

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-20275-04-00 according to DIN EN ISO/IEC 17025:2005

Valid from: 03.03.2020

Date of issue: 03.03.2020

Holder of certificate:

**Evonik Technology & Infrastructure GmbH
Productline Analytik**

at the locations

**Hanau-Wolfgang
Rodenbacher Chaussee 4, 63457 Hanau-Wolfgang**

**Marl
Paul-Baumann-Straße 1, 45764 Marl**

Tests in the fields:

physical, physico-chemical and chemical examination of inorganic and organic chemicals, pharmaceuticals, cosmetics, rubber, plastics, plastic additives, fibres, films, dyes, pigments, emulsifiers, additives, surfactants, waxes and resins, ceramics, coal, minerals, other solids, semi-finished products, semi-finished goods, consumer goods, commodities, (pressurised) gases, air, dust, metals, alloys, solders, catalysts and catalytic converters, semiconductors, ceramic colours, carbon blacks, silicic acids, pyrogenic oxides, metallic materials and surfaces; analysis for workplace measurements

Within the given testing field marked with **, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the modification, development and refinement of testing methods.

The listed testing methods are exemplary. The testing laboratory maintains a current list of all testing methods within the flexible scope of accreditation.

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Abbreviations used: see last page

*The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH.
<https://www.dakks.de/en/content/accredited-bodies-dakks>*

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The test methods are marked with the following symbols for the locations at which they are carried out:

M = Marl, W = Hanau-Wolfgang

1 Examination of chemical products

1.1 Physical, physico-chemical and chemical analysis of ingredients and contaminants in raw materials, intermediate products and end products

1.1.1 Structure analytical examination of organic compounds using NMR spectroscopy **

SOP 0558 Version 08 23.06.2009	¹³ C NMR spectroscopy Acquisition and analysis of nuclear resonance spectra	M
SOP 0561 Version 05 29.06.2009	²⁹ Si NMR spectroscopy Acquisition and analysis of nuclear resonance spectra	M
SOP 0565 Version 06 29.05.2009	¹ H NMR spectroscopy Acquisition and analysis of nuclear resonance spectra	M
SOP NMR-021 Version 01 31.08.2007	Analysis of NMR spectra	W
SOP NMR-021 E Method 024 E, Version 01 13.08.2013	Identity and Impurity Profile of Phosphoramidites by ³¹ P-NMR spectroscopy	W
SOP NMR-024 Version 02 27.05.2013	Quantitative analysis using NMR spectroscopy	W
SOP NMR-024 E Method 026 E, Version 01 05.06.2012	Assay Determination by NMR Spectroscopy Assay Determination of Phosphatidylcholine (PC) in Ethanol Solution by Quantitative ³¹ P NMR Spectroscopy	W
AN-SOP 0565 Method 008, Version 02 03.05.2006	¹ H NMR spectroscopy, acquisition and analysis of nuclear resonance spectra, NMR spectroscopic examination of (product name), (product name) and (product name), syringe A in accordance with test method (code) for the company (company name)	M
AN SOP 1915 e Version 01 19.03.2013	Identity of Enoxaparin Sodium API by ¹³ C NMR Spectroscopy according to USP	M

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1.1.2 Photometric examination of organic and inorganic compounds using UV-VIS and colorimetry

SOP UV-PHO-0137 Edition 01 24.02.2015	Determination of the anisidine value of (product name) (omega-3 fatty acid lysine salt) in accordance with Ph. Eur. 2.5.36 01/2008:20536	W
SOP UV-PHO-0138 Edition 01 24.02.2015	Determination of the anisidine value of (product name) (omega-3-fatty acid lysine salt) according to Ph. Eur. 2.5.36 01/2008:20536	W
SOP UV-PHO-0139 Edition 01 24.02.2015	Determination of the anisidine value of omega-3-fatty acid esters according to Ph. Eur. 2.5.36 01/2008:20536	W
SOP VIS Spur-0042 Edition 02 11.01.2006	Determination of chloride in 2-ketoleucine calcium salt (Precipitation with silver nitrate as silver chloride)	W
SOP VIS-SPUR-0048 Edition 02 14.08.2008	Determination of sulphates in 2-ketoleucine calcium salt (Limit test by precipitation with barium chloride as barium sulphate)	W
VER-ACAN_JP 0021 Version 01 12.03.2015	Verification of the photometric method for determining the identity of epinephrine from the Japanese Pharmacopoeia 16	M
AN-SOP 1344 Version 01 15.12.2007	Photometric determination of ammonia (indophenol blue method)	M

1.1.3 Examination or identification using infrared spectroscopy (FT-IR, NIR) **

SOP 0188 Method 0003, Version 03 03.05.2006	Measurement of IR and NIR spectra Identity verification of (product name), (product name) and (product name) syringe B using FT-IR in accordance with test method (code) for the company (company name)	M
SOP IR-011 Method 054, Version 01 29.02.2012	Identity verification using IR spectroscopy Determination of identity of (product name) using ATR-IR spectroscopy	W
SOP IR-011 Method 066, Version 01 09.10.2014	Identity verification using IR spectroscopy Determination of identity of glutamic acid Na salt hydrate using IR spectroscopy	W

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SOP IR-011E Method 065E, Version 01 03.09.2013	Identity verification using IR spectroscopy Identity of L-methionine sulfoximine using IR-ATR spectroscopy	W
SOP IR-011 Method 055, Version 01 29.11.2012	Identity verification using IR spectroscopy Determination of identity of (product name)	W
AN-SOP 0188 Version 5 07.12.2012	Measurement of IR spectra	M

1.1.4 Liquid chromatographic examination using mass spectrometric detection (HPLC-ESI-MS, APIC-MS coupling techniques) **

SOP LCMS-016 Version 03 02.03.2015	Determination of Degradation Products in Memantine Hydrochloride Tablets of (company name) (Kundenvorschrift)	W
SOP LCMS-020 Version 01 02.06.2015	Determination of peak E in tryptophan	W
SOP LCMS-023 Version 01 05.10.2011	Mass spectrometric Limit test for genotoxic 4-Fluoroaniline in Piperindol-N-acetic acid from (company name)	W
SOP LCMS-027 Version 01 08.08.2013	Quantitative Analyse von C8-C18 Fettsäuren mit LCMS on TSQ Vantage	W
SOP LCMS-028 Version 01 27.05.2014	Determination of impurity E in (product name) Nasal Spray from (Firmenname) by HPLC-MS	W
SOP LCMS-016 Version 02 30.04.2013	Determination of Degradation Products in Memantine hydrochloride tablets of (company name) (customer requirement)	W
SOP LCMS-023 Version 01 05.10.2011	Mass spectrometric Limit test for genotoxic 4-Fluoroaniline in Piperindol-N-acetic acid from (company name)	W
SOP LCMS-028 Version 01 27.05.2014	Determination of Impurity E in (product name) Nasal Spray from (company name) by HPLC-MS	W

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1.1.5 Determination of the specific rotation value using polarimetry **

SOP ORGA-023 Method DREH 0092, Version 02 14.04.2014	Determination of the specific rotation value with the Polarimeter 341 from Perkin Elmer: Determination of the specific rotation value of S, S, S lisinopril (TFA) ethyl ester	W
SOP ORGA-023 Method DREH-0037, Version 03 14.04.2014	Determination of the specific rotation value with the Polarimeter 341 from Perkin Elmer: Determination of the specific rotation value of N-6-Z-L-Lysin	W
SOP ORGA-023 Method DREH-0161, Version 01 19.09.2010	Determination of the specific rotation value with the Polarimeter 341 from Perkin Elmer: Determination of the specific rotation value of N-6 trifluoroacetyl-L lysyl-L proline	W

1.1.6 Gas chromatographic examination of organic substances (GC-FID, HS-GC, GC-WLD) **

SOP 1372_e Version 02 06.02.2014	Determination of the proportion of β -anomer in lactose monohydrate by means of GC after derivatisation	M
AN-SOP 1870 Version 02 06.03.2014	Identity and concentration of 1,2-propylene glycol in (product name) using gas chromatography	M
AN-SOP 1896 Version 03 30.01.2014	Headspace gas chromatographic determination of methanol, acetone, cyclohexane and toluene in (product name)	M
AN-SOP 1919 Version 01 22.02.2013	Determination of methanol in ester quats	M
AN-SOP 1890 Version 01 16.05.2012	Determination of residual solvents acetonitrile, toluene and chlorobenzene (product name) using HS-GC	M
AN-SOP 1880 Version 01 23.05.2011	Quantitative determination of impurities Toluene and iso-hexane in the finished medicinal product (product name) and in the active ingredient permethrin	M

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1.1.7 Liquid chromatographic examination of organic substances using HPLC (HPLC-DAD, HPLC-RID, HPLC-UVD, HPLC-FLD, HPLC-ELSD) **

SOP 1366_e Version 02 06.02.2014	Determination of the assay of lactose monohydrate by means of HPLC	M
SOP 1368_e Version 04 06.02.2014	Determination of the related substances in lactose monohydrate by means of HPLC	M
SOP HPLC-0156 Version 04 10.09.2013	Determination of related by-products (related substances) in chlorhexidine digluconate solution in accordance with Ph. Eur. as well as CHD base	W
SOP HPLC-1071 Version 03 17.01.2014	Quantification of "related substances" in bisoprolol fumarate in accordance with the HPLC method of the European Pharmacopoeia (end product and in-process control)	W
SOP HPLC-1082 Version 04 15.01.2015	HPLC method for simultaneous determination of vancomycin and gentamicin impurities in doped bone cement	W

1.1.8 Ion chromatographic examination of organic and inorganic substances (IC-LFD, IC-AMP) **

SOP 1432 Method 01, Version 04 30.11.2010	Ion chromatography (Metrohm) of anions in accordance with DIN EN ISO 10304 10µl.mtw	M
SOP AOAN-006 Version 02 05.12.2012	Determination of chloride and sulphate content of precipitated silicas by dissolving in sodium hydroxide solution and ion chromatography	W
SOP IC-0053 Edition 01 24.01.2011	Quantitative determination of mannitol and sucrose in (product name) by Ion Chromatography	W
SOP IC-0480 Version 01 08.03.2012	Quantification of trifluoroacetic acid (TFA) in drug substance (product name) using IC (limit test 250 mg/kg)	W
SOP IC-0566 Version 02 17.09.2012	Quantification of choline in succinylcholine chloride in accordance with USP	W

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1.1.9 Gas chromatographic examination of organic compounds with mass spectrometric detection (GC-MS, thermal desorption GC-MS, HSGC-MS) **

AN-SOP 1842-e Version 02 10.08.2010	Methyl methane sulphonate and ethyl methane sulphonate in (product name) by GC/MS	M
AN-SOP 1953-e Version 01 13.10.2014	Determination of Benzene and Toluene in adhesive layer of (product name) and (product name) by Headspace-GCMS	M
SOP GCMS-018 Version 01 20.12.2011	Identity verification of 4-chlorotetrahydropyran and limit test of bis(chloromethyl) ether BCME	W

1.1.10 Titration of inorganic and organic compounds using potentiometric and visual end point determination **

SOP 1477 Method 001, Version 003 29.03.2011	Titrations with the Titrino 736 GP Carbonate determination in 50% sodium hydroxide solution	M
SOP 1477 Method 007, Version 001 17.02.2014	Determination of chloride in silicas using Ag titration after dissolving in sodium hydroxide solution	M
SOP 1477 Method 008, Version 001 17.02.2014	Determination of chloride in silicas using Ag titration after extraction with acetic acid (method in accordance with (company name))	M
SOP AOAN-011 Version 01 06.11.2014	Determination of Na ₂ O and SiO ₂ content in water glass.	W
SOP EA1-079 Version 01 21.01.2010	Quantitative determination of chloride in synthetic silicas using argentometric titration after dissolving in sodium hydroxide solution	W
SOP TITR-0006 Version 04 27.02.2013	Acidimetric titration of a 20% aqueous chlorhexidine digluconate solution with perchloric acid	W
SOP TITR-0068 Version 01 03.07.2009	Alkalimetric titration of acetic acid in acetone with sodium hydroxide solution	W
SOP TITR-1521 Version 02 30.06.2010	Acidimetric titration of bisoprolol fumarate with perchloric acid in accordance with European Pharmacopoeia	W

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1.1.11 Determination of organic and inorganic substances in main, secondary and trace amount range using electrochemical methods (potentiometry, polarography, voltammetry, coulometry) **

SOP ORGA-017 (ORGA) + SOP CHR1-0082 (BL) Method pH-0008, Edition 03 04.09.2012	Parameters for the determination of the pH value of a 1 % aqueous solution of 2-ketoleucine calcium salt	W
SOP ORGA-017 in the currently valid version Method pH-0017, Version 03 09.02.2011	Parameter for the Determination of the pH Value of α -Lactose Monohydrate	W
SOP ORGA-017 (ORGA), SOP CHR1-0082 (BL) Method pH-0020, Edition 03 04.09.2012	Parameters for the determination of the pH value of a 1 % aqueous solution of D,L-hydroxymethionine calcium salt	W
SOP 1573 Method 003, Version 03 27.07.2009	Implementation of polarographic and voltammetric measurements with the polarography device Metrohm 797 VA Computrace, polarographic determination of the Fe (II) content in iron sucrose injection solution	M
SOP 1573 Version 03 10.12.2014	Implementation of polarographic and voltammetric measurements with the polarography device Metrohm 797 VA Computrace	M
AN-SAA 0356 Version 3 22.02.1997	Determination of water content in accordance with DIN 51777/1 using Karl Fischer titration	M
AN-SOP 1426 Version 02 20.04.2007	Determination of water content in liquid and solid samples as per Karl Fischer using gas extraction technique	M

1.1.12 Examination of physical indicators of inorganic and organic substances using conventional methods **

SOP 1465 Version 01 02.06.2006	Determination of electrical surface resistance	M
SOP 1825 Version 01 03.02.2009	Determination of the refractive index of transparent liquids using the Abbe refractometer	M

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SOP STO-051 Method 006, Version 01 13.02.2015	Determination of rheological properties with The rheometer MCR 101 Determination of the viscosity of (product name)	W
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1.1.13 Determination of convention parameters of organic and inorganic substances using gravimetry **

SOP ORGA-022 (in the applicable version) Method TROCKEN-0024, Version 03 14.09.2010	Parameters for determination of loss on drying of (product name)	W
SOP ORGA-022-01 Method TROCKEN-0143, Version 01 01.09.2009	Parameters for determination of loss on drying of (2S,4R) N-benzyloxycarbonyl-4-(4-bromoisindoline-2-carboxyloxy)-2-methoxycarbonylpyrrolidine (Cbz-carbamate)	W
SOP ORGA-022 Method Trocken-0169, Edition 01 17.01.2014	Parameter for the determination of the „loss on drying“ for L-Alanyl-L-(p-acetyl)phenylalanine hydrochloride (Ala-PAPA*HCl)	W
SOP EA1-087 Version 02 16.10.2012	Quantitative determination of SiO ₂ content and loss on ignition in precipitated silicas "Sulphate correction method"	W
SOP EA1-092 Version 01 06.06.2011	Gravimetric determination of silicon in silicon oil	W
SOP EA1-053 Version 03 03.06.2015	Determination of loss on drying and ignition in AEROPERL® 300 pharmaceuticals and other AEROSIL® pharmaceutical products	M

1.1.14 Determination of elements using atomic absorption spectroscopy (FI-AAS, CV-AAS, GF-AAS) **

SOP AAS-037 Version 02 27.01.2014	Quantitative determination of Na using AAS in (product name) after microwave digestion	W
SOP AAS-042 Version 01 15.02.2011	Determination of molybdenum in (product name) after oxidative digestion	W

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AN SOP 1912 Version 01 19.03.2013	Determination of sodium content in enoxaparin sodium API with AAS in accordance with USP	M
1.1.15 Determination of elements using plasma atomic spectrometry (ICP-OES) **		
SOP ICPO-045 Version 3 09.09.2013	Determination of silicone oil in protein solutions (product name) using ICP-OES for the company (company name)	W
SOP ICPO-046 Version 01 08.09.2013	Determination of TiO ₂ using ICP-OES after sulphate ashing and acid digestion in (product name) for the company (company name)	W
AN SOP 1922 Version 01 15.04.2014	Determination of phosphorus in ammonium chloride using ICP-OES	M
AN SOP 1944 Version 02 27.01.2014	Determination of ruthenium in (product name) using ICP-OES	M
1.1.16 Determination of elements using plasma mass spectrometry (ICP-MS, DG-MS) **		
SOP SPEA-082 Version 02 07.02.2014	Determination of As, Cd, Cr, Hg, Mo, Ni, Pb, Pd and Pt in HP2EE using ICP-MS after pressure digestion (HPA) for the company (company name)	W
SOP SPEA-084 Version 05 12.05.2014	Determination of Pb, Hg, Bi, Sb, Sn, Cd, Ag, Cu, Mo, V, Pd, Pt, Au, Ru, Fe, Cr and Ni in arsenic(III) oxide with HR-ICP-MS for the company (company name)	W
SOP SPEA-094 Version 02 28.10.2013	Determination of Al in sodium glycerophosphate using ICP-MS after dissolving in nitric acid solution for the company (company name)	W
SOP GDMS-052 Version 02 27.08.2013	Semi-quantitative overview and multi-element analysis of flat Ni and Ni alloys on Finnigan ELEMENT GD	W
1.1.17 Elemental analysis after combustion (detection principle: IR, WLD, IC-LFD) **		
SOP ORGA-045 Method EA-0052, Version 01 01.09.2009	Determination of oxygen with the elemental analyser Eurovector EA3000 – Parameters for the elemental analysis of ketoleucine Ca-salt	W

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SOP ORGA-045 Method EA-0053, Version 01 02.09.2009	Determination of oxygen with the elemental analyser Eurovector EA3000 – Parameters for the elemental analysis of ketophenylalanine Ca-salt	W
SOP ORGA-045 Method EA-0056, Version 01 01.09.2009	Determination of C, H, N, S with the elemental analyser Eurovector EA3000 – Parameters for the elemental analysis of ketoleucine Ca-salt	W
SOP 1875 Method 2, Version 2 13.10.2014	Determination of CHNS S – Determination on Elementar vario EL cube (from Elementar)	M
SOP ELA-001 Version 01 09.11.2004	Quantitative determination of carbon and sulphur in metals, metal oxides and inorganic matrices with the elemental analyser LECO CS 244 or LECO CS 600 C	W
SOP ELA-008-01 04.10.2012	Quantitative determination of carbon and Water in organic and inorganic matrices with the multi-phase analyser RC612	W
AN SAA 1422 Method 04, Version 01 05.11.2007	Determination of CHNOS in organic compounds – Quantitative carbon analysis of (product name) using elemental analysis	M
AN SAA 1422 Method 06, Version 01 14.11.2007	Determination of CHNOS in organic compounds – C, H, N, S – Determination in sulphur-free peptides using elemental analysis	M
AN SOP 1875 Version 1 28.11.2011	Determination of CHNS with the vario EL cube (from Elementar)	M
SOP 1643 Method 04, Version 02 30.11.2010	Determination of halogen using Wickbold – Combustion (solids) F, Cl, Br, I – Determination in	M
AN SOP 1643 Method 05, Version 01 28.11.2011	Determination of sulphur using Wickbold – Combustion (solids) S – Determination	M

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1.1.18 Microscopy

1.1.18.1 Electron microscopic examination for the characterisation of inorganic and organic materials using REM and TEM, and determination of element composition using EDX **

SOP 0641 Method 2, Version 2 29.06.2011	Examination with the scanning electron microscope – REM images of powder samples, e.g. PVC powder	M
SOP EM-001 Version 3 Edition 03/2010 24.03.2010	Scanning electron microscopy (SEM)	W
SOP EM-002 Version 6 Edition 02/2012 23.03.2012	Transmission electron microscopy (TEM) with the Hitachi H-7500	W
SOP EM-006 Version 03 Edition 01/2012 23.03.2012	Analytical transmission electron microscopy (ATEM)	W
SOP OA-006 TP Version 4 20.06.2012	Depth profile analysis	W
AN-SOP 0641 Version 5 31.07.2013	Examination with the scanning electron microscope	M

1.1.18.2 Light microscopic examination for the characterisation of inorganic and organic materials **

AN-SOP 1492 Version 3 27.05.2013	Light microscopic examination for the characterisation of the morphology of materials	M
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1.1.18.3 Electron spectroscopic examination (XPS) for the determination of surface-compositions, functional groups and oxidation states of inorganic and organic materials **

SOP OA-0011 Version 01 17.12.2013	X-ray photoelectron spectrometry Device assignment according to method	W
SOP OA-013 Version 02 11.04.2014	X-ray photoelectron spectrometry on large XPS device ESCALAB 250Xi	W

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1.1.19 Examination using x-ray diffraction (RBA) for the characterisation and phase determination of inorganic and organic materials **

SOP 0637 Method 15, Version 1 01.11.2011	Wide angle x-ray diffraction for the characterisation of the polymorphy of active ingredients Determination of polymorphy of (product name)	W
SOP 0637 Method 14, Version 1 07.09.2011	Determination of crystal modification of the product (product name) using X-ray powder diffraction	W
AN-SOP 0637E Method 20, Version 01 30.12.2013	Identity determination of the polymorphy of the product (product name) using XRPD	W

1.1.20 Determination of thermal properties of inorganic and organic compounds using thermal analysis (dynamic differential scanning calorimetry DSC, thermogravimetric analysis TGA) **

SOP TA-028 Method 001, Version 01 09.05.2014	Dynamic differential calorimetry with the DSC 204 F1 from Netzsch – Determination of the melting peak of otilonium bromide	W
SOP TA-028 Version 01 18.09.2008	Dynamic differential calorimetry with the TM-DSC 204 F1 Phoenix	W
SOP TA-030 Version 01 19.12.2014	Thermogravimetry TG with the micro thermobalance TG 209 F1 Libra from Netzsch	W

1.1.21 Determination of particle size distribution of inorganic and organic materials using laser diffraction, light scattering **

SOP KORN-050 Method 020, Version 01 07.06.2013	Determination of particle size distribution with the Coulter LS 13320 particle size analyser – Determination of particle size distribution of anagrelide	W
SOP KORN-050 Version 02 07.10.2009	Determination of particle size distribution with the Coulter LS 13320 particle size analyser	W
SOP KORN-051 Method 001, Version 02 22.02.2012	Determination of particle size distribution with the Sympatec Helos particle size analyser – Determination of particle size of bisoprolol fumarate	W
SOP KORN-051 Version 02 02.12.2009	Determination of particle size distribution with the Sympatec Helos particle size analyser	W

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SOP KORN-052 Version 01 26.04.2010	Determination of particle size using dynamic light scattering with the Zetasizer Nano ZS	W
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1.1.22 Determination of sorption properties and pore volume of solids by sorption, desorption of test gases **

SOP 1362 Version 02 09.02.2012	Determination of water vapour sorption with the DVS 1000	W
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SOP 1362 Method 004e, Version 02 30.08.2013	Determination of Dynamic Vapour Sorption with the DVS 1000 – Determination of the amorphous content of lactose monohydrate by Dynamic Vapour Sorption	W
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SOP SOR-024 Method 017, Version 01 05.08.2014	Determination of N ₂ sorption isotherms with the sorption measuring device TRISTAR – Determination of the specific surface area of silicon dioxide in accordance with USP 846	W
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SOP SOR-028 Version 1 06.12.2014	Determination of N ₂ sorption isotherms with the sorption measuring device 3Flex	W
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1.2 Examination of hazardous substances (gases, dusts, gas accumulations and aerosols) in air samples (workplace measurements)

1.2.1 Determination of inorganic airborne substances using ion chromatography (IC-LFD, IC-AMP) **

AN-SAA 1376 Method 3, Version 2 27.05.2003	Ion chromatographic determination of acids in air after collection in wash bottles – Short description for the determination of sulphur dioxide and sulphuric acid	M
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AN-SAA 1376 Version 002 28.03.2014	Ion chromatographic determination of acids in air after collection in wash bottles	M
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AN-SOP 0149 Version 2 24.02.2014	Determination of nitric acid in air	M
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1.2.2 Determination of organic airborne substances using gas chromatography (GC-FID, HS-GC, GC-WLD) **

AN-SAA 0877 Method 5, Version 1 15.03.2004	Determination of short-chain hydrocarbons in air using sampling bags and GC analysis – Short description for determination of carbon monoxide in air using sampling bags and GC analysis	M
SOP 0631 Method 28, Version 2 31.03.2006	Gas chromatographic determination of hazardous substances in the trace range in breathing air after thermal desorption, temperature programme from 40 °C – Short description for determination of aromatics after thermal desorption and GC analysis	M
AN-SOP 0631 Version 3 31.03.2006	Gas chromatographic determination of hazardous substances in the trace range in breathing air after thermal desorption, temperature programme from 40°C	M
AN-SAA 0784 Method 007, Version 1 03.04.1996	Gas chromatographic determination of adsorption tubes of collected substances after thermal desorption (initial oven temperature of -10 °C) Short description for the determination of tetrahydrofuran after thermal desorption of Carbosieve/Tenax adsorption tubes	M
AN-SOP 1501 Version 2 22.08.2011	Determination of polycyclic aromatic hydrocarbons in the trace range in air through combined collection on glass fibre filters (by HPLC) and adsorption (by GC)	M
AN-SOP 1903 Version 2 07.04.2015	Determination of butyltin compounds in air	M

1.2.3 Determination of organic airborne substances using HPLC (HPLC-DAD, HPLC-RID, HPLC-UVD, HPLC-FLD, HPLC-ELSD) **

AN-SOP 1501 Version 2 22.08.2011	Determination of polycyclic aromatic hydrocarbons in the trace range in air through combined collection on glass fibre filters (by HPLC) and adsorption (by GC)	M
AN-SOP 1755 Version 1 26.09.1996	Determination of diisocyanates in the trace range in air after collection and derivatisation of impregnated glass filters and quantification using HPLC analysis	M

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AN-SOP 1758 Version 1 21.10.1996	Determination of formaldehyde and other aldehydes in the trace range in air collection and derivatisation of impregnated silica gel tubes and quantification using HPLC analysis	M
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1.2.4 Determination of metals in air, airborne dust using atomic spectrometry (KD-AAS, ICP-OES) **

AN-SOP 1529 Version 1 21.06.2004	Determination of mercury in the trace range in air	M
AN-SOP 1899 Version 1 26.10.2012	Determination of boric acid in air in the framework of workplace measurements using ICP-OES analysis	M
AN-SOP 1911 Version 1 05.02.2013	Determination of sodium tetraborate decahydrate (borax in air in the framework of workplace measurements using ICP-OES analysis)	M

1.2.5 Determination of inorganic airborne substances using photometric methods (UV-VIS) **

AN-SOP 0085 Version 2 10.07.2014	Determination of ammonia in air	M
AN-SOP 1491 Version 2 26.02.2003	Cr (VI) determination for workplace measurements Sample preparation and deviations for determination in accordance with DIN 38405 D24	M

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Abbreviations used:

AAS	Atomic absorption spectrometry
AN-SAA	In-house method at AQura GmbH, Marl location
AN-SOP	In-house method at AQura GmbH, Marl location
BAM	Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing)
DIN	Deutsches Institut für Normung e.V. (German Institute for Standardization)
EN	European standard
IEC	International Electrotechnical Commission
ISO	International Standards Organization
OA	Surface analysis
SOP	Standard operating procedure (in-house method at AQura GmbH)
SPEA	Spectral analysis
TITR	Titration
UN	United Nations
UV-PHO	UV photometry
VDI	Verein Deutscher Ingenieure (Association of German Engineers)
VIS	visible

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