

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-RM-11075-01-00 according to DIN EN ISO 17034:2017

Valid from: 16.02.2024

Date of issue: 16.02.2024

Holder of accreditation certificate:

**Bundesanstalt für Materialforschung und -prüfung (BAM)
Unter den Eichen 87, 12205 Berlin**

with the locations

**Bundesanstalt für Materialforschung und -prüfung (BAM)
Unter den Eichen 87, 12205 Berlin***

**Bundesanstalt für Materialforschung und -prüfung (BAM)
Richard-Willstätter-Straße 11, 12489 Berlin**

*The premises of the management of the conformity assessment body, the central quality management and the information technology services are located at this location.

The reference material producer meets the requirements of DIN EN ISO 17034:2017 to carry out the conformity assessment activities listed in this annex. The reference material producer meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO 17034 are written in the language relevant to the operations of reference material producers and they conform to the principles of DIN EN ISO 9001.

This certificate annex is only valid together with the written accreditation certificate and 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>.

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Reference material production in the fields:

certified reference materials in the form of ferrous and non-ferrous metals and alloys, ceramics and glass, soils, sludge, wood and sediments, food, consumer products, energy and automotive gas mixtures, ethanol/water solutions, aqueous solutions of stable isotopes, lubricants and fuels as well as porous materials

Abbreviations used: see last page

Product	Characteristic	Range	Characterization strategy/ methods
Non-ferrous metals and alloys, e.g. <ul style="list-style-type: none"> • Aluminium* • Copper* • Zinc • Lead 	Element contents	0.1 mg/kg – 997 g/kg	b and c)
Steels*, Irons and Ferro Alloys	Element contents	0.1 mg/kg – 997 g/kg	b and c)
Ceramics and glass	Element contents	0.05 mg/kg – 800 g/kg	b and c)

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Product	Characteristic	Range	Characterization strategy/ methods
Soils, sludge, and sediments	Environmentally relevant element contents	(1 – 1000) mg/kg	b and c)
	Total cyanide contents	(1 – 100) mg/kg	c)
	PAH contents* (e.g., 16 PAH according to EPA)	(0.1 – 200) mg/kg	b)
	PCB contents*	(0.2 – 5) mg/kg	b)
	AOX content	(30 – 500) mg/kg	c)
	Mineral oil contents (sum parameter according to ISO 16703)	(900 – 9000) mg/kg	c)
Food*	Contents of organic contaminants and residues (e.g., mycotoxins, acrylamide)	(0.5 – 1000) µg/kg	b and c)
Consumer products	Contents of organic contaminants and residues (e.g., PAH)	(0.1 – 100) mg/kg	b and c)
Wood	PCP contents	(0.5 – 20) mg/kg	b and c)
Ethanol/water solutions *	Ethanol contents	(0.0 - 3.5) g/L	e)

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Product	Characteristic	Range	Characterization strategy/ methods
Gas mixture for energy gases*	Contents of energy gas components (e.g., helium, hydrogen, nitrogen, carbon monoxide, methane, carbon dioxide, ethylene, ethane, propane, propylene, butanes, pentanes, n-hexane and argon)	(0.0050 – 100) cmol/mol	a)
Gas mixtures for automotive gases*	Contents of automotive gas components (e.g., propane, carbon monoxide, carbon dioxide, hydrogen, oxygen, nitrogen)	(0.0050 – 100) cmol/mol	a)
Aqueous solutions of stable isotopes (e.g., B*, Cd*, Mg*, Pd*, Pt, Pb*)	Isotope amount ratios of stable isotopes	(0.2 - 0.99) mol/mol	a, b, c)
Lubricants and fuels	Mass ratios and mass fractions	(0.01 – 1) g/g	e)
Porous materials * (e.g., oxides, glass, ceramics, zeolites, carbon, metals, metal organic compounds)	BET specific surface area	(0.01 – 3000) m ² /g	c)
	Specific pore volumes	(0.1 – 3.0) cm ³ /g	c)
	Pore diameter	(0.1 - 100 000) nm	c)

* Entries present in CMC database

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Abbreviations used:

AOX	Adsorbed organically bound halogens
BET	Surface determination (according to Brunauer, Emmett and Teller)
CMC	Calibration and measurement capability (entry in annex C of CIPM-MRA)
DIN	Deutsches Institut für Normung e.V. – German institute for standardization
EPA	Environmental Protection Agency
ISO	International Organization for Standardization
PAH	Polycyclic aromatic hydrocarbons
PCB	Polychlorinated biphenyls
PCP	Pentachlorophenol
EN	Europäische Norm – European Standard
IEC	International Electrotechnical Commission
XYZ	In house method of the CAB

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