

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-11118-01-01 according to DIN EN ISO/IEC 17025:2018

Valid from: **08.07.2021**

Date of issue: 06.10.2021

Holder of certificate:

**Ostthüringische Materialprüfgesellschaft für Textil und Kunststoffe mbH Rudolstadt
Breitscheidstraße 97, 07407 Rudolstadt**

Tests in the fields:

**physico-chemical and chemical testing of synthetics and textiles, coatings, colours,
metal products as well as wood and leather;
determination of elements in electrotechnical products;
thermoanalytical testings of polymeric materials;
mechanical-technological, physical-chemical and chemical testing
as well as colour fastness of fibres, filaments, textile fabrics and plastics;
processing, mechanical, thermal and electrical testings of plastics;
biological testings for determination of biocompatibility and antibacterial effectivity
of plastics, materials and textiles**

Within the scope of accreditation marked with *, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standards or equivalent testing methods listed here.

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

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 may be found respectively in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH <https://www.dakks.de/en/content/accredited-bodies-dakks>.*

Abbreviations used: see last page

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

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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 as well as further and new development of testing methods within a selected test range.

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

Within the given testing field marked with *, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the following, the free choice of standard or equivalent testing methods with different issue dates.**

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

1 Physical-chemical and chemical analysis of consumer goods and toys and polymeric materials

1.1 Sample preparation ***

DIN EN 645 1994-01 ***	Paper and board intended to come into contact with foodstuffs; preparation of a cold water extract
DIN EN 647 1994-01 ***	Paper and board intended to come into contact with foodstuffs; preparation of a hot water extract
DIN EN 1811 2015-10 ***	Reference test method for release of nickel from all post assemblies which are inserted into pierced parts of the human body and articles intended to come into direct and prolonged contact with the skin
DIN EN 71-9 2007-09 ***	Safety of toys - Part 9: Organic chemical compounds – Requirements
DIN EN 71-10 2006-03 ***	Safety of toys – Part 10: Organic chemical compounds - Sample preparation and extraction
HV_250_002 2020-09	In house method - regulations for performing microwave pressure digestion
DIN EN 50642 2019-05 ***	Cable management systems - test method for content of halogens

1.2 Determination of organic substances and groups of substances by high-performance liquid chromatography (HPLC) with standard detectors (DAD Detector, FLD-Detector) **

DIN EN ISO 14184-2 2011-12	Textiles - Determination of formaldehyde - Part 2: Released formaldehyde (vapour absorption method) <i>(Deviation: Derivatization with DNPH and HPLC-DAD measurement)</i>
DIN EN ISO 17226-1 2019-04	Leather - Chemical determination of formaldehyde content - Part 1: high performance liquid chromatography
DIN EN ISO 17226-3 2011-09	Leather - Chemical determination of formaldehyde content - Part 3: Determination of formaldehyde emissions from leather
DIN EN 717-3 1996-05	Wood-based panels - Determination of formaldehyde release - Part 3: Formaldehyde release by the flask method <i>(Deviation: Derivatization with DNPH and HPLC-DAD measurement)</i>
VDA 275 1994-07	Shaped components for car-interior - Determination of formaldehyde release - measuring procedure concerning to the modified flask method <i>(Deviation: Derivatization with DNPH and HPLC-DAD measurement)</i>
DIN EN ISO 17234-1 2015-07	Leather - Chemical tests for the determination of certain azo colorants in dyed leathers - Part 1: Determination of certain aromatic amines derived from azo colorants
DIN EN ISO 17234-2 2011-06	Leather - Chemical tests for the determination of certain azo colorants in dyed leathers - Part 2: Determination of 4-aminoazobenzene
DIN EN 71-11 2006-01	Safety of toys - Part 11: Organic chemical compounds - Methods of analysis
DIN EN 14362-1 2017-05	Textiles - Methods for determination of certain aromatic amines derived from azo colorants - Part 1: Detection of the use of certain azo colorants accessible with and without extracting the fibres
DIN EN 14362-3 2017-05	Textiles - Methods for determination of certain aromatic amines derived from azo colorants - Part 3: Detection of the use of certain azo colorants, which may release 4-aminoazobenzene
Vdl-RL 03 2018-02	Determination of the formaldehyde concentration in water-soluble disperse dyes <i>(Deviation: Derivatization with DNPH and HPLC-DAD measurement)</i>

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DIN EN 1541 2001-07	Paper and board intended to come into contact with foodstuffs - Determination of formaldehyde in an aqueous extract <i>(Deviation: Derivatization with DNPH and HPLC-DAD measurement)</i>
BfR - Empfehlung XXI 2016-07	Determination of cleavable formaldehyde in rubber articles
SAA 2.5L215 2015-10	Determination of acetaldehyde in polyester samples by DNPH derivatization and HPLC-DAD measurement in conjunction with ASTM F2013-10
DIN EN 13999-3 2007 + A1 2009-08	Adhesives - Short term method for measuring the emission properties of low-solvent or solvent-free adhesives after application - Part 3: Determination of volatile aldehydes
GM/Opel GMW 15635 2017-07	Determination of Aldehyde and Ketone Emissions from Interior Materials
BMW AA-0061 2014-02	Determination of the emission of formaldehyde from non-metallic materials and components by HPLC
DIN ISO 12219-3 2012-12	Interior air of road vehicles - Part 3: Screening method for the determination of the emissions of volatile organic compounds from vehicle interior parts and materials - Micro-scale chamber method <i>(Deviation: Determination of carbonyl compounds after adsorption on DNPH cartridges and determination with HPLC-DNPH after extraction)</i>
SAA 2.5L005 2019-05	Determination of caprolactam and cyclic oligomer content in polyamide by HPLC
FLTM BZ 156-01 2011-07	Determination of Formaldehyde, Aldehyde and Ketone emissions from non-metallic components, parts and materials in the vehicle interior
VCS 1027, 2739 2004-05	Determination of formaldehyde emission from components in vehicle interiors
VW PV 3925 2009-06	Polymer materials - Measurement of formaldehyde emission

1.3 Determination of organic substances and groups of substances by high-performance liquid chromatography (HPLC) with mass-selective detectors (MS)

HV_250_001 2020-09	In house method - determination of the content of various bisphenols in plastics
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1.4 Determination of organic substances and groups of substances by gas chromatography (GC) with standard detectors (FID detector, ECD-Detector) ***

VDA 277 1995-01	Non-metallic materials of automotive interiors - Determination of the emission of organic compounds
DIN EN 71-11 2006-01***	Safety of toys - Part 11: Organic chemical compounds - Methods of analysis
SAA 2.5L095 2018-01	Determination of diethylene glycol (DEG), ethylene glycol (EG), isophthalic acid (IPA) and cyclohexanedimethanol (CHDM) in PET granules in conjunction with DIN EN 13130-7:2004-08
FLTM BZ 157-01 2011-03	Determination of organic emissions from non-metallic materials in vehicle interiors by headspace gas chromatography
VCS 1027, 2749 2004-05	Determination of organic emissions from non-metallic materials in vehicle interiors
VW PV 3341 1995-03	Non-metallic materials of automotive interiors - Determination of the emission of organic compounds

1.5 Determination of organic substances and groups of substances by gas chromatography with mass spectrometry (GC-MS) **

DIN EN ISO 17234-1 2015-07	Leather - Chemical tests for the determination of certain azo colorants in dyed leathers - Part 1: Determination of certain aromatic amines derived from azo colorants
DIN EN ISO 17234-2 2011-06	Leather - Chemical tests for the determination of certain azo colorants in dyed leathers - Part 2: Determination of 4-aminoazobenzene
DIN EN 71-11 2006-01	Safety of toys - Part 11: Organic chemical compounds - Methods of analysis
DIN EN 14362-1 2017-05	Textiles - Methods for determination of certain aromatic amines derived from azo colorants - Part 1: Detection of the use of certain azo colorants accessible with and without extracting the fibres
DIN EN 14362-3 2017-05	Textiles - Methods for determination of certain aromatic amines derived from azo colorants - Part 3: Detection of the use of certain azo colorants, which may release 4-aminoazobenzene

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DIN EN 62321-6 (VDE 00421-1-6) 2016-05	Determination of certain substances in electrotechnical products - Part 6: Polybrominated biphenyls and polybrominated diphenyl ethers in polymers by gas chromatography-mass spectrometry (GC-MS)
DIN EN 13130-4 2004-08	Materials and articles in contact with foodstuffs - Plastics substances subject to limitation - Part 4: Determination of 1,3-butadiene in plastics
AfPS GS 2019:01 2019-05	Determination of Polycyclic Aromatic Hydrocarbons (PAH) in polymers
SAA 2.5.L144 2018-03	Determination of phthalates in textiles and plastics
CPSC-CH-C1001-09.1 2009-03	Standard Operation Procedure for Determination of Phthalates <i>(Deviation: extraction with dichloromethane)</i>
DIN EN 16453 2014-06	Pulp, paper and paperboard - Determination of phthalates in extracts from paper and paperboard; German version EN 16453:2014
DIN EN ISO 14389 2014-10	Textiles - Determination of the phthalate content - Tetrahydrofuran method <i>(Deviation: extraction with dichloromethane)</i>
DIN CEN ISO/TS 16181:2011-10; DIN SPEC 91181 2011-10	Footwear - Critical substances potentially present in footwear and footwear components - Determination of phthalates in footwear materials
SAA 2.5.L145 2019-08	Determination of selected organotin compounds in textiles and plastics
DIN EN 71-3 2019-08	Safety of toys - Part 3: Migration of certain elements Appendix G Determination of organotin compounds by GC-MS
DIN CEN ISO/TS 16778 2016-10	Determination of dimethylformamide in protective gloves
DIN CEN ISO/TS 16186 2012-12	Footwear - Critical substances potentially present in footwear and footwear components - Test method to quantitatively determine dimethylfumarate (DMFU) in footwear materials
DIN EN 13130-3 2004-08	Materials and articles in contact with foodstuffs - Plastics substances subject to limitation - Part 3: Determination of acrylonitrile in food and food simulants

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BVL B 82.02-8 2001-06	Analysis of consumer goods - Detection and determination of pentachlorophenol in consumer goods, particularly in leather and textiles (Reference method) <i>(Deviation: Extraction with K₂CO₃ solution)</i>
DIN EN 17137 2019-02	Textiles - Determination of the content of compounds based on chlorobenzenes and chlorotoluenes
DIN ISO 12219-3 2012-12	Interior air of road vehicles - Part 3: Screening method for the determination of the emissions of volatile organic compounds from vehicle interior parts and materials - Micro-scale chamber method
VCS 1027, 2759 2006-06	Quantification of specific volatile organic substances from non-metallic materials in vehicle interiors
VDA 278 2011-10	Thermal desorption analysis of organic emissions for the characterization of non-metallic materials for automobiles
DIN EN ISO 17070 2015-05	Leather - Chemical tests - Determination of tetrachlorophenol-, trichlorophenol-, dichlorophenol-, monochlorophenol-isomers and pentachlorophenol content <i>(Deviation: Extraction with K₂CO₃ solution)</i>
SAA 2.5L244 2020-07	Determination of formamide, acetophenone and 2-phenyl-2-propanol by GC/MS

1.6 Determination of elements by atomic emission spectroscopy with inductively coupled plasma (ICP-OES) *

DIN EN ISO 11885 (E 22) 2009-09	Water quality – Determination of 33 elements by inductively coupled plasma atomic emission spectroscopy (ICP-OES) <i>(deviation: matrix: toys, textiles und polymers, digestion with acid)</i>
DIN EN 71-3 2019-08	Safety of toys - Part 3: Migration of certain elements
CPSC-CH-E1001-08 2008-12	Standard Operation Procedure for the Determining Total Lead (Pb) in Children's Metal Products (including Children's Metal Jewellery)
CPSC-CH-E1003-09 2009-04	Standard Operation Procedure for the Determining Lead (Pb) in Paint and Other Similar Surface Coatings
DIN 54233-2 2014-07	Testing of textiles - Determination of metals - Part 2: Determination of extractable metals by hydrochloric acid

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DIN 54233-4 2014-07	Testing of textiles - Determination of metals - Part 4: Determination of extractable metals by synthetic salivary solution
DIN EN 16711-1 2016-02	Textiles - Determination of metal content - Part 1: Determination of metals by microwave digestion
DIN EN 16711-2 2016-02	Textiles - Determination of metal content - Part 2: Determination of extractable metals by acidic artificial perspiration solution
DIN EN ISO 17072-1 2019-07	Leather - Chemical determination of the metal content - Part 1: Extractable metals (ISO 17072-1:2011)
DIN EN ISO 17072-2 2019-07	Leather - Chemical determination of the metal content - Part 2: Total metal content (ISO 17072-2:2011)
DIN EN 1811 2015-10	Reference test method for release of nickel from all post assemblies which are inserted into pierced parts of the human body and articles intended to come into direct and prolonged contact with the skin

1.7 Determination of elements by mass spectrometry with inductively coupled plasma (ICP-MS) *

DIN EN ISO 17294-2 2017-01	Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes <i>(deviation: matrix: toys, textiles and polymers after microwave digestion)</i>
DIN EN 71-3 2019-08	Safety of toys - Part 3: Migration of certain elements
DIN 54233-2 2014-07	Testing of textiles - Determination of metals - Part 2: Determination of extractable metals by hydrochloric acid
DIN EN 16711-1 2016-02	Textiles - Determination of metal content - Part 1: Determination of metals by microwave digestion

1.8 Determination of elements by atomic absorption spectrometry (graphite furnace- and flame AAS) in textiles and leather *

DIN 54233-2 2014-07	Testing of textiles – Determination of metals – Part 2: Determination of extractable metals by hydrochloric acid
DIN 54233-4 2014-07	Testing of textiles - Determination of metals - Part 4: Determination of extractable metals by synthetic salivary solution

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DIN EN 16711-1 2016-02	Textiles - Determination of metal content - Part 1: Determination of metals using microwave digestion
DIN EN 16711-2 2016-02	Textiles - Determination of metal content - Part 2: Determination of extractable metals by acidic artificial perspiration solution
DIN EN ISO 17072-1 2019-07	Leather - Chemical determination of metal content - Part 1: Extractable metals (ISO 17072-1:2011)
DIN EN ISO 17072-2 2019-07	Leather - Chemical determination of metal content - Part 2: Total metal content (ISO 17072-2:2011)

1.9 photometric methods ***

DIN EN ISO 14184-1 2011-12	Textiles - Determination of formaldehyde - Part 1: Free and hydrolysed formaldehyde
DIN EN ISO 17226-2 2019-04	Leather - Chemical determination of formaldehyde content - Part 2: Method using colorimetric analysis
DIN EN ISO 17075-1 2017-05	Leather - Chemical determination of chromium(VI) content in leather - Part 1: Colorimetric method

1.10 Ion chromatography ***

DIN EN ISO 10304-1 (D 20) 2009-07	Water quality - Determination of dissolved anions by liquid chromatography of ions – Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulfate <i>(deviation: digestion solution by O2-combustion)</i>
DIN EN 62321-3-2 VDE 0042-1-3-2 2014-10	Determination of certain substances in electrotechnical products - Part 3: Screening - Total bromine in polymers and electronics by Combustion - Ion Chromatography
DIN EN 71-3 2019-08	Safety of toys - Part 3: Migration of certain elements (Determination of Chromium(VI) by ion chromatography)

1.11 Further methods ***

DIN EN ISO 3071 2006-05	Textiles - Determination of pH of aqueous extract
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DIN EN 62321-3-1 Determination of certain substances in electrotechnical products -
VDE 0042-1-3-1 Part 3-1: Screening - Lead, mercury, cadmium, total chromium and total bromine
2014-10 by X-ray fluorescence spectrometry

2 Determination of elements in electrotechnical products

2.1 by atomic emission spectroscopy with inductively coupled plasma (ICP-OES) *

DIN EN 62321-5 Method for the determination of certain substances in electrotechnical products
VDE 0042-1-5 - Part 5: Cadmium, lead and chromium in polymers and electronics and cadmium
2014-10 and lead in metals by AAS, AFS, ICP-OES and ICP-MS

DIN EN 62321-4 Method for the determination of certain substances in electrotechnical products
VDE 0042-1-4 - Part 4: Mercury in polymers, metals and electronics by CV-AAS, CV-AFS, ICP-
2018-05 OES and ICP-MS

2.2 by atomic absorption spectrometry (graphite furnace- and flame AAS) *

DIN EN 62321-5 Method for the determination of certain substances in electrotechnical products
VDE 0042-1-5 - Part 5: Cadmium, lead and chromium in polymers and electronics and cadmium
2014-10 and lead in metals by AAS, AFS, ICP-OES and ICP-MS

DIN EN 62321-4 Method for the determination of certain substances in electrotechnical products
VDE 0042-1-4 - Part 4: mercury in polymers, metals and electronics by CV-AAS, CV-AFS, ICP-
2018-05 OES and ICP-MS

3 Thermal analysis of polymeric materials ***

DIN EN ISO 11357-1 Plastics - Differential scanning calorimetry (DSC) -
2017-02 *** Part 1: General principles (ISO 11357-1:2009)

DIN EN ISO 11357-2 Plastics - Differential scanning calorimetry (DSC) - Part 2: Determination of glass
2014-07 *** transition temperature and glass transition step height (ISO 11357-2:2013)

DIN EN ISO 11357-3 Plastics - Differential scanning calorimetry (DSC) - Part 3: Determination of
2018-07 *** temperature and enthalpy of melting and crystallization (ISO 11357-3:2013)

DIN EN ISO 11357-6 Plastics - Differential scanning calorimetry (DSC) - Part 6: Determination of
2018-07 *** oxidation induction time (isothermal OIT) and oxidation induction temperature
(dynamic OIT) (ISO 11357-6:2008)

DIN EN ISO 11358-1 Plastics - Thermogravimetry (TG) of polymers - Part 1: General principles (ISO
2014-10 *** 11358-1:2014)

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DIN EN 728 1997-03 ***	Polyolefin pipes and fittings - Determination of oxidation induction time
DIN 51004 1994-06 ***	Thermal analysis (TA) - Determination of melting temperatures of crystalline materials by differential thermal analysis (DTA)
DIN 51006 2005-07 ***	Thermal analysis (TA) - Thermogravimetry (TG) - Principles
DIN 51007 2019-04 ***	Thermal analysis (TA) - differential thermal analysis (DTA) - Principles
VW PV 3927 2017-11	Thermogravimetry (TG) of polymers and elastomer - Determination: plasticiser, carbon

4 Mechanical-technical testing of textiles

4.1 Mechanical-technical testing of fibre materials ***

DIN 53808-1 2003-01	Testing of textiles - Determination of length of fibres by measuring of individual fibres
DIN 53843-2 1988-03	Testing of textiles; loop tensile test for staple fibres
DIN EN ISO 1973 1995-12	Textiles - Determination of linear density - Gravimetric method and vibroscope method
DIN EN ISO 5079 1996-02	Textiles - Fibres - Determination of breaking force and elongation at break of individual fibres

4.2 Mechanical-technical testing of single and plied yarns***

DIN 53830-3 1981-05	Testing of textiles; determination of linear density of single and plied yarns; simple yarns and plied yarns, textured yarns, short length method
DIN 53830-4 1981-05	Testing of textiles; determination of linear density of single and plied yarns; elasto-yarns including core spun yarns from elastofibres; short length method

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DIN 53834-2 1979-01	Testing of textiles; Simple tensile test for single and plied yarns in oven-dry state (<i>withdrawn standard</i>)
DIN 53835-1 1987-01	Testing of textiles; tensile test for testing the elastic behaviour; principles
DIN 53835-2 1981-08	Testing of textiles; determination of the elastic behaviour of single and plied elastomeric yarns by repeated application of tensile load between constant extension limits
DIN 53835-3 1981-08	Testing of textiles; determination of the elastic behaviour of single and plied yarns by a single application of tensile load between constant extension limits
DIN 53835-4 1981-08	Testing of textiles; determination of the elastic behaviour of single and plied yarns by a single application of tensile load between constant force limits
DIN 53842-1 1976-04	Testing of textiles; knot tensile test for single and plied yarns
DIN 53843-1 1992-11	Testing of textiles; loop tensile test; yarns
DIN EN ISO 2060 1995-04	Textiles - Yarn from packages - Determination of linear density (mass per unit length) by the skein method
DIN EN ISO 2061 2015-12	Textiles - Determination of twist in yarns - Direct counting method
DIN EN ISO 2062 2010-04	Textiles - Yarns from packages - Determination of single-end breaking force and elongation at break using constant rate of extension (CRE) tester

**4.3 Geometric testing of textile fabrics *
(fabrics, nonwovens, knits, coated fabrics)**

DIN EN ISO 2286-3 2017-01	Rubber- or plastics-coated fabrics - Determination of roll characteristics - Part 3: Method for determination of thickness
DIN EN ISO 5084 1996-10	Textiles - Determination of thickness of textiles and textile products
DIN EN ISO 9073-2 1997-02	Textiles - Test methods for nonwovens - Part 2: Determination of thickness

4.4 Mechanical-technical testing of textile fabrics*
(fabrics, nonwovens, knits, coated fabrics)**

DIN 53362 2003-10	Testing of plastics films and textile fabrics (excluding nonwovens), coated or not coated fabrics - Determination of stiffness in bending - Method according to Cantilever
DIN 53363 2003-10	Testing of plastic films - Tear test using trapezoidal test specimen with incision
DIN 53863-2 1979-02	Testing of textiles; abrasion test methods for textile fabrics, rotary abrasion test
DIN EN 1049-2 1994-02	Textiles; woven fabrics; construction; methods of analysis; part 2: determination of number of threads per unit length
DIN EN 12127 1997-12	Textiles - Fabrics - Determination of mass per unit area using small samples
DIN EN 29073-3 1992-08	Textiles; test method for nonwovens; part 3: determination of tensile strength and elongation
DIN EN ISO 2286-2 2017-01	Rubber- or plastics-coated fabrics - Determination of roll characteristics - Part 2: Methods for determination of total mass per unit area, mass per unit area of coating and mass per unit area of substrate
DIN EN ISO 3759 2011-08	Textiles - Preparation, marking and measuring of fabric specimens and garments in tests for determination of dimensional change
DIN EN ISO 9073-4 1997-09	Textiles - Test methods for nonwovens - Part 4: Determination of tear resistance
DIN EN ISO 9237 1995-12	Textiles - Determination of permeability of fabrics to air
DIN EN ISO 12945-2 2000-11	Textiles - Determination of fabric propensity to surface fuzzing and to pilling - Part 2: Modified Martindale method
DIN EN ISO 12947-1 2007-04	Textiles - Determination of the abrasion resistance of fabrics by the Martindale method - Part 1: Martindale abrasion testing apparatus
DIN EN ISO 12947-2 2017-03	Textiles - Determination of the abrasion resistance of fabrics by the Martindale method - Part 2: Determination of specimen breakdown
DIN EN ISO 12947-3 2007-04	Textiles - Determination of abrasion resistance of fabrics by the Martindale method - Part 3: Determination of mass loss

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DIN EN ISO 12947-4 2007-04	Textiles - Determination of abrasion resistance of fabrics by the Martindale method - Part 4: Assessment of appearance change
DIN EN ISO 13934-1 2013-08	Textiles - Tensile properties of fabrics - Part 1: Determination of maximum force and elongation at maximum force using the strip method
DIN EN ISO 13937-2 2000-06	Textiles - Tear properties of fabrics - Part 2: Determination of tear force of trouser-shaped test specimens (single tear method)
DIN EN ISO 13937-3 2000-06	Textiles - Tear properties of fabrics - Part 3: Determination of tear force of wing-shaped test specimens (Single tear method)
DIN EN ISO 13937-4 2000-06	Textiles - Tear properties of fabrics - Part 4: Determination of tear force of tongue-shaped test specimens (Double tear test)

5 Mechanical-technical testing of polymeric materials and components, leather and textiles*

Type of test	Measurand / test parameters	Characteristic test methods
Tension, pressure, bending -quasi static-	Pressure and tensile force	DIN EN ISO 527
	Alternation of length traverse up / down	DIN EN ISO 604 DIN EN ISO 178
	Alternation of length extensometer	DIN EN ISO 14125 DIN EN ISO 29073-3 DIN EN ISO 5079 DIN EN ISO 9073-4 DIN EN ISO 13934-1 DIN EN ISO 13937-2,3,4 DIN 53363 DIN 53834-2 DIN 53835-1,2,3,4 DIN 53842-1 DIN 53843-1,2
Tension, pressure, bending -dynamic-	Pressure and tensile force	DIN EN ISO 6603
	Alternation of length piston stroke	
Impact pendulum	Impact energy (Charpy)	DIN EN ISO 179
	Impact energy (IZOD)	DIN EN ISO 180

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DIN EN ISO 178 2013-09	Plastics - Determination of flexural properties
DIN EN ISO 179-1 2010-11	Plastics - Determination of Charpy impact properties - Part 1: Non-instrumented impact test
DIN EN ISO 180 2013-08	Plastics - Determination of Izod impact strength
DIN EN ISO 527-1 2019-12	Plastics - Determination of tensile properties - Part 1: General principles
DIN EN ISO 527-2 2012-06	Plastics - Determination of tensile properties - Part 2: Test conditions for moulding and extrusion plastics
DIN EN ISO 527-3 2019-02	Plastics - Determination of tensile properties - Part 3: Test conditions for films and sheets
DIN EN ISO 527-4 1997-07	Plastics - Determination of tensile properties - Part 4: Test conditions for isotropic and anisotropic fibre-reinforced plastic composites
DIN EN ISO 604 2003-12	Plastics - Determination of compressive properties
DIN EN ISO 6603-2 2002-04	Plastics - Determination of puncture impact behaviour of rigid plastics - Part 2: Instrumented puncture test
DIN EN ISO 14125 2011-05	Fibre-reinforced plastic composites - Determination of flexural properties
DIN EN ISO 29073-3 1992-08	Textiles; test method for nonwovens; part 3: determination of tensile strength and elongation
DIN EN ISO 5079 1996-02	Textiles - Fibres - Determination of breaking force and elongation at break of individual fibres
DIN EN ISO 9073-4 1997-09	Textiles - Test methods for nonwovens - Part 4: Determination of tear resistance
DIN EN ISO 13934-1 2013-08	Textiles - Tensile properties of fabrics - Part 1: Determination of maximum force and elongation at maximum force using the strip method
DIN EN ISO 13937-2 2000-06	Textiles - Tear properties of fabrics - Part 2: Determination of tear force of trouser-shaped test specimens (single tear method)

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DIN EN ISO 13937-3 2000-06	Textiles - Tear properties of fabrics - Part 3: Determination of tear force of wing-shaped test specimens (Single tear method)
DIN EN ISO 13937-4 2000-06	Textiles - Tear properties of fabrics - Part 4: Determination of tear force of tongue-shaped test specimens (Double tear test)
DIN 53363 2003-10	Testing of plastic films - Tear test using trapezoidal test specimen with incision
DIN 53834-2 1979-01	Testing of textiles; Simple tensile test for single and plied yarns in oven-dry state (<i>withdrawn standard</i>)
DIN 53835-1 1987-01	Testing of textiles; tensile test for testing the elastic behaviour; principles
DIN 53835-2 1981-08	Testing of textiles; determination of the elastic behaviour of single and plied elastomeric yarns by repeated application of tensile load between constant extension limits
DIN 53835-3 1981-08	Testing of textiles; determination of the elastic behaviour of single and plied yarns by a single application of tensile load between constant extension limits
DIN 53835-4 1981-08	Testing of textiles; determination of the elastic behaviour of single and plied yarns by a single application of tensile load between constant force limits
DIN 53842-1 1976-04	Testing of textiles; knot tensile test for single and plied yarns
DIN 53843-1 1992-11	Testing of textiles; loop tensile test; yarns
DIN 53843-2 1988-03	Testing of textiles; loop tensile test for staple fibres

6 Colour fastness tests and material tests of plastics and textiles

6.1 Colour fastness tests ***

DIN EN ISO 105-B02 2014-11	Textiles - Tests for colour fastness - Part B02: Colour fastness to artificial light: Xenon arc fading lamp test
DIN EN ISO 105-B04 1997-05	Textiles - Tests for colour fastness - Part B04: Colour fastness to artificial weathering: Xenon arc fading lamp test

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DIN EN ISO 105-B06 2004-07	Textiles - Tests for colour fastness - Part B06: Colour fastness and ageing to artificial light at high temperatures: Xenon arc fading lamp test
DIN EN ISO 105-C06 2010-08	Textiles - Tests for colour fastness - Part C06: Colour fastness to domestic and commercial laundering
DIN EN ISO 105-C10 2007-07	Textiles - Tests for colour fastness - Part C10: Colour fastness to washing with soap or soap and soda
DIN EN ISO 105-D01 2010-10	Textiles - Tests for colour fastness - Part D01: Colour fastness to dry cleaning using perchloroethylene solvent
DIN EN ISO 105-E01 2013-06	Textiles - Tests for colour fastness - Part E01: Colour fastness to water
DIN EN ISO 105-E02 2013-06	Textiles - Tests for colour fastness - Part E02: Colour fastness to sea water
DIN EN ISO 105-E04 2013-08	Textiles - Tests for colour fastness - Part E04: Colour fastness to perspiration
DIN EN ISO 105-E07 2010-08	Textiles - Tests for colour fastness - Part E07: Colour fastness to spotting: Water
DIN EN ISO 105-X12 2016-11	Textiles - Tests for colour fastness - Part X12: Colour fastness to rubbing
DIN EN 20105-A02 1994-10	Textiles - Tests for colour fastness - Part A02: Grey scale for assessing change in colour
DIN EN ISO 105-A03 2020-02	Textiles - Tests for colour fastness - Part A03: Grey scale for assessing staining
DIN 53160-1 2010-10	Determination of the colourfastness of articles for common use - Part 1: Test with artificial saliva
DIN 53160-2 2010-10	Determination of the colourfastness of articles for common use - Part 2: Test with artificial sweat
BVL B 82.10-1 2011-12	Determination of articles in common use; Test of coloured children toys to artificial saliva and sweat
VDA 75202 2001-08	Colour fastness and ageing to artificial light at high temperatures: Xenon-arc fading lamp test

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6.2 Material tests and artificial weathering of plastics and textiles **

DIN EN ISO 1172 1998-12	Textile-glass-reinforced plastics - Prepregs, moulding compounds and laminates - Determination of the textile-glass and mineral-filler content; calcination methods (here: <i>Method A: Determination of the textile-glass content</i>)
DIN EN ISO 3451-1 2019-05	Plastics - Determination of ash - Part 1: General methods (here: <i>Method A: direct burn up</i>)
SAA 3.5.L122 2020-01	Determination of the residue on ignition of plastics
DIN EN ISO 4892-2 2013-06	Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps
DIN 53236 2018-02	Colouring materials - Conditions of measurement and evaluation for the determination of colour differences for paint coatings, similar coatings and plastics
DIN 75220 1992-11	Ageing of automotive components in solar simulation units

6.3 Determination of the fogging behaviour of trim materials in the interior of automobiles by gravimetric and photometric methods **

DIN 75201 2011-11	Determination of the fogging characteristics of trim materials in the interior of automobiles
DIN EN ISO 17071 2011-12	Leather - Physical and mechanical tests - Determination of fogging characteristics
ISO 6452 2007-06	Rubber- or plastics-coated fabrics - Determination of fogging characteristics of trim materials in the interior of automobiles
VW PV 3015 2019-03	Non-metallic materials of the interior of automobiles Determination of the condensable components
GMW 3235 2016-08	Fogging Characteristics of Trim Materials
SAE J 1756 2006-08	Determination of the Fogging Characteristics of Interior Automotive Materials

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VOLVO STD 420-0003 Fogging - Organic Materials
2014-06

7 Testing of processing, thermal and electrical properties of plastics

7.1 Determination of processing and thermal properties of plastics ***

DIN EN ISO 1133 2005-09	Plastics - Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics (<i>withdrawn standard, replaced by DIN EN ISO 1133-1 and DIN EN ISO 1133-2</i>)
DIN EN ISO 1133-1 2012-03	Plastics - Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics - Part 1: Standard method
DIN EN ISO 1133-2 2012-03	Plastics - Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics - Part 2: Method for materials sensitive to time-temperature history and / or moisture
DIN EN ISO 75-2 2013-08	Plastics - Determination of temperature of deflection under load - Part 2: Plastics and ebonite (<i>here: procedure A and B</i>)
DIN EN ISO 306 2014-03	Plastics - Thermoplastic materials - Determination of Vicat softening temperature (VST)
DIN 53497 2017-04	Testing of plastics - Hot storage test on mouldings made of thermoplastic moulding materials without external mechanical stressing

7.2 Testing of electrical properties of plastics ***

DIN IEC 60093 1993-12	Methods of test for insulating materials for electrical purposes; volume resistivity and surface resistivity of solid electrical insulating materials (withdrawn standard)
DIN EN 60112 IEC 60112 2010-05	Method for the determination of the proof and the comparative tracking indices of solid insulating materials (VDE - regulation)
DIN EN 60695-2-10 VDE 0471 Teil 2-10 2014-04	Fire hazard testing - Part 2-10: Glowing / hot-wire based test methods - Glow-wire apparatus and common test procedure

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DIN EN 60695-2-11 VDE 0471 Teil 2-11 2014-11	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (GWEPT)
DIN EN 60695-2-12 VDE 0471 Teil 2-12 2015-01	Fire hazard testing - Part 2-12: Glowing/hot-wire based test methods - Glow-wire flammability index (GWFI) test method for materials
DIN EN 60695-2-13 VDE 0471 Teil 2-13 2015-01	Fire hazard testing - Part 2-13: Glowing/hot-wire based test methods - Glow-wire ignition temperature (GWIT) test method for materials
DIN EN 62631-3-1 2017-01	Dielectric and resistive properties of solid insulating materials - Part 3-1: Determination of resistive properties (DC methods) - volume resistance and volume resistivity - general method
DIN EN 62631-3-2 2016-10	Dielectric and resistive properties of solid insulating materials - Part 3-2: Determination of resistive properties (DC Methods) - surface resistance and surface resistivity

7.3 Determination of the horizontal burning rate of interior materials in motor vehicles **

DIN 75200 1980-09	Determination of burning behaviour of interior materials in motor vehicles
ISO 3795 1989-10	Road vehicles, and tractors and machinery for agriculture and forestry - Determination of burning behaviour of interior materials
FMVSS 302 2017-10	Flammability of interior materials
VW TL 1010 2008-01	Materials for vehicle interiors; burning behavior, material requirements
BMW GS 97038 2016-03	Determination of burning behaviour to automotive interior trim materials
DBL 5307 Pkt. 6.1 2019-07	Supply specification Flame retardant properties - Interior trim parts - Requirements and test specifications <i>(here: 6.1 Test to determine the horizontal burning rate of interior components, materials and material systems)</i>

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GMW 3232 2016-12	Test Method for Determining the Flammability of Interior Trim Materials
VCS 5031,19 2018-05	Flammability of Interior Materials
Porsche PTL 8501 2018-08	Vehicle Interior Flammability Requirements and Testing (VW 96243)

7.4 Determination of the odour characteristics of trim materials in motor vehicles **

VDA 270 2018-06	Determination of the odour characteristics of trim materials in motor vehicles
PV 3900 2019-04	Vehicle Interior Components: Odor Test
VOLVO STD 429-0001 2005-01	Odour of trim materials in vehicles
GMW 3205 2016-08	Determining the Resistance to Odor Propagation of Interior Materials

7.5 Determination of strength and hardness of plastics ***

DIN EN ISO 2039-1 2003-06	Plastics - Determination of hardness - Part 1: Ball indentation method
DIN 53435 1983-07	Testing of Plastics - Bending test and impact test on dynstat test pieces

7.6 Determination of density and bulk density of plastics ***

DIN EN ISO 845 2009-10	Cellular materials of rubber and plastics - Determination of bulk density
DIN EN ISO 1183-1 2019-09	Plastics - Methods for determining the density of non-cellular plastics - Part 1: Immersion method, liquid pycnometer method and titration method

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DIN EN ISO 1183-3 Plastics - Methods for determining the density of non-cellular plastics -
2000-05 Part 3: Gas-pycnometer method

7.7 Determination of water absorption and of the effects of immersion in liquid chemicals of plastics***

DIN EN ISO 62 Plastics - Determination of water absorption
2008-05

DIN EN ISO 175 Plastics - Methods of test for the determination of the effects of immersion in
2011-03 liquid chemicals

8 Biological testing for determination of the antimicrobial activity and biocompatibility

8.1 Antimicrobial tests of textile products, plastics and materials*

ISO 22196 Measurement of antibacterial activity on plastics and other non-porous surfaces
2011-08

DIN EN ISO 20743 Textiles - Determination of antibacterial activity of textile products
2013-12

8.2 Biocompatibility testing of materials

DIN EN ISO 10993-5 Biological evaluation of medical devices –
2009-10 Part 5: Tests for *in vitro* cytotoxicity

OECD 431 *In Vitro* Skin Corrosion: Reconstructed Human Epidermis (RHE) Test Method
2016-07

OECD 439 *In Vitro* Skin Irritation: Reconstructed Human Epidermis Test Method
2015-07

Abbreviations used:	
AfPS GS	Committee for product safety of Federal Institute for Occupational Safety and Health
BfR	Federal Institute for Risk Assessment
BVL	Federal Office for Consumer Protection and Food Safety
BMW AA	BMW (Bayerische Motoren Werke Aktiengesellschaft) operation procedure
BMW GS	BMW (Bayerische Motoren Werke) Group Standard
CEN	Comité Européen de Normalisation (European commission for Standardization)
CPSC	United States Consumer Product Safety Commission
DBL	Mercedez-Benz Supply Specification
DIN	German Institute for Standardization
DIN SPEC	Development of Specifications: no consolidation of all interested parties and therefore substantially faster than Standardization
EN	European Standard
F008	OMPG-form F008 (service offer)
FLTM	Ford Laboratory Test Method
FMVSS	Federal Motor Vehicle Safety Standard
GM/Opel	General Motors / Opel General Motors Worldwide Standards
HV	In-house method of the Ostthüringische Materialprüfgesellschaft für Textil und Kunststoffe mbH
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
OECD	Organisation for Economic Co-operation and Development
SAA	Standard Operating Procedure of Ostthüringische Materialprüfgesellschaft für Textil und Kunststoffe mbH
PTL	Porsche Technical Terms of Delivery
SAE	Society of Automotive Engineers
VCS	Volvo Car Corporation Standard
VDA	German Association of the Automotive Industry
VDE	German Association of Electrical Engineering Technicians
VdL-RL	German Association of Lacquer- and print colours industry r.a. - guideline
VW PV	Volkswagen test procedure
VW TL	Volkswagen corporate standard