ECHA
EUROPEAN CHEMICALS AGENCY
Forum For Exchange Of Information On Enforcement

Compendium of analytical methods Recommended by the Forum to check compliance with Reach annex xvii restrictions

March 2016
Version 1.0

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Validity
The present document is intended as a dynamic document. It will be revised at regular intervals to reflect changing technical standards, new available methods as well modifications of existing ones. The revisions will be published on ECHA website.

ECHA Forum invites interested parties to submit additional information to be incorporated in future updates of this document. These can be submitted via forum@echa.europa.eu.

Version	Changes	Date
Version 1.0	First edition	March 2016

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Reference: ECHA-15-R-18-EN
ISBN: 978-92-9247-648-9
DoI: 10.2823/399943
Date: March 2016
Language: English

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Preface

The ECHA Forum aims at contributing to harmonised enforcement of Regulation (EC) No 1907/2006 – REACH, throughout the EU. Working in this framework the ECHA Forum decided to create a living database containing analytical methods that it recommends to check compliance with Annex XVII restrictions under REACH.

The purpose of this document is to provide a ready reference of some available analytical methods that authorities or industry may use in order to assess the compliance of chemicals manufactured, used or placed on the European market to the restrictions set forth in Annex XVII to REACH.

These methods for the analysis of chemicals are a collection of methods in use in the official laboratories supporting the Member States enforcement systems and in other laboratories linked to some stakeholders organisations consulted for this purpose.

A data gathering survey amongst the cited parties was followed by an assessment conducted by expert members of the ECHA Forum Working Group on enforceability of restrictions. The methods have been scrutinised against performance requirements agreed by the Forum[1] and taking into consideration the available information on sample preparation and analysis protocols and techniques. The methods judged suitable for checking compliance with restrictions are listed in this Compendium of analytical methods recommended by the ECHA Forum for checking compliance with REACH Annex XVII restrictions, hereinafter referred to as "Compendium".

The Compendium encompasses:

- Official methods (with references published in REACH legal text);
- Standard methods (published by International, European or National standardisation bodies);
- Methods published by a recognised technical organisation, a national or EU reference laboratory (EPA, etc.);
- Internal methods developed by the respondent laboratories.

The methods included in the Compendium are recommended by the ECHA Forum to be used in the verification of compliance with the restrictions in order to ensure the quality and comparability of the analytical results.

The Compendium of analytical methods recommended by the ECHA Forum for the enforcement of REACH restrictions is a tool offered by the Forum that all can use voluntarily thus evolving towards further harmonisation in the EU. Enforcement authorities, industry and public can benefit from such information.

1 Forum methodology for recommending analytical methods for enforcement of REACH Annex XVII restrictions, a summary is published at the Forum website echa.europa.eu/web/guest/about-us/who-we-are/enforcement-forum

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1. Introduction to the Compendium

Article 67(1) of the REACH Regulation restricts the manufacture, placing on the market and use of certain hazardous substances, mixtures and articles. The dutyholders whose activities are subject to REACH restrictions should at all times be capable to check accurately and reliably if they comply with these obligations, for preventing negative impact of their activities on public health, on worker protection, on the environment, as well as on the free circulation of chemicals on the internal market.

National enforcement authorities (NEAs) assess activities of the above natural and legal persons in the EU being their primary goal to detect violations of the communal acquis, for example, the restrictions enumerated in Annex XVII to REACH.

In this context, the common need of all the parties is to determine accurately and reliably whether or not there is compliance with REACH restrictions.

In addition, aiming at a level playing field in the EU, it is desirable that natural and legal persons are subject to a harmonised surveillance approach wherever in the EU territory. Few entries in Annex XVII to REACH specify which analytical method must be applied for checking the requirement set out in the restriction. That is why EU Member States have adopted over the past decennia analytical methods to be used by their NEAs, for those restrictions where no official analytical method is specified in the legal text.

Some restrictions do not contain a limit value that needs to be checked, the so-called no-limit-value restrictions (NLV) and a case-by-case analysis is appropriate in those cases. To date, according to the experts of the Forum WG on the enforceability of restrictions, it remains unclear which analytical method should be applied for checking compliance with a NLV-restriction. As a consequence, those restrictions are currently covered in this compendium with certain limitations.

In 2009, the European Commission invited the ECHA Forum members to communicate which analytical methods for checking compliance with REACH Annex XVII restrictions were accepted in their country. A compilation of the replies received constituted a first database of methods. This first inventory indicated that the number and variety of analytical methods used in different Member States were huge and in most of the cases a method accepted in one Member State was not automatically accepted by another Member State, thus the harmonised enforcement of REACH Annex XVII restrictions could be jeopardized. In June 2010, the Forum concluded on the need to produce a compendium for suitable analytical methods recommended to be used for the enforcement of restrictions.

2. Rationale and methodology

With the view of producing guidance for suitable analytical methods for the enforcement of restrictions, as preliminary criteria for recommending methods, the Forum agreed the recommended methods should preferable be standardised ones. If such methods are not available, other methods can be used.

The ECHA Forum has mandated a team of experts working under the supervision of the ECHA Forum (Forum WG Group on Enforceability of Restrictions) to first conceive a methodology for recommending analytical methods for enforcing REACH restrictions.

The Forum methodology to recommend analytical methods for checking the compliance with REACH restrictions consisted first in the definition of a set of functional qualities (characteristics) of an analytical method. General principles applied in widely accepted international standards have been considered and a set of key performance characteristics have been identified for the purpose of assessing the suitability of an analytical method to check compliance with restrictions.

The characteristics identified are: applicability, limit of detection, recovery, reproducibility and measurement uncertainty. For each of the selected characteristics, the Forum agreed upon generally acceptable performance requirements for analytical methods to be recommended. Widely accepted criteria have been applied to define the requirements for the considered characteristics of an analytical method to be suitable for checking compliance with REACH Annex XVII restrictions.

Due to the broad ranges of products covered by REACH Annex XVII, and to the different limit values (including a total ban for certain substances) set forth in different REACH Annex XVII entries a case-by-case approach is applied where appropriate. The Forum also addressed the issue of NLV restrictions and adopted, as short term solution for assessing methods for NLV restrictions, to include in the Compendium the methods for which the applicability criteria are met and which show low limit of detection (LOD). Official methods (published in REACH legal text) are also included in the Compendium. Finally, while recognizing that for enforcement purpose a qualitative method cannot be conclusive and a confirmatory analysis is needed, the Forum decided to include in the Compendium qualitative analytical methods or techniques, with relevant LOD value accompanied by a note to make explicit reference to the qualitative method.

The adopted Forum methodology was then implemented by the same experts to elaborate the Compendium of analytical methods recommended by the Forum for the enforcement of REACH Annex XVII restrictions.

A data gathering survey was conducted among EU Member States and ECHA Accredited Stakeholders and, on the basis of the methodology, the reported analytical methods have been scrutinised by the Working Group with the aim of selecting objectively methods fit for the purpose. As foreseen by the adopted methodology, in few cases an expert judgment was applied and the selected methods have been considered suitable for the purpose of detecting the restricted substance, notwithstanding they slightly deviate from the performance requirements agreed upon by the ECHA Forum.

3. How to consult the Compendium

TThe Compendium table in Chapter 4 of this document is divided in as many sections as there are entries in REACH Annex XVII.

Each table section contains:

- The entry number followed by the substance or group of substances (analytes) under the scope of the restriction;
- The sub-entry number followed by the substance or group of substances (analytes) and the matrix or products under the scope of the restriction;
- The substance (analyte) under the scope of the reported method;
- The matrix or product under the scope of the reported method;

- The analytical method reported in the same format as referenced by regulations, standardization bodies or recognized technical organisations. Please note that for laboratory developed method the term "internal method" is used;
- The source for internal methods;
- The analytical technique or techniques;
- The sample preparation, if available;
- A note reporting the type of method. The methods "A" are fully adherent with the performance requirements agreed upon by the ECHA Forum; the methods "B" slightly deviate from the performance requirements agreed upon by the ECHA Forum; the methods "C" are official methods included in REACH legal text; the methods "D" are qualitative methods followed by the available LOD.

Note for qualitative methods

Qualitative methods are analytical methods which allow to identify the presence of a substance on the basis of its chemical, biological or physical properties. These methods do not enable a conclusive judgement for enforcement purpose and entail a confirmatory analysis.

For some entries, the Compendium contains qualitative analytical methods (or techniques, when this is the only available information) accompanied with available LOD values. Those methods are marked as "D" in the column "note".

In general, according to the Forum methodology it is not possible to conclude on the recommendability of the qualitative methods. A qualitative method could be used to screen potential non-compliant goods but a positive result cannot be conclusive for enforcement purpose and a confirmatory analysis is deemed necessary.

For a better consultation of the Compendium table please refer also to Appendix 1 to this document, which contains the list of abbreviation and relevant definitions of terms used in the document.

4. Compendium of analytical methods recommended by the Forum to check compliance with REACH Annex XVII Restrictions

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
1. Polychlorinated terphenyls (PCTs)								
	1.substances/mixtures including waste oils, equipment							
		PCT	non-aqueous liquids	Internal method	DIN EN 12766	GC-ECD	SPE	B
2. Chloroethene (vinyl chloride) CAS No 75-01-4 ; EC No 200-831-0								
	2.Propellant in aerosols							
		vinyl chloride	gas	Internal method	DIN EN ISO 6401	GC-FID or GC-MS	no	A
3. Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F; (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1.								
	3.3. liquid substances or mixtures							
		liquid substance and mixtures	non-aqueous liquids	DIN 51562 Viscometry - Measurement of kinematic viscosity by means of the Ubbelohde viscometer		viscometry	without	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
4. Tris (2,3 dibromopropyl) phosphate CAS No 126-72-7								
	4.1. Textile articles							
		Tris (2,3 dibromopropyl) phosphate	textiles	Internal method	DIN EN 16377	GC-MS	solvent extraction	A
		Tris (2,3 dibromopropyl) phosphate	textiles, plastics	Internal method	DIN EN 71 - safety of toys, part 10	GC-MS	extraction with acetonitrile, filtration	A
5. Benzene CAS No 71-43-2								
	5.1 and 5.2 Toys /parts of toys							
		Benzene	polymers/toys	ASTM D4526-12		HS GC-FID	Extraction	A
		Benzene	toys	DIN EN 71-11		GC-MS	Headspace or Purge & Trap	A
		Benzene	toys	MSZ EN 71-11:2006		GC-MS	Extraction	A
	5.3 substances/mixtures							
		Benzene	mixtures of xylenes	ASTM D 6563-2012		GC-FID	n.d	A
		Benzene	cynoacrylate glues	Internal method	CY-SGL method "METH 11 01 11", accredited according to EN ISO 17025:2005	GC-MS	Dilution in acetone	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Benzene	mixtures	EPA 8260C		GC-MS	EPA Method 5035A (solvent extraction - water dilution) / EPA Method 5021 (Headspace analysis)	A
6. Asbestos fibres (a) Crocidolite CAS No 12001-28-4 (b) Amosite CAS No 12172-73-5 (c) Anthophyllite CAS No 77536-67-5 (d) Actinolite CAS No 77536-66-4 (e) Tremolite CAS No 77536-68-6 (f) Chrysotile CAS No 12001-29-5 CAS No 132207-32-0								
	6.1. Fibres / articles							
		Crocidolite	Asbestos fibres (only in solid samples)	NIOSH 9002		PLM (polarized microscopy)		A
		Amosite	Asbestos fibres (only in solid samples)	NIOSH 9002		PLM (polarized microscopy)		A
		Anthophyllite	Asbestos fibres (only in solid samples)	NIOSH 9002		PLM (polarized microscopy)		A
		Actinolite	Asbestos fibres (only in solid samples)	NIOSH 9002		PLM (polarized microscopy)		A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Tremolite	Asbestos fibres (only in solid samples)	NIOSH 9002		PLM (polarized microscopy)		A
		Chrysotile	Asbestos fibres (only in solid samples)	NIOSH 9002		PLM (polarized microscopy)		A
		Asbestos	construction material/soil/ powder			SEM-EDS	Depending on the sample	N/A
7. Tris(aziridinyl)phosphinoxide CAS No 545-55-1 ; EC No 208-892-5								
	7.1. and 7.2. Textile articles							
		Tris(aziridinyl) phosphinoxide	textiles	Internal method	DIN EN 16377	GC-MS	solvent extraction	A
8. Polybromobiphenyls; Polybrominatedbiphenyls (PBB) CAS No 59536-65-1								
	8.1. and 8.2. Textile articles							
		PBBs	textiles	Internal method	DIN EN 16377	GC-MS	solvent extraction	A
12. 2-Naphthylamine CAS No 91-59-8 ; EC No 202-080-4 and its salts								
	12. substances/mixtures							
		2-Napthylamine	liquids: Tattoo inks and pmu products; solids: leather	EN ISO 17234-1:2010		GC-MS	Reduction with sodium ditionite and extraction with MTBE	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
13. Benzidine CAS No 92-87-5 ; EC No 202-199-1 and its salts								
	13. substances/mixtures							
		Benzidine	liquids: Tattoo inks and pmu products; solids: leather	EN ISO 17234-1:2010		GC-MS	Reduction with sodium ditionite and extraction with MTBE	A
18. Mercury compounds								
	18. substances and mixtures							
		Mercury	paints, preservation of wood	ISO 3856/7-1984		HG-AAS	acid extraction	A
		Mercury	paints			XRF/XRD		D /5%
18a. Mercury CAS No 7439-97-6 EC No 231-106-7								
	18a.1. Substance							
		Mercury	pure element	Internal method	AMA 254 by Altec Ltd. 2002	AAS	homogenisation	A
		Mercury	solids, solutions, apparel products	EPA 7473		AAS		A
19. Arsenic compounds								
	19.1. and 19.2. Substances and mixtures							
		Arsenic	paints	ISO 17294-2				D / 0.05 %
	19.3. wood							

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
20. Organostannic compounds								
	20.1, 20.2 and 20.3 substances/mixtures							
		Organostannic compounds	paints	Internal method	ISO 17353	GC-MS/MS		B
	20.4 substances in articles							
		Tri-substituted organostannic compounds						
	20.5 substances in mixtures and articles							
		Dibutyltin (DBT) compounds						
	20.6 substances in articles							
		Dioctyltin (DOT) compound						
21. Di-μ-oxo-di-n-butylstanniohydroxyborane/Dibutyltin hydrogen borate C8H19BO3Sn (DBB)								
	substances/mixtures							

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
22. Pentachlorophenol CAS No 87-86-5 ; EC No 201-778-6 and its salts and esters								
	22. substances/constituent of substances /mixtures							
		Pentachlorophenol	liquids and solids	EN 12673		GC-MS	liquid: derivatisation and SPE . Solids: soxhlet extraction and derivatisation	A
		Pentachlorophen	solids	Internal method	US EPA 8041, US EPA 3500, DIN ISO 14154	GC-MS	Direct injection (extraction and derivatization)	A
		Pentachlorophen	aqueous liquids	Internal method	US EPA 8041, US EPA 3500, ČSN EN 12673	GC-MS	Direct injection (extraction and derivatization)	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
23. Cadmium CAS No 7440-43-9 EC No 231-152-8 and its compounds								
	23.1 Cadmium in plastic material							
		Cadmium	plastics	DIN EN 62321; VDE 0042-1:2009-12:2009-12 Electrotechnical products - Determination of levels of six regulated substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers) (IEC 62321:2008); German version EN 62321:2009		ICP-MS (IS-method)	1. shred the material to pieces <5mm 2. transfer 100mg material to microwave vessel and add 5ml HNO3 and 2ml H2O2) 3. microwave digestion 4. dilute to 50ml with H2O 5. add internal standard and dilute to appropriate concentration range	A
		Cadmium	plastics	Internal method	EN-1122	FLAME ATOMIC ABSORPTION	Acid (c. H2SO4 and c. HNO3) digestion in a microwave oven	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Cadmium	plastics	Internal method	EN-1122	FLAME ATOMIC ABSORPTION	Acid (c. H2SO4 and c. HNO3) digestion in a microwave oven	A
		Cadmium	plastics	Internal method	plastic: PN-EN 1122:2004 Plastics. Determination of cadmium. Wet decomposition method;	AAS	plastic: digestion in muffle oven	A
		Cadmium	plastics (not polyfluorinated plastic)	Internal method	SFS-EN 1122:2001: Plastics.Determination of cadmium. Wet decomposition method.	ICP-OES	Wet digestion with concentrated H2SO4 and 30 % H2O2. After digestion sample is diluted with water.	A
	23.8 Brazing fillers and 23.10 Jewellery							
		Cadmium	metals, alloys, metal coatings	Internal method	ICP-OES) (ISO 11885:2007) БДС EN ISO 11885:2009	ICP-OES	Microwave decomposition of the matrix to acid solution of cations	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Cadmium	metals	Internal method	Electrotechnical products. Determination of levels of six regulated substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers)	AAS	metal: acid digestion in open vessel	A
		Total Cadmium	plastics, paints, aqueous liquids, wood, leather, paper and metals			EDXRF		D / 50 ppm
24. Monomethyl — tetrachlorodiphenyl methane ; Trade name: Ugilec 141 ; CAS No 76253-60-6								
	24.1. substances/mixtures							
		Monomethyl — tetrachlorodiphenyl methane Trade name: Ugilec 141	non-aqueous liquids	Internal method	DIN EN 12766	GC-ECD	SPE	A
25. Monomethyl-dichloro-diphenyl methane ; Trade name: Ugilec 121 ; Ugilec 21								
	25. substances/mixtures							
		Monomethyl-dichloro-diphenyl methane Trade name: Ugilec 121 Ugilec 21	non-aqueous liquids	Internal method	DIN EN 12766	GC-ECD	SPE	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
26. Monomethyl-dibromo-diphenyl methane bromobenzylbromotoluene, mixture of isomers ; Trade name: DBBT ; CAS No 99688-47-8								
	26. substances/mixtures							
		Monomethyl-dibromo-diphenyl methane bromobenzyl bromotoluene, mixture of isomers Trade name: DBBT;	non-aqueous liquids	Internal method	DIN EN 12766	GC-ECD	SPE	A
27. Nickel CAS No 7440-02-0 EC No 231-111-4 and its compounds								
	27. 1 and 27.2 substance in 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							
		Nickel	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	EN 1811:2011 + A1:2015 - OJ C 14 of 15/01/2016 p. 110				C

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Nickel	parts of spectacle frames and sunglasses intended to come into close and prolonged contact with the skin	EN 16128:2011 - OJ C 14 of 15/01/2016 p. 110				C
		Nickel	simulation of wear and corrosion for the detection of nickel release from coated items	EN 12472:2005 + A1:2009- OJ C 14 of 15/01/2016 p. 110				C
28. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as carcinogen category 1A or 1B (Table 3.1) or carcinogen category 1 or 2 (Table 3.2) and listed as follows: - Carcinogen category 1A (Table 3.1)/carcinogen category 1 (Table 3.2) listed in Appendix 1; - Carcinogen category 1B (Table 3.1)/carcinogen category 2 (Table 3.2) listed in Appendix 2								
	28.1. substances/constituents of substances/mixtures							
		Benz(a)anthracene	solids	Internal method	US EPA 8270	GC-MS	Direct injection (Extraction technique)	A
		Benz(a)anthracene	liquids	Internal method	US EPA 8270, EN ISO 6468	GC-MS	Direct injection (Extraction technique)	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Benzene	solids	Internal method	US EPA 8260, US EPA 5021A, US EPA 5021, US EPA 8015, MADEP 2004, rev. 1.1, ISO 15009	HSGC-MS or HSGC-FID	Headspace (sample is extracted with defined volume of methanol, aliquot volume of sample is transferred into the headspace vial with defined volume of water and internal standards are added)	A
		Benzo(a)pyrene	solids	Internal method	US EPA 8270,	GC-MS	Direct injection (Extraction technique)	A
		Benzo(a)pyrene	liquids	Internal method	US EPA 8270, EN ISO 6468	GC-MS	Direct injection (Extraction technique)	A
		Benzo(b)fluoranthene	solids	Internal method	US EPA 8270	GC-MS	Direct injection (Extraction technique)	A
		Benzo(b)fluoranthene	liquids	Internal method	US EPA 8270, EN ISO 6468	GC-MS	Direct injection (Extraction technique)	A
		Benzo(k)fluoranthene	solids	Internal method	US EPA 8270	GC-MS	Direct injection (Extraction technique)	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Benzo(k)fluoranthene	liquids	Internal method	US EPA 8270, EN ISO 6468	GC-MS	Direct injection (Extraction technique)	A
		Chrysene	solids	Internal method	US EPA 8270	GC-MS	Direct injection (Extraction technique)	A
		Chrysene	liquids	Internal method	US EPA 8270, EN ISO 6468	GC-MS	Direct injection (Extraction technique)	A
		Dibenz(a.h)anthracene	solids	Internal method	US EPA 8270	GC-MS	Direct injection (Extraction technique)	A
		Dibenz(a.h)anthracene	liquids	Internal method	US EPA 8270, EN ISO 6468	GC-MS	Direct injection (Extraction technique)	A
		1.2-Dibromo-3-Chloropropane	solids	Internal method	US EPA 8260, US EPA 5021A, US EPA 5021, US EPA 8015, MADEP 2004, rev. 1.1, ISO 15009	HSGC-MS or HSGC-FID	Headspace (sample is extracted with defined volume of methanol, aliquot volume of sample is transferred into the headspace vial with defined volume of water and internal standards are added)	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		1.2-Dibromoethane (EDB)	solids	Internal method	US EPA 8260, US EPA 5021A, US EPA 5021, US EPA 8015, MADEP 2004, rev. 1.1, ISO 15009	HSGC-MS or HSGC-FID	Headspace (sample is extracted with defined volume of methanol, aliquot volume of sample is transferred into the headspace vial with defined volume of water and internal standards are added)	A
		1.2-Dichloroethane	solids	Internal method	US EPA 8260, US EPA 5021A, US EPA 5021, US EPA 8015, MADEP 2004, rev. 1.1, ISO 15009	HSGC-MS or HSGC-FID	Headspace (sample is extracted with defined volume of methanol, aliquot volume of sample is transferred into the headspace vial with defined volume of water and internal standards are added)	A
		Hexachlorobenzene (HCB)	solids	Internal method	US EPA 8081	GC-ECD	Liquid extraction	A
		Hexachlorobenzene (HCB)	liquids	Internal method	US EPA 8081	GC-ECD	Liquid extraction	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Trichloroethene	solids	Internal method	US EPA 8260, US EPA 5021A, US EPA 5021, US EPA 8015, MADEP 2004, rev. 1.1, ISO 15009	HSGC-MS or HSGC-FID	Headspace (sample is extracted with defined volume of methanol, aliquot volume of sample is transferred into the headspace vial with defined volume of water and internal standards are added)	A
		Vinyl chloride	solids	Internal method	US EPA 8260, US EPA 5021A, US EPA 5021, US EPA 8015, MADEP 2004, rev. 1.1, ISO 15009	HSGC-MS or HSGC-FID	Headspace (sample is extracted with defined volume of methanol, aliquot volume of sample is transferred into the headspace vial with defined volume of water and internal standards are added)	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
29. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as germ cell mutagen category 1A or 1B (Table 3.1) or mutagen category 1 or 2 (Table 3.2) and listed as follows: — Mutagen category 1A (Table 3.1)/ mutagen category 1 (Table 3.2) listed in Appendix 3 ; — Mutagen category 1B (Table 3.1)/ mutagen category 2 (Table 3.2) listed in Appendix 4								
	29.1. substances/constituents of substances/mixtures							
		Benzene	solids	Internal method	US EPA 8260, US EPA 5021A, US EPA 5021, US EPA 8015, MADEP 2004, rev. 1.1, ISO 15009	HSGC-MS or HSGC-FID	Headspace (sample is extracted with defined volume of methanol, aliquot volume of sample is transferred into the headspace vial with defined volume of water and internal standards are added)	A
		Benzo(a)pyrene	solids	Internal method	US EPA 8270	GC-MS	Direct injection (Extraction technique)	A
		Benzo(a)pyrene	liquids	Internal method	US EPA 8270, EN ISO 6468	GC-MS	Direct injection (Extraction technique)	A
		1.2-Dibromo-3-Chloropropane	solids	Internal method	US EPA 8260, US EPA 5021A, US EPA 5021, US EPA 8015, MADEP 2004, rev. 1.1, ISO 15009	HSGC-MS or HSGC-FID	Headspace (sample is extracted with defined volume of methanol, aliquot volume of sample is transferred into the headspace vial with defined volume of water and internal standards are added)	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
30. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as toxic to reproduction category 1A or 1B (Table 3.1) or toxic to reproduction category 1 or 2 (Table 3.2) and listed as follows: - Reproductive toxicant category 1A adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 1 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 5 - Reproductive toxicant category 1B adverse effects on sexual function and fertility or on development (Table 3.1) or reproductive toxicant category 2 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 6								
	30.1. substances/constituent of substances/mixtures							
		Benzo(a)pyrene	solids	Internal method	US EPA 8270	GC-MS	Direct injection (Extraction technique)	A
		Benzo(a)pyrene	liquids	Internal method	US EPA 8270, EN ISO 6468	GC-MS	Direct injection (Extraction technique)	A
		Bis(2-ethylhexyl) phthalate	solids	Internal method	US EPA 8061	GC-MS	Direct injection (Extraction technique)	A
		Bis(2-ethylhexyl) phthalate	liquids	Internal method	US EPA 8061	GC-MS	Direct injection (Extraction technique)	A
		Butyl benzyl phthalate	solids	Internal method	US EPA 8061	GC-MS	Direct injection (Extraction technique)	A
		Butyl benzyl phthalate	liquids	Internal method	US EPA 8061	GC-MS	Direct injection (Extraction technique)	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		1.2-Dibromo-3-Chloropropane	solids	Internal method	US EPA 8260, US EPA 5021A, US EPA 5021, US EPA 8015, MADEP 2004, rev. 1.1, ISO 15009	HSGC-MS or HSGC-FID	Headspace (sample is extracted with defined volume of methanol, aliquot volume of sample is transferred into the headspace vial with defined volume of water and internal standards are added)	A
		Di-isobutylphthalate	solids	Internal method	US EPA 8061	GC-MS	Direct injection (Extraction technique)	A
		Di-isobutylphthalate	liquids	Internal method	US EPA 8061	GC-MS	Direct injection (Extraction technique)	A
		Di-n-butyl phthalate	solids	Internal method	US EPA 8061	GC-MS	Direct injection (Extraction technique)	A
		Di-n-butyl phthalate	liquids	Internal method	US EPA 8061	GC-MS	Direct injection (Extraction technique)	A
		Di-pentylphthalate	solids	Internal method	US EPA 8061	GC-MS	Direct injection (Extraction technique)	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Di-pentylphthalate	liquids	Internal method	US EPA 8061	GC-MS	Direct injection (Extraction technique)	A
		1.2.3-Trichloropropane	solids	Internal method	US EPA 8260, US EPA 5021A, US EPA 5021, US EPA 8015, MADEP 2004, rev. 1.1, ISO 15009	HSGC-MS or HSGC-FID	Headspace (sample is extracted with defined volume of methanol, aliquot volume of sample is transferred into the headspace vial with defined volume of water and internal standards are added)	A
31. (a) Creosote; wash oil CAS No 8001-58-9 EC No 232-287-5 (b) Creosote oil; wash oil CAS No 61789-28-4 EC No 263-047-8 (c) Distillates (coal tar), naphthalene oils; naphthalene oil CAS No 84650-04-4 EC No 283-484-8 (d) Creosote oil, acenaphthene fraction; wash oil CAS No 90640-84-9 EC No 283-484-8EC No 292-605-3 (e) Distillates (coal tar), upper; heavy anthracene oil CAS No 65996-91-0 EC No 266-026-1 (f) Anthracene oil CAS No 90640-80-5 EC No 292-602-7 (g) Tar acids, coal, crude; crude phenols CAS No 65996-85-2 EC No 266-019-3 (h) Creosote, wood CAS No 8021-39-4 EC No 232-419-1 (i) Low temperature tar oil, alkaline; extract residues (coal), low temperature coal tar alkaline CAS No 122384-78-5 EC No 310-191-5								
	31.1. substances/mixtures/wood							
		benz(a)pirene, PAHs, phenol	wood	MSZ EN 1014-3:1999*; MSZ 1014-4:1999*		HPLC-UV or HPLC-FLD	solid-liquid extraction and SPE	A
		benz(a)pirene, PAHs, phenol	aqueous liquids	EPA 550.1; MSZ 1484-9:2009		HPLC-UV or HPLC-FLD	SPE	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
32. Chloroform CAS No 67-66-3 EC No 200-663-8								
	32.1. substances/constituents of substances / mixtures							
		Chloroform	cyanoacrylate glues	Internal method	CY-SGL method "METH 11 01 11", accredited according to EN ISO 17025:2005	GC-MS	Dilution in acetone	A
		Chloroform	aqueous liquids	Internal method	US EPA 8260, US EPA 5021A, US EPA 5021, US EPA 8015, MADEP 2004, rev. 1.1, ISO 15009	HSGC-MS or HSGC-FID	Headspace (no-extraction step, sample is just transferred into the headspace vial and internal standards are added)	A
		Chloroform	mixtures (non-aqueous and aqueous liquids)	EPA METHOD 8260C		GC-MS	EPA Method 5035A (solvent extraction - water dilution) / EPA Method 5021 (Headspace analysis)	A
34. 1,1,2-Trichloroethane CAS No 79-00-5 EC No 201-166-9								
	34.1. substances/constituents of substances / mixtures							
		1,1,2-Trichloroethane	mixtures (non-aqueous and aqueous liquids)	EPA METHOD 8260C		GC-MS	EPA Method 5035A (solvent extraction - water dilution) / EPA Method 5021 (Headspace analysis)	A
		1,1,2-Trichloroethane	adhesives, paints,			GC-MS	- 0,05 g sample / 100 ml solvent	D / 0.04%

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
35. 1,1,2,2-Tetrachloroethane CAS No 79-34-5 EC No 201-197-8								
	35.1. substances/constituents of substances / mixtures							
		1,1,2,2-Tetrachloroethane	mixtures (non-aqueous and aqueous liquids)	EPA METHOD 8260C		GC-MS	EPA Method 5035A (solvent extraction - water dilution) / EPA Method 5021 (Headspace analysis)	A
		1,1,2,2-	adhesives, paints,			GC-MS	- 0,05 g sample / 100 ml solv.	D / 0.04%
		Tetrachloroethane	aqueous liquids	Internal method	US EPA 624, US EPA 8260	HSGC-MS or HSGC-FID	Headspace (no-extraction step, sample is just transferred into the headspace vial and internal standards are added)	A
		1,1,2,2-Tetrachloroethane	aqueous liquids	Internal method	US EPA 624, US EPA 8260	HSGC-MS or HSGC-FID	Headspace (no-extraction step, sample is just transferred into the headspace vial and internal standards are added)	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
36. 1,1,1,2-Tetrachloroethane CAS No 630-20-6								
	36.1. substances/constituents of substances / mixtures							
		1,1,1,2-Tetrachloroethane	aqueous liquids	Internal method	US EPA 624, US EPA 8260	HSGC-MS or HSGC-FID	Headspace (no-extraction step, sample is just transfered into the headspace vial and internal standards are added)	A
		1,1,1,2-Tetrachloroethane	mixtures (non-aqueous and aqueous liquids)	EPA METHOD 8260C		GC-MS	EPA Method 5035A (solvent extraction - water dilution) / EPA Method 5021 (Headspace analysis)	A
		1,1,1,2-Tetrachloroethane	adhesives, paints,			GC-MS	- 0,05 g sample / 100 ml solv.	D / 0.04%
37. Pentachloroethane CAS No 76-01-7 EC No 200-925-1								
	37.1. substances/constituents of substances / mixtures							
		Pentachloroethane	adhesives, paints,			GC-MS	- 0,05 g sample / 100 ml solv.	D / 0.04%

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
38. 1,1-Dichloroethene CAS No 75-35-4 EC No 200-864-0								
	38.1. substances/constituents of substances / mixtures							
		1,1-Dichloroethene	aqueous liquids	Internal method	US EPA 624, US EPA 8260	HPLC-UV or HPLC-FLD	Headspace (no-extraction step, sample is just transferred into the headspace vial and internal standards are added)	A
		1,1-Dichloroethene	mixtures (non-aqueous and aqueous liquids)	EPA METHOD 8260C		GC-MS	EPA Method 5035A (solvent extraction - water dilution) / EPA Method 5021 (Headspace analysis)	A
		1,1-Dichloroethene	adhesives, paints,			GC-MS	- 0,05 g sample / 100 ml solv.	D / 0.04%
43. Azocolourants and Azodyes								
	43.aromatic amines listed in Appendix 8 of REACH in textile and leather articles or dyed parts thereof							
		4-aminoazobenzene	leather	EN ISO 17234-1 2010				C
			leather	EN ISO 17234-2:2011				C
			textiles	EN 14362-1:2012				C
			textiles	EN 14362-3:2012				C

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
45. Diphenylether, octabromo derivative C12H2Br80								
	45.1. substances / constituents of substances / mixtures							
	45.2. articles / flame-retardant parts of articles							
		PBBs	textiles	DIN EN 16377		GC/MS	solvent extraction	B
47. Chromium VI compounds								
	47.1. Cement and cement containing mixtures							
		Chromium VI	cement and cement containing mixtures	EN 196-10:2006 - OJ C23, 28.1.2005, p.8				C
48. Toluene CAS No 108-88-3; EC No 203-625-9								
	48. (substances / mixtures) in adhesives or spray paints							
		Toluene	cyanoacrylate glues	Internal method	CY-SGL method "METH 11 01 11", accredited according to EN ISO 17025:2005	GC-MS	Dilution in acetone	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Toluene	paints	PN-EN ISO 11890-2:2013-06E		GC-FID	preparation of the sample according to PN-EN-ISO 1513:2010P, analysis according PN-EN ISO 11890-2:2013-06E extraction of toluene from paints using methanol and dichloromethane (2:3); centrifugation of the sample	A
		Toluene	adhesives and spray paints	Internal method	PN-EN ISO 11890-2	GC-FID or GC-MS	Sample (1-2g) was weighed in a tube with accuracy of 0,01mg and diluted with an appropriate amount of solvent. The content of the tube was then homogenized by vortexing.	A
49. Trichlorobenzene CAS No 120-82-1 ; EC No 204-428-0								
	49. substances / mixtures							
		1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene	mixtures (non-aqueous liquids)	EPA METHOD 8260C		GC-MS	EPA Method 5035A (solvent extraction - water dilution) / EPA Method 5021 (Headspace analysis)	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Trichlorobenzene	adhesives, paints,			GC-MS	- 0,05 g sample / 100 ml solv.	D / 0.04%
50.Polycyclic-aromatic hydrocarbons (PAH) (a) Benzo[a]pyrene (BaP) CAS No 50-32-8 (b) Benzo[e]pyrene (BeP) CAS No 192-97-2 (c) Benzo[a]anthracene (BaA) CAS No 56-55-3 (d) Chrysen (CHR) CAS No 218-01-9 (e) Benzo[b]fluoranthene (BbFA) CAS No 205-99-2 (f) Benzo[j]fluoranthene (BjFA) CAS No 205-82-3 (g) Benzo[k]fluoranthene (BkFA) CAS No 207-08-9 (h) Dibenzo[a,h]anthracene (DBAhA) CAS No 53-70-3 2								
	50.1. Extender oils							
		Polycyclic aromatic extract (PCA)	extender oils	Petroleum Standard IP346:1998. This standard can be used only until 23 September 2016				C
		PAH	extender oils	EN 16143:2013				C
	50.2. Tyres and treads for retreading							
		Bay protons	vulcanised rubber	ISO 21461 (Rubber vulcanised – Determination of aromatic oil in vulcanised rubber compounds)				C

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
52. The following phthalates (or other CAS- and EC numbers covering the substance): (a) Di-'isononyl' phthalate (DINP) CAS No 28553-12-0 and 68515-48-0 ; EC No 249-079-5 and 271-090-9 (b) Di-'isodecyl' phthalate (DIDP) CAS No 26761-40-0 and 68515-49-1 EC No 247-977-1 and 271-091-4 (c) Di-n-octyl phthalate (DNOP) CAS No 117-84-0 EC No 204-214-7								
	52.1 Plasticised materials for toys and childcare articles production; 52.2 Plasticised materials in toys and childcare article							
		DINP DIDP DNOP	plastics	sample preparation: EN 14372:2005 (non PVC plastics) and SW05OF01 (PVC) + instrumental analysis IT07EC01	SW05OF01: SANDRA BIEDERMANN-BREM, MAURUS BIEDERMANN, KATELL FISELIER, & KONI GROB; Compositional GC-FID analysis of the additives to PVC, focusing on the gaskets of lids for glass jars; Food Additives and Contaminants, December 2005; 22(12): 1274–1284 IT07EC01: Z. Ezerskisa, V. Morkunas, M. Suman, C. Simoneau; Analytical screening of polyadipates and other plasticisers in poly(vinyl chloride) gasket seals and in fatty food by gas chromatography–mass spectrometry; analytica chimica acta; 6 0 4 (2 0 0 7); 29–38	GC coupled with MS	sample preparation: EN 14372:2005 (non PVC plastics) and SW05OF01 (PVC) + instrumental analysis IT07EC01 EN 14372:2005: Soxhlet extraction of the plastic with diethylether SW05OF01: Dissolution of the PVC in tetrahydrofuran, precipitation PVC by ethanol	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		DINP DIDP DNOP	plastic toys, FCMA	Internal method	ČSN EN 15777	GC-ECD, GC-MS	Soxhlet extraction in diethylether	A
		DINP DIDP DNOP	plastics	CPSC-CH-C1001-09.1		GC/MS	solvent extraction	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		DINP DIDP DNOP	PVC toys and childcare products	Internal method	Sample preparation: 1. USA Test Method: CPSC-CH-C1001-09.1 (2009), USA Test Method: CPSC-CH-C1001-09.3 (2010) 2. Plasicizers in PVC Toys and Childcare Products: What Succeeds the Phthalates? Market Survey 2007, Sandra Biedermann-Brehm, Maurus Biedermann, Susanne Pfenninger, Martin Bauer, Werner Altkofer, Karls Rieger, Urs Hauri, Christian Droz, Koni Grob, Chromatographia 2008, 68, August (No. ¾), Vieweg + Teuber, GWV Fachverlage GmbH. Analytical method:VDI 4301 Blatt 6:2012-09 Measurement of indoor air pollution - Measurement of phthalates with GC/MS (VDI guideline)			

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		DINP DIDP DNOP	PVC in toys and childcare articles	Internal method	EN 12586:2007 + A1: 2011Child use and care articles. Soother holder. Safety requirements and test methods	GC-MS	Softeners are extracted from the plastic with diethyl ether. Extracted softeners are diluted with cyclohexane and analyzed with GC-MS.	A
		DNOP	toys and childcare articles;- plastics	Internal method	1) G.O. Adewuyi et al. The pacific J. Of Science and Technology, Vol.13 (2), 2012: 251; 2) Ying-Sing Fung et al., Fresenius J.Anal.Chem. (1994) 350: 721-723; 3) S.Marten, M.Naguschewski, Knauer Application Note 05/2010; 4) Y.J.Yao et al., Env. Mon. And Ass. 19: 83-91, 1991	HPLC-UV	Sample preparation CPSC-CH-C1001-09.3 + instrumental analysis IT12ML01 Extraction with organic solvent (Tetrahydrofuran)	A
		DINP DIDP DNOP	PVC	Internal method	CPSC-CH-C1001-09.2	GC-MS	Dissolve in tetrahydrofuran and precipitate in hexane	A
		DINP DIDP DNOP	paints, plastics, paper, textiles	CPSC-CH-C1001-09.3		GC-MS	MW extraction followed by GC-MS with internal standard	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
54. 2-(2-methoxyethoxy)ethanol (DEGME) CAS No 111-77-3 ; EC No 203-906-6								
	54. Constituent of paints, paint strippers, cleaning agents, self-shining emulsions or floor sealants							
		2-(2-methoxyethoxy) ethanol (DEGME)	paints, paint strippers, cleaning agents, self-shining emulsions and floor sealants	Internal method	DIN 55682:200-12 ; DIN 55683:2009-08	GC-MS	Solvent extraction	A
55. 2-(2-butoxyethoxy)ethanol (DEGBE) CAS No 112-34-5 EC No 203-961-6								
	55.1. Constituent of spray paints or spray cleaners in aerosol dispensers							
		2-(2-butoxyethoxy) ethanol (DEGBE)	spray paints or spray cleaners in aerosol dispensers	Internal method	DIN 55682:200-12 ; DIN 55683:2009-08	GC-MS	solvent extraction	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
56. Methylenediphenyl diisocyanate (MDI) CAS No 26447-40-5 EC No 247-714-0								
	56.1. Constituent of mixtures							
		Methylenediphenyl diisocyanate	adhesives and sealants including hotmelts, One Component Foams (OCF) in pressurized cans, semi-solid products and pre-polymers	Internal method	Humberto E. Ferreira, José Condeço, Inês Fernandes, David Duarte and João Bordado, HPLC-UV and HPLC-ESI+-MS/MS analysis of free monomeric methylene diphenyl diisocyanate in Polyurethane Foams and Prepolymers after stabilization with NBMA a new derivatizating agent , Anal. Methods, 2014, Accepted Manuscript, 2014, DOI: 10.1039/C4AY01163E	Sample prep conducted in ambient air, with anhydrous acetonitrile dissolution. Pre-column derivatization with an excess of secondary aromatic amine (N - MethylBenzylA mine or NBMA), without catalist, for 90 minutes, followed by an HPLC separation, with UV254nm detection and quantitation. The method does not use toluene, xylene, DMF, DMSO or chlorinated solvents.	Sample prep conducted in ambient air, with anhydrous acetonitrile dissolution of 1500mg aliquote, or 600mg aliquote (pre-polymers). Pre-column derivatization with a 5 times molar excess of secondary aromatic amine (N-MethylBenzylA mine or NBMA), without catalist, for 90 minutes. Dilutions in acetonitrile.	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Methylenediphenyl diisocyanate	adhesives and sealants including hotmelts, One Component Foams (OCF) in pressurized cans, semi-solid products and pre-polymers	Internal method	Humberto E. Ferreira, José Condeço, Inês Fernandes, David Duarte and João Bordado, HPLC-UV and HPLC-ESI+-MS/MS analysis of free monomeric methylene diphenyl diisocyanate in Polyurethane Foams and Prepolymers after stabilization with NBMA a new derivatizating agent , Anal. Methods, 2014, Accepted Manuscript, 2014, DOI: 10.1039/C4AY01163E	Sample prep conducted in ambient air, with anhydrous acetonitrile dissolution. Pre-column derivatization with an excess of secondary aromatic amine (N-MethylBenzylA mine or NBMA), without catalist, for 90 minutes, followed by an HPLC separation, with Mass Spectrometry detection, identification and quantitation (MS/MS). The method does not use toluene, xylene, DMF, DMSO or chlorinated solvents.	Sample prep conducted in ambient air, with anhydrous acetonitrile dissolution of 1500mg aliquote, or 600mg aliquote (pre-polymers). Pre-column derivatization with a 5 times molar excess of secondary aromatic amine (N-MethylBenzylA mine or NBMA), without catalist, for 90 minutes. Dilutions in acetonitrile.	A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
57. Cyclohexane CAS No 110-82-7 EC No 203-806-2								
	57.1. Constituent of neoprene-based contact adhesives							
		Cyclohexane	neoprene-based contact adhesives	DIN EN ISO 10301 (F4)		HSGC-ECD or HSGC-MS	Purge & Trap or HS	B
		Cyclohexane	adhesives, paints,			GC-MS	- 0,05 g sample / 100 ml solv.	D / 0.04%
58. Ammonium nitrate (AN) CAS No 6484-52-2 EC No 229-347-8								
	58.1. (Substances / mixtures) for use as a solid fertilizer, straight or compound							
		Nitrogen	hydrochloric acid solution of ammonium nitrate	BSS EN15750:2010 Method A; BSS 5172:1989 т.4.2		Distillation apparatus. Automatic titrator.	Reduction, hydrolysis, distillation, titration	A
		Nitrogen	aqueous solution of ammonium nitrate	BSS EN15475:2009; BSS 5172:1989 т.4.2		Distillation apparatus. Automatic titrator.	Distillation, titration	A
		Nitrogen		Calculative method according to 2003/2003, Annex IV method 2.6.2		Calculative method		A

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Nitrogen	aqueous solution of carbamide and ammonium nitrate	BSS EN15750:2010 Method A; BSS 1378:1977 т.3.1		Distillation apparatus. Automatic titrator.	Reduction, hydrolysis, distillation, titration	A
59. Dichloromethane CAS No 75-09-2 EC No: 200-838-9								
	59.1. Paint strippers							
		Dichloromethane	mixtures (non-aqueous liquids)	EPA METHOD 8260C		GC-MS	EPA Method 5035A (solvent extraction - water dilution) / EPA Method 5021 (Headspace analysis)	A
		Dichloromethane	adhesives, paints,			GC-MS	- 0,05 g sample / 100 ml solv.	D / 0.04%
60. Acrylamide CAS No 79-06-1								
	Substance / mixtures							
		Acrylamide	aqueous extract of solid samples	EPA 8032A		GC-ECD	brominated derivative extraction into ethyl acetate	A
61. Dimethylfumarate (DMF) CAS No 624-49-7 ; EC 210-849-0								
	Articles / parts thereof							
		Dimethylfumarate	leather, desiccant, textiles	Internal method	1.Biomed, Chromatograpy, 2011;25, 1315-1318 2.ISO/TS 16186	HPLC-DAD	1,000 g extraction in methanol in an ultrasonic bath for 60 min	B

Restriction (Annex XVII entry number and analyte/s covered)	Restriction (Annex XVII sub entry: paragraph number, analyte and matrix/product covered)	Analyte	Matrix/Product	Analytical method	Reference for internal methods	Analytical technique	Sample preparation	Note
		Dimethylfumarate	shoes/ leather/ plastics	Internal method	ISO/TS 16186	GC-MS	1g sample + 10 ml acetone + Istd	A
		Dimethylfumarate	leather and textiles			HPLC-DAD	Extraction with methanol	D / 0.02 [mg/kg]
63. Lead CAS No 7439-92-1 ; EC No 231-100-4 and its compounds								
	63.1. Individual parts of jewellery articles							
		Lead	metals	Internal method	Aufschluss: - ASU §64 LFGB K 84.00-29 (2011) Messung: - J. Nölte: ICP-Emissionsspektrometrie für Praktiker, Wiley-VCH Verlag GmbH, Weinheim, 2002 - DIN EN ISO 11885: 2008 (D)	ICP-OES	ASU §64 LFGB K 84.00-29 (2011) (ca. 100 mg Material + 3 ml HNO3 + 0,5 ml HCl bei 200°C in Mikrowelle)	A
		Lead	metals	EPA 6020A		ICP-MS	EPA 3051A: microwave digestion with HNO3 and HCl 3:1	A
		Lead	metals			XRF or XRD		D / Lead 0.01% Lead compounds 5 %

Appendix 1- Glossary

1. LIST OF ACRONYMS

Term or abbreviation	Definition
AAS	Atomic absorption spectroscopy
ASTM standards	Standards developed by the American Society for Testing and Materials
DAD	Diode array detector
DIN standards	Standards developed by the "Deutsches Institut für Normung" (German Institute for Standardisation)
ECD	Electron capture detector
ECHA	European Chemicals Agency
EDXFR	Energy dispersive X-ray fluorescence
EI	Electron Ionisation
EN Standards	Standards developed by the European Committee for Standardisation
EU	European Union
FID	Flame ionisation detector
GC-ECD	Gas chromatography with electron capture detector
GC-FID	Gas chromatography with flame ionisation detector
GC-MS	Gas chromatography mass spectrometry
HG-AAS	Hydride generator atomic absorption spectroscopy
HPLC	High performance liquid chromatography
HPLC-DAD	High performance liquid chromatography diode array detector
HPLC-FLD	High-performance liquid chromatography with fluorescence detection
HSGC	Headspace gas chromatography
ICP-MS	Inductively coupled plasma mass spectroscopy
ICP-OES	Inductively coupled plasma optical emission spectroscopy
ISO standards	Standards developed by the International Organisation for Standardisation

Term or abbreviation	Definition
LOD	Limit of detection
MS	Mass Spectrometry
MSZ standard	Standard developed by the Hungarian Standards Institution
MTBE	Methyl Tertiary Butyl Ether
NEA	National enforcement authority
NIOSH	National Institute for Occupational Safety and Health of the United States of America
NLV	REACH Annex XVII restrictions without a limit value
PBB	Polybrominated biphenyl
PCA	Polycyclic aromatics
PMU products	Permanent Makeup Products
PVC	Polyvinyl chloride
REACH	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
SEM-EDS	Scanning Electron Microscopy and Energy Dispersive Spectrometry
SPE	Solid Phase Extraction
US EPA	Environmental Protection Agency of the United States of America
UV	Ultraviolet
XRD	X-ray diffraction
XRF	X-ray fluorescence

2. KEY TERMS

Applicability: the set of information about the identity of analyte(s), the concentration range and the kind of matrix/material/item of a specific analytical method for its intended application.

Limit of detection (LOD): the lowest concentration or mass of an analyte, which can be detected with acceptable certainty, even though it cannot be quantified with acceptable precision.

Measurement uncertainty: the non-negative parameter characterising the dispersion of the quantity values being attributed to a measure and based on the information used

Qualitative methods: analytical methods which allow to identify the presence of a substance on the basis of its chemical, biological or physical properties. These methods do not enable a conclusive judgement for enforcement purpose and entail a confirmatory analysis

Performance characteristic: functional quality that can be attributed to an analytical method. This may be for instance accuracy, trueness, precision, repeatability, reproducibility, recovery, LOD and LOQ.

Performance requirements: requirements for a performance characteristic according to which it can be judged that the analytical method is fit for the purpose and generates reliable results.

Recovery: the fraction of the analyte that is recovered after addition of a known amount of the analyte, under defined conditions to the sample, when the test sample is analysed using the entire method.

Reproducibility: precision under reproducibility conditions, namely the distribution of measurement results obtained under reproducibility conditions.

Reproducibility conditions: conditions where test results are obtained with the same method on identical test items in different laboratories with different operators using different equipment.

Screening methods: analytical methods that are used to detect the presence of a substance or class of substances at the level of interest. These methods have the capability for a high sample throughput and are used to sift large numbers of samples for potential non-compliant results.

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ECHA-15-R-18-EN - ISBN: 978-92-9247-648-9 - DOI: 10.2823/399943