic, lead, beryllium, cadmium, chromium, cobalt, copper, manganese, nickel, vanadium)	IFA 7808 XII/13 IFA 6015 XI/18 DGUV 213-510 (BGI 505-10) (08/2020) NIOSH 7301 03/2003 NIOSH 7302 07/2014	SOP M 3384 SOP M 3660	P: TS, B1 A: TS
	Chromates	DGUV 213-505 (BGI 505.5) (05/1993)	SOP M 3384 SOP M 1172	P: TS, B1 A: TS
	Amorphous silicic acids	IFA 7710 V/11	SOP M 3384	P: TS, B1
A-dust and constituents	Alveolar fraction	IFA 6068 X/03	SOP M 3385	P: TS, B1
	Gravimetric dust mass determination	DFG Air Analyses 2005, BGI 505.41 10/06, DIN ISO 15767 (10/2010)	SOP M 3383	A: TS, B1
	Metals and metal compounds (e.g. arsenic, lead, beryllium, cadmium, chromium, cobalt, copper, manganese, nickel, vanadium)	IFA 7808 XII/13 IFA 6015 XI/18 DGUV 213-510 (BGI 505-10) (08/2020), NIOSH 7301 03/2003 NIOSH 7302 07/2014	SOP M 3385 SOP M 3660	P: TS, B1 A: TS
	Quartz	BGIA 8522 II/95	SOP M 3385	P: TS, B1

Group 2 Fibre dusts	Component	Standard	QM document	Comments Location
Asbestos and inorganic fibres (respirable)	Fibres, general, respirable	BGIA 7485 V/09 DGUV 213-546 (2014-02) (BGI 505-46)	SOP M 038	P: B1
	Evaluation of core pore filters using REM-EDX	DGUV 213-546 (2014-02) (BGI 505-46)	SOP M 2497	A: B1,DD,M

Group 3 Inorganic gases and vapours	Component	Standard	QM document	Comments Location
Halogenated hydrocarbons and other inorganic acids	Volatile inorganic acids (hydrogen chloride, nitric acid, hydrogen bromide)	BGIA 6172 IV/07 NIOSH 7907 05/2014	SOP M 040 SOP M 147	P: TS, B1 A: TS
	Particulate inorganic acids (sulphuric acid, phosphoric acid)	BGIA 6173 V/16 NIOSH 7908 05/2014	SOP M 040 SOP M 147	P: TS, B1 A: TS
	Fluorides and hydrogen fluoride	BGIA 7512 V/06 NIOSH 7906 05/2014	SOP M 041 SOP M 147	P: TS, B1 A: TS
Other volatile hydrides	Ammonia	BGIA 6150 IV / 08 (photometric analysis)	SOP M 032 SOP M 049	P: TS, B1 A: TS
Nonmetallic oxides	Direct-display test tubes (e.g. ozone/CO/CO2)	IFA 9020 X/16	SOP M 414	P: TS, B1
	Carbon dioxide/carbon monoxide/NOx (continuous measurement method)	IFA 9070 XII/14	SOP M 1838	P: TS
	Nitrogen dioxide and nitrogen monoxide	NIOSH 6014 8/15/94	SOP M 101	P: TS, B1

Group 4 Organic gases and vapours	Component	Standard	QM document	Comments Location
Simple solvents	Hydrocarbons, aliphatic	BGIA 7732 XI/11 NIOSH 1500 03/2003	SOP M 043 SOP M 2601	P: TS, B1 A: DD
	Hydrocarbons, aromatic	BGIA 7733 IV/05 NIOSH 1501 03/2003	SOP M 043 SOP M 2601	P: TS, B1 A: DD
	Styrene and methylstyrenes	BGIA 8635 V/11 NIOSH 1501 03/2003	SOP M 043 SOP M 2601	P: TS, B1 A: DD
	Benzene	BGIA 6265 X/13 (MV1) NIOSH 1501 03/2003	SOP M 043 SOP M 2601	P: TS, B1 A: DD
	Acetic acid esters	BGIA 7322 V/09 NIOSH 1450 03/2003	SOP M 043 SOP M 2601	P: TS, B1 A: DD

Group 4 Organic gases and vapours	Component	Standard	QM document	Comments Location
Simple solvents	Chlorinated hydrocarbons, aliphatic I	BGIA 6600 X/06 NIOSH 1003 03/2003	SOP M 043 SOP M 2601	P: TS, B1 A: DD
	Terpenes	IFA MGU NIOSH 1552 05/1996	SOP M 043 SOP M 2601	P: TS, B1 A: DD
	Alcohols	BGIA 7330 IV/97 NIOSH 1400 08/1994 NIOSH 1401 08/1994	SOP M 043 SOP M 2601	P: TS, B1 A: DD
	Methanol	IFA 7810 XI/12 NIOSH 2000 01/1998	SOP M 043 SOP M 2579	P: TS, B1 A: DD
	Glycols/glycol compounds	BGIA 7345 IV/13 BGIA 7569 IV/13 NIOSH 2554 03/2003 NIOSH 1403 03/2003	SOP M 043 SOP M 2601	P: TS, B1 A: DD
	Ketones	BGIA 7708 IV/05	SOP M 043 SOP M 2601	P: TS, B1 A: DD
	Hydrocarbon mixtures - RCP	BGIA 7735 XI/09 NIOSH 1500 03/2003 NIOSH 1501 03/2003	SOP M 043 SOP M 2601	P: TS, B1 A: DD
Epoxides	Ethylene oxide	NIOSH 1614 08/15/94 BGI 505-27 10/2006	SOP M 069 SOP M 064	P: TS, B1 A: TS
Aldehydes	E.g. formaldehyde, acetaldehyde	BGIA 6045 XI/09 NIOSH 2016 03/2003 BGIA 7520 1998	SOP M 039 SOP M 695	P: TS, B1 A: DD
Phenols	Phenol and cresols	NIOSH 2546 08/1994	SOP M 066 SOP M 2601	P: TS, B1 A: DD
Organic acids	E.g. acetic acid, propionic acid	BIA 7320 X/93	SOP M 065 SOP M 3700	P: TS, B1 A: TS

Group 5 Selected parameters	Component	Standard	QM document	Comments Location
Systems with two-phase sampling with summation	Mineral oils and vapours	BIA 8000 XI/97	SOP M 036 SOP M 048	P: TS, B1 A: TS
	Cooling lubricants	BIA 7750 XI/97	SOP M 036 SOP M 048	P: TS, B1 A: TS
Isocyanates	E.g. MDI, TDI	BGIA 7120 XII/10	SOP M 070	P: TS, B1
DME and carbon black	Diesel engine emissions (elemental and organically bound carbon)	BIA 7050 IV/97	SOP M 068	P: TS, B1
	Carbon black	BIA 6547 X/98	SOP M 068	P: TS, B1
N-nitrosamines	E.g. NDMA, NMOR, NDELA	IFA 8172 IV/18 BGIA 8183 III/00	SOP M 046 SOP M 047	P: TS, B1 A: TS

The methods listed **in section 2** comply with the requirements for determining the concentration of hazardous substances at workplaces. Together with the review of the reports submitted in sufficient numbers for the individual groups, competence at the Taunusstein and Berlin locations for

Group 1

Group 2 (Berlin only)

Group 3

Group 4

Group 5 Mineral oils and vapours, cooling lubricants, isocyanates, DME and carbon black, N-nitrosamines

for the determination and assessment of concentrations of hazardous substances in air in work areas in accordance with the German Ordinance on Hazardous Substances Section 7 (10) is confirmed.

3 Sampling of airborne pollutants in indoor air

For the sampling part of the indoor air tests listed below, the requirements of the sampling strategy DIN EN ISO 16000-1 (general requirements), -2 (formaldehyde)), -5 (VOC), -7 (asbestos fibres), -12 (PCB,PCDD/PCDF), -19 (moulds) in their respective current versions are fulfilled

Standards/guidelines	Title	Location						
		TS	B1	HE	DD	M	LO	SB
Aldehydes								
DIN ISO 16000-3 2013-01	Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and in test chambers - Pumped sampling (indoor air only)	X	X	X	X	X	X	X
DIN ISO 16000-4 2012-11	Indoor air - Part 4: Determination of formaldehyde - Diffusive sampling method	X						
VOC								
DIN ISO 16000-6 2012-11	Indoor air - Part 6: Determination of volatile organic compounds in indoor air test chamber air by active sampling on Tenax TA® sorbent, thermal desorption and gas chromatography with MS or MS-FID (indoor air only)	X	X	X	X	X	X	X
DIN EN ISO 16017-1 2001-10	Indoor, ambient and workplace air - Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography - Part 1: Sampling with a pump							
VDI 2100 Sheet 2 2010-11	Determination of gaseous compounds in ambient air - Determination of indoor air pollutants - Gas chromatographic determination of organic compounds - Active sampling by enrichment on activated carbon - Solvent extraction							
VDI 2100 Sheet 3 2011-10	Determination of gaseous compounds in ambient air - Determination of indoor air pollutants - Gas chromatographic determination of organic compounds - Active sampling by accumulation on adsorbents - Thermal desorption							
DIN EN ISO 16017-2 2003-09	Indoor, ambient and workplace air - Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography - Part 2: Diffusive sampling	X						
SVOC / POM								
DIN ISO 16000-13 2010-03	Indoor air - Part 13: Determination of total (gas and particle-phase) polychlorinated dioxin-like biphenyls (PCBs) and polychlorinated dibenzo-p-dioxins/dibenzofurans (PCDDs/PCDFs) - Collection on sorbent-backed filters *Application for sampling PAH, PCB, lindane, DDT and PCP*	X	X	X	X	X	X	X
Moulds								
DIN ISO 16000-16 2009-12	Indoor air - Part 16: Detection and enumeration of moulds - Sampling by filtration						X	X
DIN ISO 16000-18 2012-01	Indoor air - Part 18: Detection and enumeration of moulds - Sampling by impaction	X		X				X

Standards/guidelines	Title	Location						
		TS	B1	HE	DD	M	LO	SB
Fibres								
VDI 3492 2013-06	Indoor air measurement - Ambient air measurement - Measurement of inorganic fibrous particles - Scanning electron microscopy method	X	X	X	X	X	X	X
VDI 3877 Sheet 1 2011-09	Indoor air pollution - Measurement of fibrous dust settled on surfaces - Sampling and analysis (REM/EDXA)	X	X	X	X	X	X	X
VDI 3866 Sheet 1 2000-12	Determination of asbestos in technical products - Principle - Sampling and sample preparation		X			X		

4 Determination of diffuse gas emissions (LO)

VDI 3860-3 2017-11	Measurement of landfill gases - Measurement of surface emissions with the flame ionisation detector (FID)
In-house method M 3059 2019-11	Determination of diffuse methane emissions from gas-carrying systems

5 Analysis of landfill gas, digester gas, biogas and special gases (LO)

In-house method M 3039 2016-10	Determination of O_2, N_2, CH_4, Co_2 in gases
In-house method M 3040 2016-10	Determination of total chlorine, fluorine, sulphur in gases

Abbreviations used:

BGI	Bundesgenossenschaftliches Institut (Federal Cooperative Institute)
BGIA	Berufsgenossenschaftliches Institut für Arbeitsschutz (former name of the German Institute for Occupational Safety and Health)
CEN/TS	European Committee for Standardisation/Technical Specification
DGUV	Deutsche gesetzliche Unfallversicherung (German Social Accident Insurance)
DIN	Deutsches Institut für Normung (German Institute for Standardization)
EN	European Standard
In-house method	In-house method of SGS INSTITUT FRESENIUS GmbH
IEC	International Electrotechnical Commission
IFA	Institut für Arbeitsschutz (German Institute for Occupational Safety and Health)
ISO	International Organization for Standardization
NIOSH	National Institute for Occupational Safety and Health
RAL-UZ	Deutsches Institut für Gütesicherung und Kennzeichnung - Umweltzeichen (German Institute for Quality Assurance and Labelling - Environmental Label)
VDI	Verein Deutscher Ingenieure (Association of German Engineers)