BY MALENE BIRGER

Restricted Substance List

Part 1.4

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CHANGE LOG FOR BY MALENE BIRGER RESTRICTED SUBSTANCE LIST NOVEMBER 2018

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7	Introduction	Up-dated with Brand specific contact persons
8	1.4.1 Legislation	Title changed, and clause divided in 1.4.1a & 1.4.1b, as USA – California Proposition 65 legislation has been added
8	1.4.1A EU Legislation REACH	Clause changed from 1.4.1 to 1.4.1a
9	1.4.1B USA – California Proposition 65	Clause 1.4.1b Legislation regarding Prop 65 has been added
9	1.4.2 Compliance	Reference to California Proposition added
13	Nominated laboratory	Appendix changed from 03 to 04

Page	Cas No.	Substance	Change/Amendment
17-18	-	AZO dye table	4 AZO dyes added, they are on the CMR fast track and from 2020 these dyes will be restricted according to Annex XVII, entry 72. Footnotes updated
21	80-05-7	BPA (4,4'-isopropyllidenediphenol)	Typing error - Cas no. corrected. Test method changed
21	-	Carcinogenic Dyestuffs	3 disperse dyes, they are on the CMR fast trach and from 2020 these dyes will be restricted according to REACH, Annex XVII, entry 72. Footnote up-dated accordingly.
22	101-68-8	(MDI) Diphenylmethane diisocyanate	Regulation and reference to REACH, Annex XVII, entry 56 for MDI added
25	50-00-0	Formaldehyde	From 2020, formaldehyde will be restriction according to Annex XVII, entry 72. Footnote added
27	-	Metal restriction – Extractable (Textile & Leather)	REACH reference added for Arsenic & Lead. SVHC column updated. From 2020, Arsenic and its compounds, Cadmium and its compounds, Lead and its compounds, Chromium VI compounds will be restricted according to REACH Annex XVII, entry 72. Footnote added
28	-	Metal restriction – Extractable (Metal & Plastic)	REACH reference added for Arsenic & Chromium VI. SVHC column updated for Arsenic
30	-	Metal restriction - Jewelry	REACH reference added for Arsenic. SVHC column updated
31	75-01-4	Vinyl chloride	EN ISO test method added
32	-	N-Nitrosamines	Test methods updated
32	-	Perfluorinated and Polyfluorinated Chemicals (PFCs)	Title changed from PFOS/PFOA to: Perfluorinated and Polyfluorinated Chemicals (PFCs)
33	-	Polycyclic Aromatic Hydrocarbons (PAH's)	SVHC column updated for 3 PAHs & one proposed for inclusion. From 2020, 8 PAHs will be restricted according to REACH Annex XVII, entry 72. Footnote updated accordingly
35 - 36	-	Phthalate table	From 2020 5 Phthalates will be regulated according to REACH Annex XVII, entry 72. Footnote added accordingly
Page	**Cas No.**	**Substance**	**Change/Amendment**

37	-	Chlorinated Organic Carriers (COC)	Title changed from Chlorinated aromatic Hydrocarbons. Reference to REACH, Annex XVII, entry 64 added. From 2020, 3 Chlotinated Toluenes will be restricted according to REACH, Annex XVII, entry 72 Trace limit changed to 1mg/kg for all.
38	-	Non-halgogenated Aliphatic Solvents	From 2020, DMAC, NMP & DMFa will be restricted according to REACH, Annex XVII, entry 72
38	71-43-2	Benzene	From 2020, Benzene will be restricted according to REACH, Annex XVII, entry 72
38	108-88-3	Toluene	Typing error – to be entry 48 and not entry 5: In REACH Annex XVII, entry 48
39	91-22-5	Quinoline	Substance added. From 2020, Quinoline will be restricted according to REACH, Annex XVII, entry 72
41	Various	Organotin Compounds	TCyHT & TPT added to list according to REACH Annex XVII, entry 50
42	-	Phenols (Chlorinated Phenols)	Test method for Wood added.
42	90-43-7	(OPP) o-Phenylphenol	Reference to Biocide directive 98/8/EC added
44	312600-89-8	Cu-HDO (Bis-(N-cyclohexyldiazeniumdioxy-copper)	Substance added. Banned according to Biocidal Product regulation (EU 528/2012) for product type 9
44	27083-27-8 32289-58-2	Polyhexamethylene biguanide (PHMB)	Substance added. Banned according to Biocidal Product regulation (EU 528/2012) for product type 9
44	Various	Tributyltin Compounds	Substance added
45	7646-79-9	Cobalt dichloride	REACH Annex XVII added
52-54	-	Pesticides	Table is updated according to AFIRM's latest list of banned pesticides
73 -	-	SVHC LIST	List updated with last 10 substances that was added the 27-06-2018. List now contain 191 substances
79	-	Appendix 03	California Proposition 65 Risk assessment chart for labelling added
80	-	Appendix 04	Title changed from appendix 03 to 04

1.4 BY MALENE BIRGER RESTRICTED SUBSTANCE LIST

Introduction

By Malene Birger is committed to operate in an environmentally sustainable manner to protect the consumers, workers, environment, and the Brands. The requirements in this document are in accordance with current national legislation and EU legislation, which includes the REACH legislation and voluntary eco-labelling schemes. The requirements reflect an awareness of how chemicals affect human health, the environment and constantly increasing quality demands of consumers.

Suppliers shall always consider the safety and suitability of any chemicals used in their products regardless of whether there are specific regulations. Manufacturers, importers and other suppliers must ensure that their products meet community safety expectations and they must take responsibility for consequences of harmful chemicals present in a product.

By Malene Birger Restricted Substance List (RSL) applies to all products, including but not limited to apparel, footwear and accessories. By Malene Birger´s RSL also applies to all raw materials, parts, trims, sundries, chemicals and other goods supplied or used in the manufacturing of By Malene Birger product range, including packaging materials.

Due to national legislations in some countries where we are selling our products, the limits in By Malene Birger RSL in some cases are stricter than in REACH.

We require our suppliers and partners to study this document carefully and implement processes in their supply chain to comply with these requirements. By Malene Birger RSL must be shared with all upstream users in the supply chain, both factories producing finished products and suppliers of raw materials, components and chemicals.

By Malene Birger requires that all suppliers comply with REACH and continuously follow the updates on the website of the European Chemical Agency (ECHA). ECHA is the European Authority for REACH on behalf of the European Commission: http://ECHA.europa.eu

In case of specific question to By Malene Birger Restricted Substance list, please contact the following:

By Malene Birger:

Head of CSR & Product Development: Mette Tvilling Johansen mtjo@bymalenebirger.com
Project Coordinator: Line Vind: lvn@bymalenebirger.com

1.4.1 LEGISLATION

1.4.1.A EU LEGISLATION REACH

The European Chemical Legislation, REACH (Registration, Evaluation, Authorization and Restriction of Chemical substances) has been in force since 1st of June 2007. The objective of REACH is to ensure a high level of safety for human health and the environment. The communication requirements of REACH ensure that not only manufacturers and importers but also their customers, i.e. downstream users and distributors, have the information they need to use products safely.

Mandatory REACH duties

By Malene Birger requires that all suppliers are prepared to deliver articles which comply with the REACH regulation. The suppliers must constantly review updates of:

- The candidate list with Substances of Very High Concern, the SVHC list.

  Under EU REACH regulation, substances that are one of the following can be regarded as substance of very high concern (SVHC):
  - Carcinogenic, Mutagenic or Toxic to Reproduction (CMRs)
  - Persistent, Bio-accumulative & Toxic (PBT)
  - Very Persistent & Bio-accumulative (vPvB)
  - Seriously and/or Irreversibly Damaging the environment or human health, as substances damaging the hormone system

  If a substance is identified as an SVHC, it will be added to the Candidate List for eventual inclusion in the Authorisation List, regulated under article 33 and will be included in Annex XIV or XVII.

- The Authorisation list, Annex XIV, contains priority substances recommended from the Candidate list. Those SVHCs will not be allowed to be used, placed on the market or imported into the EU after a date to be set unless the company is granted an authorization.

- List of restrictions, Annex XVII, contains those substances (on its own, in a mixture or in an article) for which manufacture, placing on the market or use is limited or banned in the European Union.

The three lists mentioned can be found on the website of the European Chemical Agency (ECHA), http://ECHA.europa.eu.

Article definition in force from September 2015

The REACH regulation is divided into restrictions for substances, preparations and articles. Textiles and Clothing are in the REACH-regulation considered to be so-called “articles”.

The general definition of an article in REACH, Article 33, is: “An article is an object which during production is given a special shape, surface or design which determines its function to a greater degree than its chemical composition”.

Article 33 of Regulation No 1907/2006, as amended on September 2015, must be interpreted as meaning that, for the purposes of application of that provision, it is for the supplier of a product one or more constituent articles of which contain(s) a substance of very high concern identified in accordance with Article 59(1) of that regulation in a concentration above 0,1 % weight by weight of

that article, to inform the recipient and, on request, the consumer, of the presence of that substance by providing them, as a minimum, with the name of the substance in question.

An article will always remain an article, even when it is joined together with other articles to form a larger more complex article/product. The obligation to provide information according to Article 33 is triggered as soon as an individual part, which fulfills the definition of "article", contains 0.1% (w/w) or more of a Candidate list SVHC. SVHC's in an article must be < 0.1% (w/w).

For By Malene Birger products the article definition includes individual components in the product, e.g.:

- Zippers, labels, buttons, and other components that are attached to the garment
- Shoe laces, metal eyelets, shoe soles, insoles and other components that are attached to shoes, bags etc.

A product example that is regulated as a preparation would be nail polish. The general definition of a preparation in REACH is: "A mixture or solution composed of two or more substances", follow the link, http://the-ncec.com/reach-polymers-articles-and-preparations

1.4.1.B USA - CALIFORNIA PROPOSITION 65

What is Proposition 65?
Proposition 65 requires businesses to provide warnings to Californians about significant exposures to chemicals that cause cancer, birth defects or other reproductive harm. These chemicals can be in the products that Californians purchase, in their homes or workplaces, or that are released into the environment. By requiring that this information be provided, Proposition 65 enables Californians to make informed decisions about their exposures to these chemicals.

What types of chemicals are on the Proposition 65 list?
The list contains a wide range of naturally occurring and synthetic chemicals that include additives or ingredients in pesticides, common household products, food, drugs, dyes, or solvents. Listed chemicals may also be used in manufacturing and construction, or they may be by-products of chemical processes, such as motor vehicle exhaust.

Link to the complete list can be found here:
https://oehha.ca.gov/proposition-65/proposition-65-list

What are the penalties for violating Proposition 65?
Penalties for violating Proposition 65 by failing to provide warnings can be as high as $2,500 per violation per day.

The most important steps for complying with proposition

- Determine which of your products are likely to be sold in California
- Identify the supplier for each of those products
- Request relevant compliance data from suppliers
- Track which products most likely may contain Proposition 65 substances and in what quantities
- Maintain records to support claims in case of enforcement action

Label requirement
Refer to Appendix 03 for assessment on labelling requirement

For more information on Proposition 65 visit:
https://oehha.ca.gov/proposition-65
https://oehha.ca.gov/proposition-65/law/proposition-65-law-and-regulations

1.4.2 COMPLIANCE

The Supplier is obliged to be in full compliance with By Malene Birger RSL, to be updated and in compliance with the REACH legislation, the candidate list of Substances of Very High Concern (SVHC's) and California Proposition 65. By Malene Birger requires each of our suppliers to certify their compliance to the IC RSL by signing the Production Agreement in the SOP, PART 1.2

As By Malene Birger has a strict "no fault" policy related to product safety requirements, any breach of compliance with the By Malene Birger RSL is considered a breach of contract, refer to Production Agreement in the SOP, PART 1.2; paragraph 16 or Nomination Agreement in the STP, PART 1.2; paragraph 5 or Supply Agreement, paragraph 4.

Please Note!
In the abovementioned paragraphs, the Manufacturer accepts responsibility to comply with IC's product safety requirements for any Raw Materials sourced by the Manufacturer; including materials for Developing Samples such as Proto Types, Selling Samples etc. and Bulk Production.

To ensuring the Suppliers compliance with the By Malene Birger RSL, any testing must be executed by a nominated laboratory appointed by By Malene Birger.

1.4.3 STRATEGY REGARDING CHEMICAL TESTING

The Chemical Strategy in By Malene Birger includes that our Brands apply risk assessment from design development to the final order is settled, communicating actively throughout the supply chain, from the design process to the supplier regarding risk elements. A selection of styles/components for By Malene Birger RSL testing will be chosen on each season for verification of the working process and to control if By Malene Birger products are complying with By Malene Birger RSL requirements.

The risk assessment is based on diverse criteria such as:

- High risk articles (e.g. including prints, finish, coating and padding).
- High volume (both large order sizes on volume and/or value and recurring orders on SSP).
- Supplier history (e.g. earlier fails or new supplier).

By Malene Birger has developed a tool for risk assessment, the Chemical Risk Matrix, which is placed in this section.

We urge suppliers to purchase dye stuff, pigments and textile auxiliaries from reputable suppliers, such as ETAD members (www.ETAD.com), e.g. BASF, CHT-Bezema, Clariant, Dystar, Huntsman and Rudolf. Products purchased with these suppliers and applied appropriately will minimize the risk for chemical failure.

On certain chemicals, e.g. NPEO, there might be a significant difference between By Malene Birger RSL and REACH regulation and/or governing law. There might also be criteria in By Malene Birger RSL which are set due to common industry standards. It is at IC's sole discrepancy to decide on failed articles, when the failed chemicals are not regulated by law, or when the legal limit varies from country to country.

By Malene Birger Risk Matrix

IC GROUP	**Natural fibres** incl. but not limited to:					**Synthetic fibres** incl. but not limited to:					Natural & Synthetic Blends	Natural Leather	Artificial & Coated Leather	Plastics and other synthetic materials	Coating, Print & paint	Finishes	Adhesives & Glue	Metal parts	Rhinestones & Sequins etc.	Fusion, Padding, Feather & Down	Desiccant's	Packaging material
Chemical:	Cotton	Linen	Wool	Silk	Viscose	Polyester	Polyamide	Acrylic	Acetate	Elastane												
AZO dyes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓							
Allergenic dyes						✓	✓	✓	✓	✓	✓											
Carcinogenic dyes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓							
NPEO, OPEO (APEO)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		
Short Chained Chlorinated Paraffin's												✓	✓	✓	✓							
Formaldehyde	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓					
Total Lead												✓	✓	✓	✓		✓	✓	✓			✓
Total Cadmium												✓	✓	✓	✓		✓	✓	✓			✓
Extractable Heavy Metals	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓			
Soluble Heavy Metals														✓				✓	✓			
Nickel Release																		✓				
Cr +6 (leather)												✓	✓									
N-Nitrosamines														✓*								
PFOA, PFOS	✓**												✓	✓**	✓	✓**						
PAH													✓	✓	✓		✓		✓			
Phthalates													✓	✓	✓		✓		✓			✓
PVC detection													✓	✓	✓							✓
Volatile Organic Compounds													✓	✓	✓	✓	✓		✓			
pH Value	✓	✓	✓	✓	✓						✓	✓	✓									
Organotin Compounds	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓					
Chlorinated Phenols	✓	✓	✓	✓	✓						✓	✓	✓		✓							✓
Dimethyle-fumerate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓				✓	✓
Cobalt Dichloride																					✓	✓
Total Cd, Hg, Pb, Cr +6 ***																						✓

* Relevant for rubber
** Relevant for stain and water repellent finishes or coatings on fabrics
*** Note testing method for Cr +6 is not the same as for leather – refer to RSL for details

By Malene Birger Chemical Testing

By Malene Birger reserves the right to select and test products at any stage of production.
The Brands within By Malene Birger have individual processes in test selection, but all Brands are making chemical tests on all seasons.

Furthermore, testing on development and sample stage may be executed on request from brand and or By Malene Birger.

Suppliers must promptly send sufficient sample material with a completed Test Request Form to a nominated laboratory.
Testing shall always be executed on:

- Bulk production material/components
- Test what can be tested before production start (e.g. trim)
- If any after treatment is to be applied to the ready garment, only ready printed/coated/washed bulk production components are to be tested

By Malene Birger will pay for this testing if the result is passed, but in case of an By Malene Birger RSL failure; the supplier will be responsible to pay for any chemical failures, including:

- First test where any component fails under By Malene Birger RSL, whole package test or whole test of nominated substances
- Replacement and/or retreatment of the failed component
- Retesting of the replaced and/or retreated component until a passed result is achieved
- Costs associated with any product recalls due to By Malene Birger RSL or SVHC failure

By Malene Birger expects that the supplier performs an investigation of the source of the failure to correct the current production and prevent repetition. The details of the investigation should be reported in the "RSL Corrective Action Plan", see Appendix 01, if requested by By Malene Birger.

By Malene Birger "RSL Corrective Action Plan" (CAP)

When chemical fails occur, By Malene Birger will request a CAP report to be performed.
The CAP report is an investigation to locate the source of the failure, and which measures to be implemented, for correction of the current production and to prevent the same failure to be repeated in future productions.
The supplier is requested to conduct the CAP report in cooperation with By Malene Birger and the laboratory if needed. Some parts are the supplier's responsibility to fill-in. See the CAP report in Appendix 01.

Making and implementing the CAP report will achieve internal transparency and an overview of the improvements at the supplier, which will enable By Malene Birger to acknowledge the efforts that supplier has accomplished before placing future orders.

Supplier Initiated Testing

By Malene Birger encourages suppliers to conduct their own testing to be confident in their performance and to assure compliance to By Malene Birger RSL. For any supplier initiated testing, the test report will only be accepted by By Malene Birger if testing is conducted with a nominated laboratory appointed by By Malene Birger using the appropriate Test Request Form. The nominated laboratories undertake full confidentiality between laboratories and suppliers.

By Malene Birger only accepts chemical testing conducted at a nominated laboratory for By Malene Birger products/components. By Malene Birger have evaluated and approved the nominated laboratories, and formed a set up regarding:

- Discount on prices, also valid when suppliers conduct own testing on By Malene Birger products
- Laboratory well informed of By Malene Birger RSL
- By Malene Birger well informed of special test methods for all laboratories
- Layout and information in reporting

Independent on the specific test method provided in By Malene Birger RSL, the nominated laboratory is obliged to use the latest version.

Nominated laboratory

Modern Testing Services, MTS – www.mts-global.com

- Hong Kong
- Dongguan
- Shanghai
- Bangladesh
- Germany

See Appendix 04 for details on contact persons, locations and mailing addresses.

1.4.4 BY MALENE BIRGER STRATEGY REGARDING NANOTECHNOLOGY

Nanotechnology based materials is generally referred to as those compounds, or components within the range of 1 to 100 nanometres, and nanomaterials are 10 times smaller than the diameter of a human hair → one nanometre is one-billionth of a meter.

Due to the uncertainty of risk associated with using nanomaterials, and to ensure that any potentially negative impact to consumers and the environment related with the use of nanomaterials are heavily reduced or even none-existing, By Malene Birger currently restricts the use of nanomaterials within all products. This restriction applies to final products and/or components where nanomaterials is intentionally applied to or remains as residuals after manufacturing.

Prior to the use of Nanotechnology in a specific product/component for By Malene Birger, the following criteria's must be met:

- Meet legislative standards, globally
- Disclose the reason for using Nanotechnology
- Disclose the use of Nanotechnology by filling out the questionnaire, see Appendix 02.
- By Malene Birger will, based on the given information, do a risk and toxicity review before approval.

If no information is to be given, the specific case will be considered as high risk and will not be approved.

1.4.5 BY MALENE BIRGER TABLES OF RESTRICTED SUBSTANCES

"How to read" By Malene Birger tables of restricted substances

- The tables are divided into sections of Property Lending & Process Chemicals, Biocidal Agents, Restrictions on Packaging, etc.
- The substances in each section are listed in alphabetic order.
- By Malene Birger limits are defined with different values or expressions. The units to the values are corresponding with the units in the related test method.
- The expressions are explained in 1.4.6 Explanatory Section & Abbreviations

1.4.6 EXPALANTORY SECTION & ABBREVIATIONS

General terms	
CAP	Corrective Action Plan
ECHA	European Chemicals Agency
REACH	**R**egistration, **E**valuation, **A**uthorisation and restriction of **CH**emicals
SVHC	Substances of Very High Concern = Candidate list

Chemical terms	
Articles with direct skin contact:	*Any part of the product, such as collar, cuff, body or sleeves, has direct prolonged contact with the skin during normal use.*
Articles without direct skin contact:	*Only a portion of the product may occasionally contact the skin during normal use.*
Cas No:	*A unique numeric identifier designated to one substance by the CAS registry, Chemical Abstract Service.*
Test method:	*Standardized test method if such exists.* *Test equipment if no standardized test method exists. Abbreviations of recommended test equipment are explained in this in below section.*

Test method/equipment	
AAS:	*Atomic absorption spectrophotometer*
CI:	*Colour Index number*
DAD:	*Diode array detector*
ECD:	*Electron capture detector*
FTIR:	*Fourier transform infrared spectroscopy (for PVC test)*
GC:	*Gas Chromatography*
ICP:	*Inductively Coupled Plasma Spectrometry*
LC:	*Liquid Chromatography. Note sometimes the abbreviation HPLC is used. It stands for High Performance Liquid Chromatography*
MS:	*Mass selective detector*
OES:	*Optical emission spectrometer*
UV / VIS:	*Ultraviolet/visible spectrophotometer detector*
VOC	*Volatile Organic compound*
XRF:	*X-ray fluorescence*

Chemical limits	
Trace Amount (TR)	*The trace amount is identified by the TR designation in the Limit Value column. The trace amount is the allowable unavoidable trace presence of a substance that has been identified with a usage ban. While a substance may not be used in the production of a product, a small acceptable trace amount can be found on a RSL-compliant product due to minor contamination or atmospheric absorption.*
Detection Limit	*Specifies the test method detection sensitivity that a laboratory must be able to achieve when measuring the substance in the product.*
Limit value	*Limit value as agreed in business sectors or by legal requirements. The limit is specified as the amount of the substance found in a specified amount of substrate, by weight (or more specifically, in milligrams of the substance per kilogram of product [mg/kg]). Concentration limits are applicable to any single part, or homogeneous part, of a product.*
mg/kg	*Milligram per kilogram*
Not Detected	*Indicates that the substance must not be detected in the final product.*
N/A	*Not Applicable*
ppm	*Parts per million, which is the same as milligram per kilogram*
Reporting Limit (RL)	*The reporting limit is the lowest concentration the laboratory can report. If the laboratory detects an amount of the substance below the RL, the laboratory report must state "Not Detected."*
Usage Ban	*A substance is prohibited of intentional use during all stages of product manufacturing. However, the RSL identifies an allowable trace amount due to unavoidable contamination.*
µg/kg	*Microgram per kilogram*

Relation between Units		
1000 mg/kg Equals	*1000 ppm*	*Parts per million*
	1 000 000 µg/kg	*Micro gram per kilogram (1 µg/kg = 0,001 mg/kg = 1ppb (parts per billion)*
	0,1 % (by weight)	
	X µg/m2	*X depends on the Weight of the fabric (kg/m2)*
	X µg/cm2/week	*X is the measure of the release of a substance from a surface, and is only partly dependent on the concentration of the substance*

Miscellaneous	
Article	*An object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition.* *For By Malene Birger products the article definition includes individual components in the product, e.g.:* • *Zippers, labels, buttons, and other components that are attached to the garment* • *Shoe laces, metal eyelets, shoe soles, insoles and other components that are attached to shoes, bags etc.*
Children's Products	*A children's product is that which is made for, marketed for use by, or marketed to children age 12 and under.*
Packing Material	***EU:*** *According to Directive (EC) No 94/62/EC of 20 December 1994 on packaging and packaging waste. The directive regulates substances in packaging material; meaning all products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer.* ***USA:*** *Means any container providing a means of marketing, protecting, or handling a product from its point of manufacture to its sale or transfer to a consumer, including a unity package, an intermediate package or a shipping container, as defined in the ASTM specification D 996. Packaging also includes, but is not limited to, unsealed receptacles, including carrying cases, crates, crates, cups, pails, rigid foil and other trays, wrapper sand wrapping films, bags, boxes, tape, and tubs.*
Polyvinyl Chloride (PVC)	*Polyvinyl chloride, or PVC for short, is a hard plastic that may be found in packaging materials, trims, footwear, and screen printing. PVC is prohibited from use in all By Malene Birgers packaging and food contact products. In addition, By Malene Birger prefers all products do not contain PVC and supports efforts to phase-out PVC.*
UV STABILISER	*UV Stabilizer's might be used as UV-protection agents in coatings, plastics, rubber and polyurethanes. The primary function is to protect the substance from the long-term UV degradation effects from ultraviolet radiation. These stabilizers are very persistent and very bio accumulative.*
pH	*pH is a measure of the acidity or basicity of a solution. A solution whose pH is 7 is said to be neutral, which means that it is neither acidic nor basic. pH values that do not fall within the specified limits can cause skin irritation.*
BIOCIDES GENERAL	*Biocides are biologically active substances, and their toxic and biocidal nature enables them to kill or harm living things. Since biocides by nature are used to have detrimental effects on biological organisms, they are at the same time a serious threat to living organisms that were not intended to be controlled. Biocides have adverse effects on the nervous system when entering the human body. They may irritate eyes, skin, and the respiratory system.*

1.4.7 TABLES OF CHEMICALS

Azo Dyes (28 restricted arylamines)				PROPERTY LENDING CHEMICALS	
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
CAS No.	Substance				
101-14-4	4,4-Methylene-bis[2-chloro-aniline]	20 mg/kg for each arylamine	**For all markets except China:** For textile: EN 14362-1, -3 For leather: ISO 17234-1, -2 Reporting limit: 5 mg/kg (per each of the arylamine breakdown products) **Products for China market:** China standard GB 18401 For Textile: GB/T 17592 China standard GB 20400 For Leather: GB/T 19942 China standard GB/ 23344 for p-AAB Reporting limit: 5 mg/kg	EU Legal limit: 1000mg/kg for Navy Blue, 30 mg/kg per each of other arylamine breakdown products, in REACH, Annex XVII, entry 43 & 72* Norway: Legal limit 30 mg/kg China: Legal limit: 20 mg/kg Vietnam: Legal limit ≤ 30 g/kg Japan: Legal limit ≤ 30 mg/kg India: Legal limit 30 mg/kg Egypt: Legal limit 30 mg/kg	**X**
101-77-9	4,4-Methylenedianiline				**X**
101-80-4	4,4'-oxydianiline				**X**
106-47-8	4-chloroaniline				
119-90-4	o-Dianisidine				
119-93-7	4,4'-bi-o-toluidine				
120-71-8	p-Cresidine				**X**
137-17-7	2,4,5-trimethylaniline				
139-65-1	4,4'-thiodianiline				
60-09-3	4-Aminoazobenzene				**X**
615-05-4	4-methoxy-m-phenylenediamine				
838-88-0	4,4-Methylenedi-o-toluidine				**X**
87-62-7	2,6-xylidine				
90-04-0	o-Anisidine				**X**
91-59-8	2-Naphthylamine				
91-94-1	3,3-Dichlorobenzidine				
92-67-1	Biphenyl-4-ylamine				**X**
92-87-5	Benzidine				
95-53-4	o-Toluidine				**X**
95-68-1	2,4-xylidine				
95-69-2	4-Chloro-o-toluidine				
95-80-7	4-methyl-m-phenylenediamine				**X**
97-56-3	o-Aminoazotoluene				**X**
99-55-8	5-Nitro-o-toluidine				
95-79-4	2-Amino-3-Chlorotoluene**				

Continues on next page….

Azo Dyes (28 restricted arylamines) continued				PROPERTY LENDING CHEMICALS	
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
106-50-3	1,4-Diaminobenzene**				X
3165-93-3	4-chloro-o-toluidinium chloride *				
553-00-4	2-Naphthyl-ammoniumacetate *				
39156-41-7	4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate *				
21436-97-5	2,4,5-trimethylaniline				
118685-33-9	Navy Blue (EC. No. 405-665-4)	1000 mg/kg	Navy Blue: EN ISO 16373		
* From 2020 these dyes will be restricted with a limit of 30 mg/kg according to REACH, Annex XVII, entry 72 ** Banned amines that are included in GOTS ver. 5.0					

Alkylphenols (AP) , Alkylphenol ethoxylates (APEO) and its derivatives				PROCESS CHEMICALS	
Restricted Substance		**By Malene Birger Limit**	**Test method &**	**Regulation & Country**	**SVHC**
CAS No.	Substance				
Various, incl. 68987-90-6, 9036-19-5, 9002-93-1	(OPEO) Octylphenol Ethoxylates	Usage ban	Textile: EN ISO 18254-1 Leather: EN ISO 18218-1 Plastics/Polymer: THF/ ACN Extraction, Analyzed by GCMS / LCMS Reporting limit: NPEO/OPEO: 50 mg/kg NP/OP: 10 mg/kg	EU Legal limit: 1000 mg/kg or 0.1% by weight for nonylphenol ethoxylate as a substance or constituent of preparations (closed systems exempted). NP is in REACH, Annex XVII, entry 46 NPEO is in REACH Annex XVII, entry 46a with restriction on textiles intended to be washed in water during its lifecycle with a legal limit of 100mg/kg, effective Feb 2021	**X**
Various, incl. 9016-45-9, 26027-38-3, 37205-87-1, 68412-54-4, 127087-87-0	(NPEO) Nonylphenol Ethoxylates	Trace: 100 mg/kg for total NPEO/OPEO A total of all Aps and APEO's must not exceed: 100 mg/kg			**X**
Various, incl. 27193-28-8, 140-66-9, 1806-26-4, 85771-77-3	(OP) Octylphenol	Trace: Not Detected for NP/OP Shall not be used in processes intendedly.			**X**
Various including 25154-52-3, 104-40-5, 84852-15-3, 11066-49-2	(NP) Nonylphenol				**X**
Various	4-heptylphenol, branched and linear	Trace: 1000 mg/kg	THF/ ACN Extraction, Analyzed by GCMS / LCMS		**X**
80-46-6	p-(1,1-dimethylpropyl) phenol	Trace: 1000 mg/kg			**X**

Allergenic Disperse Dyes				PROPERTY LENDING CHEMICALS
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**
CAS No.	Substance	Usage Ban Trace: 50mg/kg (3,3mg/L)	DIN 54231 (qualitative) EN ISO 16373 (extractable dyestuff) Reporting limit: 1 mg/l per substance	Germany, South Korea and practically globally due the fact that nearly all brands and retailers have these on their RSL´s. South Korea: restriction limit 50mg/kg (Equals 3,3mg/L under DIN 54231)
2475-45-8	Disperse Blue 1*			
2475-46-9	Disperse Blue 3*			
3179-90-6	Disperse Blue 7			
3860-63-7	Disperse Blue 26			
12222-75-2	Disperse Blue 35*			
12222-97-8	Disperse Blue 102			
12223-01-7	Disperse Blue 106*			
61951-51-7	Disperse Blue 124*			
23355-64-8	Disperse Brown 1			
2581-69-3	Disperse Orange 1			
730-40-5	Disperse Orange 3*			
12223-33-5 13301-61-6	Disperse Orange 37/59/76*			
2872-52-8	Disperse Red 1*			
2872-48-2	Disperse Red 11			
3179-89-3	Disperse Red 17			
119-15-3	Disperse Yellow 1			
2832-40-8	Disperse Yellow 3*			
6373-73-5	Disperse Yellow 9			
12236-29-2	Disperse Yellow 39			
54824-37-2	Disperse Yellow 49			
6250-23-3	Disperse Yellow 23			
85136-74-9	Disperse Orange 149			
* Disperse Dyes Banned in Germany according to: LFBG § 30 of Food and Commodities Act				

Bisphenol A (BPA)				PROCESS CHEMICAL	
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
CAS No.	Substance	1 ppm	LC-MC, GC-MS	Bisphenol A (BPA) is restricted from January 2020, REACH (Annex XVII, entry 66 in thermal paper Also used in the production of epoxy resin, polycarbonate plastics, flame retardants and PVC	
80-05-7	BPA (4,4′-isopropyllidenediphenol)				**X**

Carcinogenic Dyestuffs				PROPERTY LENDING CHEMICALS	
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
CAS No.	Substance	Usage Ban Trace: 50mg/kg (3,3mg/L)	DIN 54231 (qualitative) EN ISO 16373 (extractable dyestuff) Reporting limit: 1 mg/l per substance	South Korea: restriction limit 50mg/kg (Equals 3,3mg/L under DIN 54231)	
2475-45-8	Disperse Blue 1* & **				
82-28-0	Disperse Orange 11				
6250-23-3	Disperse Yellow 23				
3761-53-3	Acid Red 26				
569-61-9	Basic Red 9 **				
632-99-5	Basic Violet 14				
1937-37-7	Direct Black 38				**X**
2602-46-2	Direct Blue 6				
573-58-0	Direct Red 28				**X**
16071-86-6	Direct Brown 95				
85136-74-9	Disperse Orange 149				
6786-83-0	Solvent Blue 4				**X**
2580-56-5	Basic Blue 26				**X**
548-62-9	Basic Violet 3 **				**X**
101-61-1	Michler's base				**X**
561-41-1	4,4'-bis(dimethylamino)-4''-(methylamine)trityl alcohol				**X**
* Disperse Dyes Banned in Germany according to: LFBG § 30 of Food and Commodities Act ** From 2020 these dyes will be restricted with a limit of 30 mg/kg according to REACH, Annex XVII, entry 72					

Diisocyanates				PROCESS & PROPERTY LENDING CHEMICALS & RELATED MANUFACTURING IMPURITIES
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**
CAS No.	Substance	Free: 1 Blocked: 50	Free: Solvent extraction analysis by HPLC. Blocked: Solvent extraction by GC-MS with injector block temperature of 300 °C. If detected, confirmation test at 180°C is needed to avoid false positive detection of diisocyanate from polyurethane decomposition in injector block of GC/MS device.	Methylene diphenyl diisocyanate (MDI) and its isomers is restricted when used as a component of consumer products in REACH Annex XVII, Entry 56
101-68-8	(MDI) Diphenylmethane diisocyanate			
822-06-0	(HDI) Hexamethylene diisocyanate	Free: 1 Blocked: 100		
4098-71-9	(IPDI) Isophorone diisocyanate	Free: 1 Blocked: 100		
2778-42-9	(TMXDI) Tetramethylxylene diisocyanate	Free: 1 Blocked: 15		
584-84-9	(TDI) Toluene diisocyanate	Free: 1 Blocked: 50		

Flame Retardants			PROPERTY LENDING CHEMICALS		
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
Polybrominated biphenyls (PBB) and Polybrominated diphenyl ethers (PBDE)					
CAS No.	Substance	Usage Ban Trace: 1 mg/kg	EN 16377 for PBB (Plastics) EN ISO 17881-1 for brominated flame retardants in textiles;	Legal limit: 0.1% by weight PBBs are in REACH, Annex XVII, entry 8. OctaBDE & DecaBDE are listed in REACH, Annex XVII, entry 45 & 67 Banned in REACH Regulation (EC) No 756/2010. TetraBDE, HexaBDE, HeptaBDE are listed in POPs* and banned by Regulation (EC) No 850/2004**.	
59536-65-1	(PBBs) Polybrominated biphenyls				
5436-43-1	Tetrabromodiphenyl ether (TetraBDE)	Usage Ban Trace: 5 mg/kg			
32534-81-9	(PentaBDE) Penta-bromodiphenyl ether				
68631-49-2, 207122-15-4	Hexabromodiphenyl ether (HexaBDE)				
446255-22-7 207122-16-5	Heptabromodiphenyl ether (HeptaBDE)				
32536-52-0	(OctaBDE) Octa-bromodiphenyl ether				
1163-19-5	(DecaBDE) Decabromodiphenyl ether				X
Chlorinated paraffins					
CAS No.	Substance	Usage Ban Trace: 0.1 % by weight	EN ISO 18219:2016 Reporting limit: 100 mg/kg	Legal limit: 0.1% by weight SCCP is listed in POPs* and banned by Regulation (EC) No 850/2004**. Norway has a national legislation from 1 July 2012 with restrictions for Medium-chain (C14-C17) chloroparaffins of 0.1 % by weight in articles.	
85535-84-4	(SCCP) Short-chain chloroparaffins, (C10-C13)				X
85535-85-9	(MCCP) Medium-chain chloroparaffins, (C14-C17)				
85535-86-0	(LCCP) Long-chain chloroparaffins (C18-)				

Flame Retardants – continued..				PROPERTY LENDING CHEMICALS	
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
Others					
CAS No.	Substance	Usage Ban Trace: 5 mg/kg	EN ISO 17881- 1 for brominated flame retardants	HBCDD is listed in POP* and banned by Regulation (EC) No 850/2004** Legal limit: 0.01% by weight HBCDD and all major isomers are in REACH, Annex XIV.	**X**
25637-99-4, 3194-55-6, 134237-50-6, 134237-51-7, 134237-52-8	(HBCDD) Hexabromocyclododecane				
78-30-8	Tri-o-cresyl phosphate		EN ISO 17881- 2 for phosphorous flame retardants		
126-72-7	(TRIS) Tris (2,3-dibromopropyl) phosphate			TRIS is in REACH, Annex XVII, entry 4.	
5412-25-9	(BDBPP) Bis (2,3-dibromopropyl) phosphate				
115-96-8	(TCEP) Tris(2-chloroethyl)phosphate			Legal limit: 0.1% by weight	**X**
545-55-1	(TEPA) Tris (1-aziridinyl)-phosphine oxide		KOH or NaOH digestion followed by GC-MS headspace analysis for ethyleneimine.	TEPA is in REACH, Annex XVII, entry 7.	
25155-23-1	(TXP) Trixylyl phosphate		EN ISO 17881- 2 for phosphorus flame retardants	Legal limit: 0.1% by weight	**X**
*POP is the Stockholm Convention on Persistent Organic Pollutants **Regulation (EC) No 850/2004 (EU regulation implementing Stockholm Convention).					

Formaldehyde				**PROPERTY LENDING CHEMICALS**
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**
CAS No.	**Substance**	Children < 3 yrs.: Not Detected Adults with direct skin contact*: 75 mg/kg Adults without direct skin contact**: 300 mg/kg	Textiles: ISO 14184-1 Leather: ISO 17226-1 Reporting limit: 16 mg/ kg Wood & wood-based materials: EN 120	See “Formaldehyde regulations worldwide” for textiles below. Formaldehyde will be added to REACH, Annex XVII, entry 72. Refer to footnote ***
50-00-0	Formaldehyde			

* Products for adults where any part of the product such as collar, cuff, body or sleeves, has direct prolonged contact with the skin during normal use.
** Products for adults where only a portion of the product, occasionally may have contact with the skin during normal use.
*** From 2020, formaldehyde will have a restriction limit of 75 mg/kg in textiles according to Annex XVII, entry 72 of Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH). During a transition period, jackets, coats or upholstery will have a restriction limit of 300 mg/kg.

Formaldehyde regulations worldwide		
Country	Regulations/Requirements	Objection Limit / Limit
Germany	Gefahrstoffverordnung (Hazardous Substances Ordinance) Annex III, No. 9, 26.10.1993	Textiles that normally come into contact with the skin and release more than 1500 mg/kg formaldehyde must bear the label:" Contains formaldehyde". Washing this garment is recommended prior to first time use in order to avoid irritation of the skin."
France	Official Gazette of the French Republic, Notification 97/0141/F	The regulations apply to products that are intended to come into contact with human skin, Including: textiles, leather, shoes etc. Textiles for babies: 20 mg/kg. Textiles in direct skin contact: 100 mg/kg. Textiles not in direct skin contact: 400 mg/kg.
Netherlands	The Dutch (Commodities Act) Regulations on Formaldehyde in Textiles (July 2000)	Textiles in direct skin contact must be labelled:" Wash before first use" if they contain more than 120 mg/kg formaldehyde and the product must not contain more than 120 mg/kg formaldehyde after wash
Austria	Formaldehydverordnung, BGBL Nr. 194/1990	Textiles that contains 1500 mg/kg or above must be labelled.
Finland	Decree on Maximum Amounts of Formaldehyde in Certain Textiles Products (Decree 210/1988)	Textiles for babies under 2 years: 30 mg/kg. Textiles in direct skin contact: 100 mg/kg. Textiles not in direct skin contact: 300 mg/kg.
Norway	Regulations Governing the Use of a Number of Chemicals in Textiles (April 1999)	Textiles for babies under 2 years: 30 mg/kg. Textiles in direct skin contact: 100 mg/kg. Textiles not in direct skin contact: 300 mg/kg.
China	Limits of Formaldehyde Content in Textiles: GB18401, Leather: GB/T 19941	Textiles for infants and babies: ≤20 mg/kg. Textiles in direct skin contact: ≤75 mg/kg. Textiles not in direct skin contact: ≤300
Japan	Japanese Law 112 Textiles: JIS L1041	Textiles for infants: Not detectable. Textiles in direct skin contact: 75 ppm.
Vietnam	Circular no 23/2016/TT-BCT	Textiles for babies under 36 months: 30 mg/kg. Textiles in direct skin contact: 75 mg/kg. Textiles not in direct skin contact: 300 mg/kg

Metal Restrictions – Textile & Leather				PROPERTY LENDING CHEMICALS		
Restricted Substance		**By Malene Birger Limit (mg/kg)**		**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
Extractable Metals		**Textile (natural & synthetic, artificial leather)**	**Leather (natural & coated)**			
CAS No.	Substance			**Textile:**		
7440-36-0	(Sb) Antimony	30	30	EN ISO 105-E04		
7440-38-2	(As) Arsenic *	1	1	Determination: ICP-MS	In REACH, Annex XVII, entry 19 *	X**
7440-43-9	(Cd) Cadmium *	0.1	0.1		In REACH, Annex XVII, entry 23 *	X**
7440-47-3	(Cr) Chromium	2	200	Cr^{+6} for textiles:		
18540-29-9	(Cr^{+6}) Chromium VI *	Not Detected Trace: 0.5	Not Detected Trace: 3	No standardized test method available for textiles. UV-VIS Spectrometer	In REACH, Annex XVII, entry 47 *	
7440-48-4	(Co) Cobalt	4	4			
7440-50-8	(Cu) Copper	50	50			
7439-92-1	(Pb) Lead *	1	1	Reporting limit: 0.5 mg/kg	In REACH, Annex XVII, entry 63 * Danish Regulation for lead.	X**
7439-97-6	(Hg) Mercury	0.02	0.02	**Leather:** EN ISO 17072-1	In REACH, Annex XVII, entry 18A	
7782-49-2	(Se) Selenium	N/A	N/A	For Cr^{+6}: ISO 17075-1*		
7440-02-0	(Ni) Nickel	4	1	Reporting limit: 3 mg/kg		

* From 2020, Arsenic and its compounds, Cadmium and its compounds, Lead and its compounds, Chromium VI compounds will have a restriction of 1 mg/kg (extractable content) in textiles according to Annex XVII, entry 72 of Regulation (EC) No 1907/2006 of the European Parliament and of the council (REACH)
** Various Arsenic, Cadmium and Lead compounds are listed in the SVHC Candidate list of REACH.

Metal Restrictions – Textile & Leather				PROPERTY LENDING CHEMICALS		
Restricted Substance		**By Malene Birger Limit (mg/kg)**		**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
Total Metal Content		**Textile (natural & synthetic, artificial leather)**	**Leather (natural & coated)**			
CAS No.	Substance			EN 1122 or acid digestion	In REACH, Annex XVII, entry 23	**X**
7440-43-9	(Cd) Cadmium	N/A	100			
7439-92-1	(Pb) Lead	N/A	90	ASTM F2853 in paint and surface coating CPSC-CH-E1001-08 in metal CPSC-CH-E1002-08 in non-metal CPSC-CH-E1003-09 in paint & surface coating	In REACH, Annex XVII, entry 63 Danish Regulation for lead must always be considered.	**X**
* Cr+6 testing must always be conducted WITH AGEING (80^0C, <5% humidity, 24 hours						

Metal Restrictions – Metal & Plastic (trims, buckles, sundries* etc.)				PROPERTY LENDING CHEMICALS		
Restricted Substance		**By Malene Birger Limit (mg/kg)**		**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
Extractable Metals		**Children (< 12 yrs)**	**Adult**			
CAS No.	Substance			Metal & Plastic: Total heavy metal screening refers to: ASTM F963, when positive use EN71-3 (EU Toy Safety Directive)		
7440-36-0	(Sb) Antimony	60	N/A			
7440-38-2	(As) Arsenic	25	N/A		In REACH, Annex XVII, entry 19	
7440-39-3	(Ba) Barium	1000	N/A			
7440-43-9	(Cd) Cadmium**	17	75		In REACH, Annex XVII, entry 23	**X**
7440-47-3	Chromium III	60	N/A			
7440-47-3	Chromium VI	0.2	N/A			

Metal Restrictions – Metal & Plastic - continued…				PROPERTY LENDING CHEMICALS		
Restricted Substance		**By Malene Birger Limit (mg/kg)**		**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
7439-92-1	(Pb) Lead	90	90	See above	In REACH, Annex XVII, entry 63, for Jewelry & Accessories. Danish Regulation for lead must always be considered	**X**
7439-97-6	(Hg) Mercury	60	N/A		In REACH, Annex XVII, entry 18A	
7440-02-0	Nickel release***	**Metal parts in direct & prolonged skin contact**. Maximum release: 0,5 µg/cm²/week (non-pierced) 0,2 µg/cm²/week (pierced)		Nickel release: EN 1811**** EN 16128*****	In REACH, Annex XVII, entry 27	
Total Metal Content		**Children (< 12 yrs.)**	**Adult**			
CAS No.	**Substance**			EN 1122 or acid digestion	In REACH, Annex XVII, entry 23.	**X**
7440-43-9	(Cd) Cadmium**	100	100			
7439-92-1	(Pb) Lead	90	90	ASTM F2853 in paint and surface coating CPSC-CH-E1001-08 in metal CPSC-CH-E1002-08 in non-metal CPSC-CH-E1003-09 in paint & surface coating	In REACH, Annex XVII, entry 63 for Jewelry & Accessories Danish Regulation for lead must always be considered	**X**

* Sundries: Items that are permanently attached to the garment/footwear. Includes zippers, rivets, buttons, care labels, name labels, and tags.
** Not applicable for inorganic glass.
*** Nickel release restriction includes all metal trims and jewelry that are in direct and prolonged skin contact.
**** For metal parts with surface coating, perform abrasion of coated surface according to EN 12472:2005+A1:2009 before Nickel release according to EN 1811:2011+A1:2015. For non-coated items: EN 1811:2011+A1:2015
***** For spectacle frames and sunglasses, test according to EN 16128.

Metal Restrictions – Jewelry				PROPERTY LENDING CHEMICALS	
Restricted Substance		**By Malene Birger Limit (mg/kg)**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
Extractable Metals		**Adult***			
CAS No.	Substance		Metal & Plastic: Total heavy metal screening refers to: ASTM F963, when positive use EN71-3 (EU Toy Safety Directive)		
7440-36-0	(Sb) Antimony	60			
7440-38-2	(As) Arsenic	25		In REACH, Annex XVII, entry 19	
7440-39-3	(Ba) Barium	1000			
7440-43-9	(Cd) Cadmium**	75		In REACH, Annex XVII, entry 23.	**X**
7440-47-3	Chromium	60			
7439-92-1	(Pb) Lead	50		In REACH, Annex XVII, entry 63 for Jewelry & Accessories. Danish Regulation for lead must always be considered	**X**
7439-97-6	(Hg) Mercury	60		In REACH, Annex XVII, entry 18A.	
7782-49-2	(Se) Selenium	500			
7440-02-0	Nickel release***	**Metal parts in direct & prolonged skin contact**. Maximum release: 0,5 µg/cm²/week (non-pierced) 0,2 µg/cm²/week (pierced)	Nickel release: EN 1811**** EN 16128*****	In REACH, Annex XVII, entry 27.	
Total Metal Content		**Adult***			
CAS No.	Substance		EN 1122 or acid digestion	In REACH, Annex XVII, entry 23.	**X**
7440-43-9	(Cd) Cadmium**	75			
7439-92-1	(Pb) Lead	40	ASTM F2853 in paint and surface coating CPSC-CH-E1001-08 in metal CPSC-CH-E1002-08 in non-metal CPSC-CH-E1003-09 in paint & surface coating	In REACH, Annex XVII, entry 63 for Jewelry & Accessories. Danish Regulation for lead must always be considered	**X**

* Limits only valid for products for adults.
** Not applicable for inorganic glass
*** Nickel release restriction includes all metal trims and jewelry that are in direct and prolonged skin contact.
**** For metal parts with surface coating, perform abrasion of coated surface according to EN 12472:2005+A1:2009 before Nickel release according to EN 1811 :2011+A1:2015. For non-coated items: EN 1811:2011+A1:2015.
***** For spectacle frames and sunglasses, test according to EN 16128.

Monomers					
Restricted Substance		**By Malene Birger Limit (mg/kg)**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
CAS No.	Substance				
79-06-1	Acrylamide	0.1			**X**
107-13-1	Acrylonitrile	1			
106-99-0	1,3-Butadiene	1			
141-32-2	Butylacrylate	50			
97-88-1	Butylmethacrylate	50			
126-99-8	Chloroprene, 2-chlorobuta-1,3-diene	50			
563-47-3	3-chloro-2-methylpropene	10			
100-45-8	4-Cyanocyclohexene	50	Validated Method, Headspace GC/MS Identification.		
103-11-7	2-Ethylhexyl acrylate	50			
4994-16-5	4-Phenylcyclohexene	50			
140-88-5	Ethylacrylate	10			
97-63-2	Ethylmethacrylate	50			
79-39-0	Methacrylamide	50			
96-33-3	Methylacrylate	50			
80-62-6	Methylmethacrylate	50			
924-42-5	N-Methylolacrylamide	5			
100-42-5	Styrene	500			
100-40-3	4-Vinylcyclohexene	50			
75-01-4	Vinyl chloride	1	EN ISO 6401		

N-Nitrosamines*, 9 kinds					PROCESS CHEMICALS
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	
CAS No.	Substance	Usage Ban Trace: 0.5 mg/kg for each	GB/T 24153-2009** Determination using GC/MS, with LC/MS/MS/MS verification if positiv Alternatively, LC/MS/MS may be performed on it own prEN 19577:2017	Regulated in China***	
62-75-9	N-Nitrosodimethylamine				
55-18-5	N-nitrosodiethylamine				
621-64-7	N-nitrosodipropylamine				
924-16-3	N-nitrosodibutylamine				
100-75-4	N-nitrosopiperidine				
930-55-2	N-nitrospyrrolidine				
59-89-2	N-nitrosomorpholine				
614-00-6	N-nitroso-N-methylaniline				
612-64-6	N-nitroso-N-ethylaniline				
* Most common in Shoe Sole Materials (Rubber). **GB/T 24153-2009 “Rubber and elastomer materials – Determination of N-nitrosamines” ***GB25038-2010 " Rubber shoes healthy and safety specification and GB25036-2010 " Children’s Canvas Rubber Footwear"					

Perfluorinated and Polyfluorinated Chemicals (PFCs)					PROPERTY LENDING CHEMICALS
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
CAS No.	Substance	Usage Ban Trace: 1 µg/m^2	CEN/TS 15968 Reporting limit: 0,1 µg/m^2	PFOS is listed in POPs* and banned by Regulation (EC) No 850/2004**. PFOA Cas. 335-67-1 is listed as SVHC and by 14/6/2017 In REACH, Annex XVII, entry 68. Norway has a national ban for PFOA, its salts and esters in consumer products***. The enforcement date is 1 June 2014.	
Various	(PFOS) Perfluorooctane sulphonate and PFOS metallic salt, halogenide, amide and other derivatives				
Various	(PFOA) Perfluorooctanoic acid, its salts and esters				**X**
*POPs are the Stockholm Convention on Persistent Organic Pollutants **Regulation (EC) No 850/2004 (EU regulation implementing Stockholm Convention). ***The restriction applies to both solid and liquid products, including textiles.					

Polycyclic Aromatic Hydrocarbons (PAH's)			PROPERTY LENDING CHEMICALS		
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
PAH – Impurities					
CAS No.	Substance	Sum of all PAH's: 1 mg/kg Toys & childcare articles: 0,5 mg/kg of any of the listed PAHs	ISO 2146 (NMR) AfPS GS 2014-01 PAK ISO/TS 16190 (footwear) Reporting limit: 0.2 mg/kg	BaP, BeP, BaA, CHR, BbFA, BjFA, BkFA, DBAhA, in REACH, Annex XVII, entry 50, regulated for car tires and consumer products such as clothing, footwear, gloves, sportswear, head-bands, watch-straps and wrist-bands*	
50-32-8	(BaP) Benzo[a]pyrene*				X
192-97-2	(BeP) Benzo[e]pyrene*				
56-55-3	(BaA) Benzo[a]anthracene*				X
218-01-9	(CHR) Chrysene*				X
205-99-2	(BbFA) Benzo[b]fluoranthene*				
205-82-3	(BjFA) Benzo[j]fluoranthene*				
207-08-9	(BkFA) Benzo[k]fluoranthene*				
53-70-3	(DBAhA) Dibenzo[a,h]anthracene*				
83-32-9	Acenaphthene	Direct & Prolonged Skin contact** Sum of all PAH's: 10 mg/kg BaP: < 1 mg/kg No Direct Skin contact*** Sum of all PAH's: 200 mg/kg BaP < 20 mg/ kg			
208-96-8	Acenaphthylene				
120-12-7	Anthracene				X
191-24-2	Benzo[ghi]perylene				X
206-44-0	Fluoranthene				
86-73-7	Fluorene				
193-39-5	Indeno[1,2,3-cd]pyrene				
91-20-3	Naphthalene****				
85-01-8	Phenanthrene				
129-00-0	Pyrene				**proposed**

* A restriction of 1 mg/kg per PAH for consumer products came into force the 27th of December 2013 with a 2-year phase out → Now in force. From 2020 these will have a restriction limit od 1 mg/kg for textiles according to REACH, Annex XVII, entry 72
**This restriction should apply to those parts of articles that come into direct and prolonged contact with the skin or the oral cavity under normal conditions of use.
*** This restriction should apply to articles or parts which are only in short or infrequent contact with the skin or oral cavity under normal conditions of use.
**** Naphthalene alone should not be considered as PAH but as a VOC with the limit of 200 mg/kg

Polycyclic Aromatic Hydrocarbons (PAH's) - continued				PROPERTY LENDING CHEMICALS	
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
PAH – Oil Mixtures					
CAS No.	Substance	Sum of all PAH's: 50 mg/kg	Solvent extraction / GC-MS or HPLC-DAD Reporting limit: 0.1 mg/kg		
90640-80-5	Anthracene oil				**X**
91995-17-4	Anthracene oil, anthracene paste, distn. Lights				**X**
91995-15-2	Anthracene oil, anthracene paste, anthracene fractions				**X**
90640-82-7	Anthracene oil, anthracene-low				**X**
90640-81-6	Anthracene oil, anthracene paste				**X**

Phthalates				PROPERTY LENDING CHEMICALS	
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
CAS No.	Substance	Should not be present in products The sum of esters of ortho-phthalic acid must not exceed: 0.1 % by weight	EN/ISO 14389, GC-MS, LC-MS USA: CPSC-HC-C1001-09.3 Reporting limit: 50 mg/kg for each phthalate	EU: 0.1% by weight of the plasticized material in toys and childcare articles which can be placed in the mouth. BBP, DBP, DEHP, DINP, DIDP and DNOP are listed in REACH, Annex XVII, entry 51 & 52. BBP, DBP, DEHP and DIBP are listed in REACH, Annex XIV. Also see footnote * All phthalates in toys and childcare articles for children age 0-3 years are restricted (0,05%) in Denmark (BEK nr 855)	
85-68-7	(BBP) Butyl benzyl phthalate				X
84-74-2	(DBP) Dibutyl phthalate				X
117-81-7	(DEHP) Di(ethylhexyl) phthalate				X
84-66-2	(DEP) Diethyl phthalate				
68515-42-4	(DHNUP) 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters				X
84-69-5	(DIBP) Di-iso-butyl phthalate				X
26761-40-0 68515-49-1	(DIDP) Di-isodecyl phthalate				
71888-89-6	(DIHP) 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich *				X
28553-12-0 68515-48-0	(DINP) Di-isononyl phthalate				
605-50-5	(DIPP) Di-isopentyl phthalate *				X
117-82-8	(DMEP) Di-(2-methoxyethyl) phthalate *				X
131-11-3	(DMP) Dimethyl phthalate				
84-75-3	(DnHP) Di-n-hexyl phthalate *				X
117-84-0	(DNOP) Di-n-octyl phthalate				
131-18-0	(DPP) Di-n-pentyl phthalate *				X
84777-06-0	N-pentyl-isopentylphthalate				X
776297-69-9	(iPnPP) N-pentyl-isopentyl-phthalate	Continue next page	Continue next page		X

Phthalates – continued…				PROPERTY LENDING CHEMICALS
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
CAS No.	Substance	See above	See above	See above & footnote *	
68515-50-4	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear				**X**
68515-51-5	1,2-Benzenedicarboxylic acid, di-C6-10-alkyl ester with ≥ 0,3% of dihexyl phthalate (84-75-3)				**X**
68648-93-1	1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diester with ≥ 0,3% of dihexyl phthalate (84-75-3)				**X**
Various	**All other esters of ortho-phthalic acid**				
* From 2020 these Phthalates (DPP, DnHP, DMEP, DIPP, DIHP) will have a restriction of 1000 mg/kg according to REACH Annex XVII, entry 72					

PVC				POLYMER
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**
CAS No.	Substance	Usage Ban Negative < detection limit	Beilstein test for screening. If positive, confirmation by FTIR.	
9002-86-2	Polyvinyl chloride			

Chlorinated Organic Carriers (COC)				PROCESS CHEMICALS
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**
Chlorinated Benzenes				
CAS No.	Substance	Usage Ban Trace: 1 mg/kg	DIN 54232 Solvent Extraction / GC-MS Reporting limit: 0.1 mg/kg	Cas No. 106-46-7 1,4-dichlorbenzen is in REACH, Annex XVII, entry 64 Pentachlorobenzene, Hexachlorobenzene are listed in POPs* and banned by Regulation (EC) No 850/2004**.
108-90-7	Monochlorobenzene			
Various	Dichlorobenzenes, all isomers			
Various	Trichlorobenzenes, all isomers			
Various	Tetrachlorobenzenes, all isomers			
608-93-5	Pentachlorobenzene			
118-74-1	Hexachlorobenzene			
Chlorinated Toluenes				
CAS No.	Substance	Usage Ban Trace: 1 mg/kg	DIN 54232 Solvent Extraction / GC-MS Reporting limit: 0.1 mg/kg	From 2020, α, α,α,4-tetrachlorotoluene (Cas 5216-25-1), α, α,α-trichlorotoluene (Cas 98-07-7), α-chlorotoluene (Cas 100-44-7) will have a restriction limit of 1 mg/kg in textiles according to REACH, Annex XVII, entry 72
Various	Monochlorotoluenes			
Various	Dichlorotoluenes			
Various	Trichlorotoluenes			
Various	Tetrachlorotoluenes			
877-11-2	Pentachlorotoluene			
*POPs is the Stockholm Convention on Persistent Organic Pollutants **Regulation (EC) No 850/2004 (EU regulation implementing Stockholm Convention).				

Volatile Organic Compounds (VOC's)				PROCESS CHEMICALS	
Restricted Substance		**By Malene Birger Limit (mg/kg)**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
Non-Chlorinated Aromatic Hydrocarbons					
CAS No.	Substance	200	Validated method, extraction or headspace GC/MS identification		
91-20-3	Naphthalene				
Non-halogenated Aliphatic Solvents					
CAS No.	Substance				
75-15-0	Carbon disulphide	10	Validated method, extraction or headspace GC/MS identification.		
110-80-5	2-Ethoxyethanol	80			X
111-15-9	2-Ethoxyethanol acetate	80			X
109-86-4	2-Methoxyethanol	80			X
110-49-6	2-Methoxyethanolacetate	300			
1589-47-5	2-Methoxypropanol	1000			
70657-70-4	2-Methoxypropanol acetate	1000			
122-99-6	2-Phenoxyethanol	400			
111-76-2	2-Butoxyethanol	1000			
75-12-7	Formamide	1000			X
127-19-5	(N,N-DMAC) N,N-dimethylacetamide	1000		From 2020, DMAC, NMP & DMFa will have a restriction limit of 3000 mg/kg according to REACH, Annex XVII, entry 72	X
68-12-2	(N,N-DMF) N,N-Dimethylformamide (DMFa)	1000			X
872-50-4	(NMP) N-Methylpyrrolidone	100			X
Non-halogenated Aromatic Solvents					
CAS No.	Substance	Usage Ban Trace: 5	Validated method, extraction or headspace GC/MS identification.	In REACH Annex XVII, entry 5 From 2020, Benzene (CAS-RN 71-43-2) will have a restriction limit of 5 mg/kg in textiles (CMR fast track) according to REACH, Annex XVII, entry 72	
71-43-2	Benzene				
100-41-4	Ethylbenzene	100			
108-88-3	Toluene	1000	Continue next page	In REACH Annex XVII, entry 48	

Volatile Organic Compounds (VOC's) – continuing				PROCESS CHEMICALS	
Restricted Substance		**By Malene Birger Limit (mg/kg)**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
Halogenated Aliphatic Solvents					
CAS No.	Substance		Validated method, extraction or headspace GC/MS identification.		
127-18-4	(PERC) Tetrachloroethylene	50			
79-01-6	(TCE) Trichloroethylene	50			X
96-18-4	1,2,3-trichloropropane	50			X
76-01-7	Pentachloroethane	100			
56-23-5	(Carbon Tetrachloride) Tetrachloromethane	10			
630-20-6	1,1,1,2-Tetrachloroethane	10			
79-34-5	1,1,2,2-Tetrachloroethane	100			
67-66-3	(Chloroform) Trichloromethane	100			
79-00-5	1,1,2-Trichloroethane	100			
75-35-4	1,1-Dichloroethylene	100			
71-55-6	1,1,1-Trichloroethane	100			
75-09-2	Methylene chloride	100			

Quinoline				PROCESS CHEMICALS	
Restricted Substance		**By Malene Birger Limit (mg/kg)**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
CAS No.	Substance	50	Validated method, extraction or headspace GC/MS identification.	From 2020, Quinoline will have a restriction limit of 50 mg/kg in textiles according to REACH, Annex XVII, entry 72	
91-22-5	Quinoline				

UV STABILISERS				PROPERTY LENDING CHEMICAL	
Restricted Substance		**By Malene Birger Limit (mg/kg)**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
CAS No.	Substance	≤ 1000mg/kg	GC_MS, LC_MS, GC-ECD		
3846-71-7	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)				X
3864-99-1	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)				X
25973-55-1	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)				X
36437-37-3	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)				X

1.4.8 MISCELLANEOUS

pH				MISCELLANEOUS
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**
CAS No.	Substance	Textiles: 4.0 – 8.5 Leather: 3.5 – 6.0	Textiles: ISO 3071 Leather: ISO 4045 pH meter accuracy: 0.2 pH units	
	pH*			
*A pH higher than 10 or lower than 3 can cause skin irritation. The pH value can easily be corrected by washing the article.				

1.4.9 BIOCIDAL AGENTS

Organotin Compounds				BIOCIDAL AGENTS
Restricted Substance		**By Malene Birger Limit**	**Test method & Detection limit**	**Regulation & Country**
CAS No.	Substance	2 mg /kg per substance*	CEN ISO/TS 16179 / Ethanol extraction, derivatization and analysis by GC-MS or LC-MS. Reporting limit: 0.02 mg/kg	Organostannic compounds are listed in REACH, Annex XVII, entry 20. TBTO, Tributyltin oxide and DBT DC, Dibutyltin dichloride is on the REACH, SVHC list.
Various	Mono-, Di-, Tri-butyltin derivates			
Various	Mono-, Di-, Tri-methyltin derivates			
Various	Mono-, Di-, Tri-phenyltin derivates			
Various	Mono-, Di-, Tri-octyltin derivates			
Various	Tricyohexyltin (TCyHT)			
Various	Tri-n-propyltin (TPT)			
*Including but not limited to: (DBT) Dibutyltin, (TBT)** Tributyltin, (TBTO) Tributyltin oxide, (DMT) Dimethyltin, (TMT) Trimethyltin, (TPhT)** Triphenyltin, (DOT) Dioctyltin. ** Oeko-Tex & Japan have a limit of 1ppm for TBT & TPhT				

Phenols (Chlorinated Phenols)				BIOCIDAL AGENTS
Restricted Substance		**By Malene Birger Limit**	**Test method & Detection limit**	**Regulation & Country**
CAS No.	Substance	Usage Ban Trace: 0.5 mg/kg	Textile: § 64 LFGB 82.02.8 GC/MS Identification Reporting limit: 0.1 mg/kg Leather: ISO 17070 Reporting limit: 0.1mg/kg Wood: CEN/TR 14823	Legal limit: 0.1% by weight. PCP is listed in Annex XVII, entry 22, REACH. PCP is banned in Norway and Germany in textiles and leather. Legal limit: 5 mg/kg PCP is listed in the Rotterdam convention.
87-86-5	(PCP) Pentachlorophenol, its salts and compounds			
25167-83-3 4901-51-3 58-90-2 935-95-5	(TeCP) Tetrachlorophenol, its salts and compounds 2,3,4,5 TetraCP 2,3,4,6 TetraCP 2,3,5,6 TetraCP			
  88-06-2 933-75-5 933-78-8 95-95-4 15950-66-0 609-19-8	(TriCP) Trichlorophenols 2,4,6 TriCP 2,3,6 TriCP 2,3,5 TriCP 2,4,5 TriCP 2,3,4 TriCP 3,4,5 TriCP	Adult: Sum 2,0 mg/kg		
90-43-7	(OPP) o-Phenylphenol	Textile/Synthetic leather: 100 mg/kg Leather: 750 mg/kg	Solvent extraction / GC-MS, LC-MS for confirmation. Leather: ISO 13365	Biocide directive 98/8/EC: Under revision for PT9 (textile, leather & polymer)

Other Biocides				BIOCIDAL AGENTS
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**
Dimethyl Fumarate (DMFU)				
CAS No.	Substance	Usage Ban	CEN ISO/TS 16186 Reporting limit: 0.1 mg/kg	Legal limit: 0.1 mg/kg In REACH, Annex XVII, entry 61.
624-49-7	Dimethyl Fumarate (DMFu)			
Permethrin				
CAS No.	Substance	Not Detected Trace: 0.1 mg/kg	GC-MS, LC-MS. Reporting limit: 0.1 mg/kg	On the list of temporarily permitted existing biocides within PT9 (product type 9) that includes textiles, polymers and leather, according to the Biocidal Products Directive (98/8/EC).
52645-53-1	Permethrin			
Sensitizing Isothiazolinones				
CAS No.	Substance	50 mg/kg 250 mg/kg	Solvent extraction / GC-MS, LC-MS for confirmation. Leather: ISO 13365	
26172-55-4	5-Chloro-2-Methyl-4-Isothiazolin-3-One			
2682-20-4	2-Methyl-4-Isothiazolin-3-one			
26530-20-1	2-n-Octyl-4-isothiazolin-3-one (OIT)			
Silver complexes in Nano size (Ag +)				
CAS No.	Substance	Usage Ban	ICP-MS, ICP-OES or AAS. Reporting limit: Total silver: 0.1 mg/kg.	Metallic silver is on the list of temporarily permitted existing biocides within PT9 (product type 9) that includes textiles, polymers and leather, according to the Biocidal Products Directive (98/8/EC).
Not Defined	(Ag +) Silver and It's compounds in Nano size			
Triclosan				
CAS No.	Substance	Usage Ban	GC-MS, LC-MS. Reporting limit: 1,0 mg/kg	On the list of temporarily permitted existing biocides within PT9 (product type 9) that includes textiles, polymers and leather, according to the Biocidal Products Directive (98/8/EC).
3380-34-5	Triclosan			

Other Biocides - continued				BIOCIDAL AGENTS
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**
Cu-HDO				
CAS No.	Substance	Usage Ban	ICP-AES	Cu-HDO is banned within PT9 (product type 9) that includes textiles, polymers and leather, according to the Biocidal Product Regulation (EU 528/2012)
312600-89-8	Cu-HDO (Bis-(N-cyclohexyldiazeniumdioxy)-copper)			
Polyhexamethylene biguanide (PHMB)				
CAS No.	Substance	Usage ban	GC-MS, LC-MS.	PHMB is banned within PT9 (product type 9) that includes textiles, polymers and leather, according to the Biocidal Products regulation (EU 528/2012)
27083-27-8 32289-58-2	Polyhexamethylene biguanide (PHMB)			
Tributyltin Compounds				
CAS No.	Substance	Usage ban	No standardized method available for textiles GC-MS	All tri-substituted organotannic compounds such as TBT are restricted in all articles in REACH, Annex XVII, entry 20 Seven TBT compounds are also included in the Rotterdam convention
Various	Tributyltin Compounds			

1.4.10 RESTRICTIONS ON PACKAGING

Restrictions on Packaging*					
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
CAS No.	Substance	Usage Ban for all 4 metals Trace of Cd & Pb: 100 mg/kg Trace of Cr^{+6}: 3 mg/kg Trace of Hg: 0.2 mg/kg Total Trace of all 4 metals: 100 mg/kg	CEN/CR 13695-1	Total sum of Cd, Pb, Cr^{+6} and Hg shall not exceed 100 ppm by weight, Directive (EC) No 94/62/EC of 20 December 1994 on packaging and packaging waste.	
7440-43-9	(Cd) Cadmium				**X**
7439-92-1	(Pb) Lead				
18540-29-9	(Cr^{+6}) Chromium hexavalent				
7439-97-6	(Hg) Mercury				
7646-79-9	Cobalt dichloride	Should not be present in Silica bags**. Trace: 0.1%	Test equipment: AAS or ICP-OES	In REACH Annex XVII, entry 28 & 30	**X**
624-49-7	(DMFu) Dimethylfumarate	Usage Ban Trace: 0.1 mg/kg	Solvent extraction / GC-MS	In REACH Annex XVII, entry 61	
9002-86-2	PVC	Usage Ban Negative < detection limit	Beilstein test for screening. If positive, confirmation by FTIR.		

*Packaging means transportation packaging as well as product packaging, i.e., any material used for the function packaging purpose such as containment, protection, handling, delivery, and presentation of finished products. For metals, concentration is calculated at element level.
**Commonly used for detection of moisture, for example in drying agents such as silica gel. When cobalt dichloride is added as an indicator, the drying agent is blue when still active and pink when exhausted.

Restrictions on Packaging continuing…..					
Boric acid, borate compounds*				**PROPERTY LENDING CHEMICALS**	
Restricted Substance		**By Malene Birger Limit**	**Test method & Reporting limit**	**Regulation & Country**	**SVHC**
CAS No.	Substance	Usage ban	1) AAS 2) ICP-MS and ICP-OES Reporting limit: 1) 1000 µg/kg as Boron 2) 100 µg/kg as Boron	Legal limit: 1000 mg/kg or 0.1% by weight	
10043-35-3 11113-50-1	Boric acid				**X**
1303-96-4 1330-43-4 12179-04-3	Disodium tetraborate anhydrous				**X**
12267-73-1	Tetraboron disodium heptaoxide hydrate				**X**
234-390-0	Sodium perborate; perboric acid, sodium salt				**X**
7632-04-04	Sodium peroxometaborate				**X**
*Commonly found in Wood material in packaging.					

1.4.11 SUBSTANCES WHICH ARE NOT COMMONLY FOUND IN BY MALENE BIRGER PRODUCTS

Asbestos			
Restricted Substance		**By Malene Birger Limit**	**Regulation & Country**
CAS No.	Substance	Usage Ban Limit: Not Detected	Listed in Annex XVII, entry 6 Switzerland: ORRChem annex 1.6 (art. 3) USA: 16 CFR 1500.17 entry 7 Unlikely in everyday wear except for firefighting Personal Protection equipment (PPE)
77536-66-4	Actinolite		
12172-73-5	Amosite		
77536-67-5	Anthophyllite		
12001-29-5	Chrysotile		
12001-28-4	Crocidolite		
77536-68-6	Tremolite		

Dioxins & Furans		
Restricted Substance		**By Malene Birger Limit**
Group 1:		
CAS No.	Substance	Unavoidable traces: Sum of Group 1: 1 µg/kg
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	
Group 2:		
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	Unavoidable traces: Sum of Group 1 & 2: 5 µg/kg
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	
70648-26-9	1,2,3,4,7,8Hexachlorodibenzofuran	
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	
Group 3:		
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	Unavoidable traces: Sum of Group 1, 2 & 3: 100 µg/kg
3268-87-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	
39001-02-0	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	
Group 4:		
50585-41-6	2,3,7,8-Tetrabromodibenzo-p-dioxin	Unavoidable traces: Sum of Group 4: 1 µg/kg
109333-34-8	1,2,3,7,8-Pentabromodibenzo-p-dioxin	
67933-57-7	2,3,7,8-Tetrabromodibenzofuran	
131166-92-2	2,3,4,7,8-Pentabromdibenzofuran	
Group 5:		
110999-44-5	1,2,3,4,7,8-Hexabromodibenzo-p-dioxin	Unavoidable traces: Sum of Group 4 & 5: 5 µg/kg
110999-46-7	1,2,3,7,8,9-Hexabromodibenzo-p-dioxin	
110999-45-6	1,2,3,6,7,8-Hexabromodibenzo-p-dioxin	
107555-93-1	1,2,3,7,8-Pentabromodibenzofuran	

Fluorinated Greenhouse Gases		
Restricted Substance		**By Malene Birger Limit**
CAS No.	Substance	Usage Ban
2551-62-4	Sulphur hexafluoride - SF_6	
Hydrofluorocarbons (HFCs):		
75-46-7	HFC-23 - CHF_3	Usage Ban
75-10-5	HFC-32 - CH_2F_2	
593-53-3	HFC-41 - CH_3F	
138495-42-8	HFC-43-10mee - $C_5H_2F_{10}$	
354-33-6	HFC-125 - C_2HF_5	
359-35-3	HFC-134 - $C_2H_2F_4$	
811-97-2	HFC-134a - CH_2FCF_3	
75-37-6	HFC-152a - $C_2H_4F_2$	
420-46-2	HFC-143 - $C_2H_3F_3$	
470-46-6	HFC-143a - $C_2H_3F_3$	
431-89-0	HFC-227ea - C_3HF_7	
	HFC-236cb - $CH_2FCF_2CF_3$	
431-63-0	HFC-236ea - CHF_2CHFCF_3	
690-39-1	HFC-236fa - $C_3H_2F_6$	
679-86-7	HFC-245ca - $C_3H_3F_5$	
460-73-1	HFC-245fa - $CHF_2CH_2CF_3$	
406-58-6	HFC-365mfc - $CF_3CH_2CF_2CH_3$	
Perfluorocarbons (PFCs):		
75-73-0	Perfluoromethane - CF_4	Usage Ban
76-16-4	Perfluoroethane - C_2F_6	
76-19-7	Perfluoropropane - C_3F_8	
355-25-9	Perfluorobutane - C_4F_{10}	
67-8-26-2	Perfluoropentane - C_5F_{12}	
355-42-0	Perfluorohaxane - C_6F_{14}	
115-25-3	Perfluorocyclobutane - c-C_4F_8	

Ozone Depleting Substances - Class I and II		
Restricted Substance		**By Malene Birger Limit**
Ozone Depleting Substances Class I		
75-69-4	Trichlorofluoromethane CFC-11	Usage Ban
75-71-8	Dichlorofluoromethane CFC-12	
354-58-5	1,1,1-trichlorotrifluoroethane CFC-113	
76-13-1	1,1,2-trifluoroethane CFC-113	
76-14-2	Dichlorotetrafluoroethane CFC-114	
76-15-3	Monochloropentafluoroethane CFC-15	
353-59-3	Bromochlorodifluoroethane Halon-1211	
75-63-8	Bromotrifluoromethane Halon-1301	
124-73-2	Dibromotetrafluoroethane Halon-2402	
75-72-9	Chlorotrifluoromethane CFC-13	
354-56-3	Pentachlorofluoroethane CFC-111	
76-12-0	Tetrachlorodifluoroethane CFC-112	
422-78-6	Heptachlorofluoropropane CFC-211	
3182-26-1	Hexachlorodifluoropropane CFC-212	
2354 06 5	Pentachlorotrifluoropropane CFC-213	
29255-31-0	Tetrachlorotetrafluoropropane CFC-214	
1599-41-3	Trichloropentafluoropropane CFC-215	
661-97-2	Dichlorohexafluoropropane CFC-216	
422-86-6	Monochloroheptafluoropropane CFC-217	
56-23-5	Carbon tetrachloride CC14	
71-55-6	1,1,1 trichloroethane (methyl Chloroform)	
	Halon-1211	
	Halon-1301	
	Halon-2402	

Ozone Depleting Substances Class II	
Trichlorotetrafluoropropane HCFC-4	Usage Ban
Dichlorofluoromethane-HCFC-21	
Monochlorodifluoromethane HCFC-22	
Monochlorofluoromethane HCFC-31	
Tetrachlorofluoroethane HCFC-121	
Trichlorodifluoroethane-HCFC-122	
Dichlorotrifluoroethane HCFC-123	
Monochlorotetrafluoroethane HCFC-124	
Trichlorofluoroethane-HCFC-131	
Dichlorodifluoroethane HCFC-132B	
Monochlorotrifluoroethane HCFC-133A	
Dichlorofluoroethane HCFC -141B	
Monochlorodifluoroethane HCFC-142B	
Hexachlorofluoropropane HCFC-221	
Pentachlorodifluoropropane HCFC-222	
Tetrachlorotrifluoropropane HCFC-223	
Tirchlorotetrafluoropropane HCFC-224	
Dichloropentafluoropropane HCFC-225CA	
Dichloropentafluoropropane HCFC-225CB	
Monochlorohexafluoropropane HCFC-226	
Pentachlorofluoropropane HCFC-231	
Tetrachlorodifluoropropane HCFC-232	
Trichlorotrifluoropropane HCFC-233	
Dichlorotetrafluropropane HCFC-234	
Monchloropentafluoropropane HCFC-235	
Tetrachlorofluoropropane HCFC-241	
Trichlorodifluoropropane HCFC-242	
Dichlorotrifluoropropane HCFC-243	
Monochlorotetrafluoropropane HCFC-244	
Trichlorofluoropropane HCFC-251	
Dichlorofluoropropane HCFC-252	

Ozone Depleting Substances Class II - continued	
Monochlorodifluoropropane HCFC-253	Usage ban
Dichlorofluoropropane HCFC-261	
Monochlorodifluoropropane HCFC-262	
Monochlorofluoropropane HCFC-271	

Pesticides		
Restricted Substance		**By Malene Birger Limit**
CAS No.	Substance	Usage Ban Trace: 0.5 mg/kg
93-76-5	2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)	
94-75-7	2,4-Dichlorophenoxyacetic acid (2,4-D)	
135410-20-7, 160430-64-8	Acetamiprid	
116-06-3	Aldicarb	
86-50-0	Azinophosmethyl	
2642-71-9	Azinophosethyl	
309-00-2	Aldrin	
4824-78-6	Bromophos-ethyl	
191906	Captafol	
63-25-2	Carbaryl	
57-74-9	Chlordane	
6164-98-3	Chlordimeform	
470-90-6	Chlorfenvinphos	
210880-92-5	Clothianidin	
56-72-4	Coumaphos	
68359-37-5	Cyfluthrin	
91465-08-6	Cyhalothrin	
52315-07-8	Cypermethrin	
78-48-8	1,2,4-Tributylphosphorotrithioate (DEF)	
52918-63-5	Deltamethrin	
53-19-0, 72-54-8	Mitotan, 1,1-Dichlor- 2-(2-chlorphenyl)- 2-(4-chlorphenyl)ethane (DDD)	
3424-82-6, 72-55-9	1-Chlor-4-[2,2-dichlor-1-(4-chlorphenyl)ethenyl]benzene (DDE)	
50-29-3, 789-02-6	1,1,1-Trichlor-2,2-bis-(4-chlorophenyl)ethane (DDT)	
333-41-5	Diazinon	
120-36-5	Dichlorprop	
141-66-2	Dicrotophos	
60-57-1	Dieldrin	
60-51-5	Dimethoat	
88-85-7 et al	Dinoseb, Salze und Acetat	

Pesticides - continued		
Restricted Substance		**By Malene Birger Limit**
CAS No.	Substance	Usage Ban Trace: 0.5 mg/kg
165252-70-0	Dinotefuran	
959-98-8	Endosulfan, α-	
33213-65-9	Endosulfan, β-	
72-20-8	Endrin	
66230-04-4	Esfenvalerat	
51630-58-1	Fenvalerat	
76-44-8	Heptachlor	
1024-57-3	Heptachlorepoxid	
118-74-1	Hexachlorbenzol	
319-84-6	Hexachlorcyclohexan, α-	
319-85-7	Hexachlorcyclohexan, β-	
319-86-8	Hexachlorcyclohexan, δ-	
105827-78-9, 138261-41-3	Imidacloprid	
465-73-6	Isodrin	
4234-79-1	Kelevan	
143-50-0	Kepon	
58-89-9	Lindan	
121-75-5	Malathion	
94-74-6	2-Methyl-4-chlorophenoxyacetic acid	
94-81-5	(2-Methyl-4-chlorophenoxy) butyric acid	
93-65-2	Mecoprop	
10265-92-6	Metamidophos	
72-43-5	Methoxychlor	
2385-85-5	Mirex	
6923-22-4	Monocrotophos	
150824-47-8	Nitenpyram	
56-38-2	Parathion	
298-00-0	Parathion-methyl	
72-56-0	Perthan	
7786-34-7	Phosdrin/Mevinphos	
31218-83-4	Propethamphos	
41198-08-7	Profenophos	

Pesticides - continued		
Restricted Substance		**By Malene Birger Limit**
CAS No.	Substance	Usage Ban Trace: 0.5 mg/kg
13593-03-8	Quinalphos	
8001-50-1	Stroban	
297-78-9	Telodrin	
111988-49-9	Thiacloprid	
153719-23-4	Thiamethoxam	
8001-35-2	Toxaphen (Camphechlor)	
1582-09-8	Trifluralin	

Polyhalogenated Aromatic Hydrocarbons		
Restricted Substance		**By Malene Birger Limit**
1336-36-3, 53469-21-9	(PCB) Halogenated Biphenyls, including Polychlorinated Biphenyls	Usage Ban
Various	Halogenated Diarylalkanes	
Various	Halogenated Naphthalenes	
No CAS #	(PCT) Halogenated Terphenols, including Polychlorinated terphenyl	
99688-47-8 81161-70-8 76253-60-6	Halogenated diphenyl methanes, including: Halogenated diphenyl methanes Monmethyl-dibtomom-diphenyl methane Monomethyl-tetrachloro-diphenyls methane	Usage Ban

1.4.12 CANDIDATE LIST WITH SUBSTANCES OF VERY HIGH CONCERN

Link to the SVHC List

The list of ECHA Candidates, SVHC's, is continuously updated. This list is available on the ECHA homepage:
http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

SVHC List, 191 Substances, last updated 27-06-2018

Substances name		EC Number	CAS Number	Date of inclusion	Remarks & additional information (These are examples and are not conclusive)
1	4,4' Methylendianiline	202-974-4	101-77-9	28.10.2008	Raw material to produce methylene diphenyl diisocyanate for PUR (main application). Hardener in epoxy resins, adhesives.
2	Bis(tributyltin) oxide, (TBTO)	200-268-0	56-35-9	28.10.2008	Biocide in anti-fouling paint and other biocide uses, also for industrial use.
3	Benzylbutylphthalate (BBP)	201-622-7	85-68-7	28.10.2008	Plasticizer (mainly for PVC), adhesives, inks, lacquers, small use in package, cosmetics.
4	Anthracene	204-371-1	120-12-7	28.10.2008	From coal tar distillation. Raw material for other synthesis.
5	Triethyl arsenate	427-700-2	15606-95-8	28.10.2008	Wood preservation (phased out), pesticide, glass goods, E&E products, PVC.
6	Hexabromocyclododecane, (HBCDD)	247-148-4	25637-99-4	28.10.2008	Flame retardant (mainly in PS). In constructions, buildings also in flame-retard textiles and E&E products.
7	5-tert-butyl-2,4,6-trinitro-m-xylene	201-329-4	81-15-2	28.10.2008	Cosmetics.
8	Alkanes, C10-13, Chloro (Short chain chlorinated paraffins)	287-476-5	85535-84-8	28.10.2008	Metal working lubricants, fat liquoring of leather, flame retardant in textiles, rubber, paint, sealants and adhesives.
9	Cobalt(2+) dichloride	231-589-4	7646-79-9	28.10.2008	Absorber for gases, humidity indicator (e.g., silica gels), to produce vitamin B12, dye mordant for glass industry, solid lubricant, catalyst, invisible inks, drying agent, production of non-ferrous metals, electroplating, additive in rubber production.
10	Sodium dichromate, dihydrate	234-190-3	7789-12-0	28.10.2008	Production of other Cr-product as chromate pigments, use for paints and plastic coloration, corrosive protection for metals, in vitamin K production, preparation of colored glass and ceramic glazes, in wood preparation, in production of essential oils and perfumes.

11	Di(2-ethylhexyl)phthalate (DEHP)	204-211-0	117-81-7	28.10.2008	Plasticizer in resins and polymers (mainly PVC).
12	Lead hydrogen arsenate	232-064-2	7784-40-9	28.10.2008	Wood preservation (phased out), pesticide, glass goods, E&E products, PVC.
13	Diarsenicpentoxide	215-116-9	1303-28-2	28.10.2008	Dying industry, metallurgy (harden copper, lead, gold), special glasses, wood preservation.
14	Diarsenic trioxide	215-481-4	1327-53-3	28.10.2008	Decolorizing agent for glass and enamels, application in glass and lead glass industry, wood preservation, to produce other As chemicals.
15	Dibutylphthalate	201-557-4	84-74-2	28.10.2008	Plasticizer in resins and polymers (mainly PVC) Also used in printing inks, adhesives (e.g. paper, package), sealant/grouting agents, nitrocellulose paints, film coatings, glass fibers and consumer products.
16	2,4-Dinitrotoluene	204-450-0	121-14-2	13.01.2010	Used as intermediate in the production of TDI, this is used to produce Polyurethane. Gelatinizing plasticizing agent. Automotive airbags. Intermediate for Azo dyes.
17	Anthracene oil	292-602-7	90640-80-5	13.01.2010	These Anthracene oils consist of PAH. It is mainly used as an intermediate to produce pure Anthracene which is used to produce dyes. Also used in carbon black, pharmaceuticals, and wood preservative, waterproof membranes for roofing, asphalt and industrial viscosity modifiers.
18	Anthracene oil fraction (a complex combination of the distillation of Anthracene)	295-278-5	91995-17-4	13.01.2010	
19	Anthraceneoil, Athracene paste, Anthracene fraction	295-275-9	91995-15-2	13.01.2010	
20	Anthracene oil, Anthracene-low	292-604-8	90640-82-7	13.01.2010	
21	Anthracene oil, Anthracene paste	292-603-2	90640-81-6	13.01.2010	
22	Diisobutyl phthalate (DIBP)	201-553-2	84-69-5	13.01.2010	Plasticizer in several consumer products (e.g. crayons, bar ends of run bikes, erasers, toys, perfumes).
23	Lead chromate	231-846-0	7758-97-6	13.01.2010	Basis for lead chromate pigments (e.g. C.I. Pigment Red 104 and C.I. Pigment Yellow 34). Lead chromate based paints are used in paints for their corrosive protections properties and bright colours.
24	Lead chromate molybdate sulfate red (C.I. Pigment Red 104)	235-759-9	12656-85-8	13.01.2010	C.I. Pigment Red 104 is a colorant based on lead chromate and used i.e. as pigment in plastic colouring, as well as industrial paint. Also reported are textile printing, leather finishing and some printing inks.
25	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	215-693-7	1344-37-2	13.01.2010	C.I. Pigment Yellow 34 is a colorant based on lead chromate and used i.e. as pigment in plastic colouring, as well as industrial paint.

26	Tris(2-chloroethyl)phosphate	204-118-5	115-96-8	13.01.2010	Used as flame retardant. (Historical use in Polyurethane foam in EU)
27	Coal tar pitch, high temperature	266-028-2	65996-93-2	13.01.2010	Coal tar pitch is a residue from distillation of coal tar containing various aromatic compounds. Used as coal substitute in steel industry, coke making process, production of carbon black.
28	Acrylamide	201-173-7	79-06-1	30.03.2010	Intermediate in polyacrylamide production.
29	Trichloroethylene	201-167-4	79-01-6	18.06.2010	Cleaning and degreasing of metal parts, used in adhesives, chemical intermediates, in leather and textile processing industries and in paints, lacquers and varnishes industry.
30	Boric acid	233-139-2; 234-343-4	10043-35-3; 11113-50-1	18.06.2010	In biocides and preservatives, personal care products, disinfectants, preservatives in wood, textile, paper, leather, rubber, polymers, additives in several products like dental products, food, glass, ceramics, rubber, fertilizers, flame retardants, paints, industrial fluids, brake fluids, soldering products, film developers.
31	Disodium tetraborate, anhydrous	215-540-4	1330-43-4; 12179-04-3; 1303-96-4	18.06.2010	In glass and glass fibres, ceramics, detergents and cleaners, metallurgy, flame retardants.
32	Tetraboron disodium heptaoxide, hydrate	235-541-3	12267-73-1	18.06.2010	In glass and glass fibres, ceramics, detergents and cleaners, personal care products, industrial fluids, metallurgy, adhesives, flame retardants, biocides, fertilizers.
33	Potassium chromate	232-140-5	7789-00-6	18.06.2010	Treatment and coating of metals, manufacture of reagents and chemicals, manufacture of textiles, colouring agent in ceramics, tanning and dressing of leather, manufacture of pigments/inks, laboratory (analytical reagent), pyrotechnics.
34	Sodium chromate	231-889-5	7775-11-3	18.06.2010	Steel and alloy industry, leather and textile industry, laboratory (analytical agent), manufacture of other chromium compounds.
35	Ammonium dichromate	232-143-1	7789-09-5	18.06.2010	Oxidizing agent, laboratory (analytical agent), tanning of leather, manufacture of textiles, and manufacture of photosensitive screens (cathode ray tubes), metal treatment.
36	Potassium dichromate	231-906-6	7778-50-9	18.06.2010	Chrome metal manufacturing, treatment and coating of metals, manufacture of reagents and chemicals, laboratory (analytical agent), cleaning of laboratory glassware, tanning of leather, manufacture of textiles, photolithography, wood treatment and corrosion inhibitor in cooling systems.

37	Cobalt(II) sulphate	233-334-2	10124-43-3	15.12.2010	Mainly used in the production of other chemicals. Further applications may include manufacture of catalysts and driers, surface treatments (such as electroplating), corrosion prevention, production of pigments, decolorizing (in glass, pottery), batteries, animal food supplements, soil fertilizers, and others.
38	Cobalt(II) dinitrate	233-402-1	10141-05-6	15.12.2010	Mainly used in the production of other chemicals and the manufacture of catalysts. Further applications may include surface treatment and batteries.
39	Cobalt(II) carbonate	208-169-4	513-79-1	15.12.2010	Mainly used in the manufacture of catalysts. Minor uses may include feed additive, production of other chemicals, production of pigments, and adhesion (in ground coat frit).
40	Cobalt(II) diacetate	200-755-8	71-48-7	15.12.2010	Mainly used in the manufacture of catalysts. Minor uses may include production of other chemicals, surface treatment, alloys, and production of pigments, dyes, rubber adhesion, and feed additive.
41	2-Methoxyethanol	203-713-7	109-86-4	15.12.2010	Mainly used as solvent, intermediate and as an additive for fuel. Might be used as well in textile finishing.
42	2-Ethoxyethanol	203-804-1	110-80-5	15.12.2010	Mainly used as solvent and chemical intermediate. Might be used as well in textile finishing.
43	Chromium trioxide	215-607-8	1333-82-0	15.12.2010	Used for metal finishing and as fixing agent in waterborne wood preservatives.
44	Acids generated from chromium trioxide and their oligomers: Chromic acid Dichromic acid Oligomers of chromic acid and dichromic acid	231-801-5 236-881-5	7738-94-5 13530-68-2	15.12.2010	These acids and their oligomers are generated when chromium trioxide is dissolved in water. Chromium trioxide is mainly used in the form of aqueous solutions. Consequently, the uses of these substances are the same as indicated for chromium trioxide.
45	2-ethoxyethyl acetate	203-839-2	111-15-9	31.05.2011	In paints, adhesives, glues, cosmetics, leather, wood stains, semiconductors, photographic and photolithographic.
46	Strontium chromate	232-142-6	7789-06-2	31.05.2011	In paints, varnishes and oil colours, metal conditioners or in aluminium flake coatings.
47	1,2-Benzenedicarboxylic acid, di-7-11-branched and linear alkyl esters (DHNUP)	271-084-6	68515-42-4	31.05.2011	Plasticizer in PVC, electrical cables and adhesives.

48	Hydrazine	206-114-9	7803-57-8; 302-01-2	31.05.2011	In metal coatings, on glass and plastics, in plastics, rubber, PU and dyes.
49	1-methyl-2-pyrrolidone	212-828-1	872-50-4	31.05.2011	Solvent in coatings, surface treatment of textiles & resins and metal coated plastics.
50	1,2,3-trichloropropane	202-486-1	96-18-4	31.05.2011	Solvent in degreasers, cleaning solutions, paint thinners, pesticides, resins and glues.
51	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	276-158-1	71888-89-6	31.05.2011	Plasticizer in PVC, sealants and printing inks.
52	Dichromium tris(chromate)	246-356-2	24613-89-6	19.12.2011	Main use in mixtures for metal surface treatment in aeronautic/aerospace, steel and aluminium coating sectors.
53	Potassium hydroxyoctaoxo dizincatedichromate	234-329-8	11103-86-9	19.12.2011	Main use in coatings in aeronautic/ aerospace, steel and aluminium coil coating and vehicle coating sectors.
54	Pentazinc chromate octahydroxide	256-418-0	49663-84-5	19.12.2011	Main use in coatings in vehicle coating and aeronautic / aerospace sectors.
55	Bis(2-methoxyethyl) phthalate (DMEP)	204-212-6	117-82-8	19.12.2011	Main uses in the past were as plasticizer in polymeric materials and paints, lacquers and varnishes, including printing inks.

56	Aluminosilicate Refractory Ceramic Fibres (RCF), covered by Annex VI, part 3, table 3.1 of EC 1272/2008, and fulfil the three following conditions: a) oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration rang b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm) c) alkaline oxide and alkali earth oxide ($Na_2O+K_2O+CaO+MgO+BaO$) content less or equal to 18% by weight	650-017-00-8*		19.12.2011	Aluminosilicate Refractory Ceramic Fibres are a special category of synthetic vitreous fibres, commonly known as man-made vitreous fibres. May be used in electrical and domestic appliances, like glass ceramic hobs, electric ovens and grills, microwaves, gas-fired apparatus. Also in fire protection windows and doors, motor construction. * Index number in Annex VI of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

57	Zirconia Aluminosilicate Refractory Ceramic Fibres Zr-RCF), covered by Annex VI, part 3, table 3.1 of EC 1272/2008, and fulfil the three following conditions: a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm) c) alkaline oxide and alkali earth oxide (Na2O+K2O+CaO+MgO +BaO) content less or equal to 18% by weight	650-017-00-8*		19.12.2011	Zirconia Aluminosilicate Refractory Ceramic Fibres are a special category of synthetic vitreous fibres, commonly known as man-made vitreous fibres. May be used in electrical and domestic appliances, like glass ceramic hobs, electric ovens and grills, microwaves, gas-fired apparatus. Also in fire protection windows and doors, motor construction. * Index number in Annex VI of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
58	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	500-036-1	25214-70-4	19.12.2011	Raw material for production of other substances. Minor uses as hardener for epoxy resins, e.g., in rolls, pipes and moulds, and adhesives.
59	2-Methoxyaniline; o-Anisidine	201-963-1	90-04-0	19.12.2011	Main use in production of dyes for tattooing and coloration of paper, polymers and aluminium foil.
60	4-(1,1,3,3-tetramethylbutyl)phenol	205-426-2	140-66-9	19.12.2011	Main use in production of polymer preparations and ethoxylates. Further use as a component in adhesives, coatings, inks and rubber articles.
61	1,2-Dichloroethane	203-458-1	107-06-2	19.12.2011	Main use in production of other substances. Minor use as solvent in the chemical and pharmaceutical industry.
62	Bis(2-methoxyethyl) ether	203-924-4	111-96-6	19.12.2011	Used as solvent or process chemical in various applications. Used also as solvent for battery electrolytes, and in other products (sealants, adhesives, fuels and automotive care products).
63	Arsenic acid	231-901-9	7778-39-4	19.12.2011	Use to remove gas bubbles from ceramic glass melt and in the production of laminated printed circuit boards.

64	Calcium arsenate	231-904-5	7778-44-1	19.12.2011	Present in complex raw materials imported for manufacture of copper, lead and other precious metals. Main use as precipitating agent in copper smelting and to manufacture diarsenic trioxide.
65	Trilead diarsenate	222-979-5	3687-31-8	19.12.2011	In complex raw materials imported for production of copper, lead and other precious metals. During metallurgical refinement process it is transformed to calcium arsenate and diarsenic trioxide.
66	N,N-dimethylacetamide (DMAC)	204-826-4	127-19-5	19.12.2011	Used as solvent in production of other substances and fibres for clothing and other applications. Also used as reagent, and in products (industrial coatings, polyimide films, paint strippers and ink removers).
67	2,2‘-dichloro-4,4‘- methylenedianiline (MOCA)	202-918-9	101-14-4	19.12.2011	Used as curing agent in resins and in the production of polymer articles and production of other substances. Further use in construction and arts.
68	Phenolphthalein	201-004-7	77-09-8	19.12.2011	Main use as pH indicator (laboratory), for the production of pH-indicator paper and in medicinal products.
69	Lead azide, Lead diazide	236-542-1	13424-46-9	19.12.2011	Use as initiator or booster in detonators (civilian & military) and as initiator in pyrotechnics.
70	Lead styphnate	239-290-0	15245-44-0	19.12.2011	Use as a primer for small calibre and rifle ammunition. Other common uses are in munitions pyrotechnics, powder actuated devices and detonators for civilian use.
71	Lead dipicrate	229-335-2	6477-64-1	19.12.2011	Explosive compound like lead diazide and lead styphnate and may be used in detonator mixtures together with the two other mentioned lead compounds.
72	1,2-bis(2methoxy-ethoxy) ethane (TEGDME;triglyme)	203-977-3	112-49-2	18.06.2012	Mainly used as a solvent or as a processing aid in the manufacture and formulation of industrial chemicals. Minor use in brake fluids and repair of motor vehicles.
73	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	203-794-9	110-71-4	18.06.2012	Mainly used as a solvent or as a processing aid in the manufacture and formulation of industrial chemicals, including use as an electrolyte solvent in lithium batteries.
74	4,4‘-bis(dimethylamino)-4‘‘(methyl-amino)trityl alcohol (C.I. Solvent Violet 8)	209-218-2	561-41-1	18.06.2012	Used in the production of writing inks and potentially in the production of other inks, as well as for dyeing of a variety of materials.

75	4,4‘-bis(dimethylamino) benzophenone (Michler’s ketone)	202-027-5	90-94-8	18.06.2012	Intermediate in the manufacture of triphenylmethane dyes and other substances. Further potential uses include as additive (photosensitizer) in dyes and pigments, in dry film products, as a process chemical in the production of electronic circuit boards, in research and development applications.
76	[4-[4,4‘-bis(dimethyl-amino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethyl ammonium chloride (C.I. Basic Violet 3)	208-953-6	548-62-9	18.06.2012	Used mainly for paper colouring and inks supplied in printer cartridges and ball pens. Further uses include staining of dried plants, marker for increasing the visibility of liquids, staining in microbial and clinical laboratories.
77	[4-[[4-anilino-1-naphthyl] [4(dimethylamino)phenyl] methylene]cyclohexa-2,5- dien-1ylidene] dimethyl ammonium chloride (C.I. Basic Blue 26)	219-943-6	2580-56-5	18.06.2012	Used in the production of inks, cleaners, and coatings, as well as for dyeing of paper, packaging, textiles, plastic products, and other types of articles. It is also used in diagnostic and analytical applications.
78	N,N,N‘,N‘-tetramethyl-4,4‘methylenedianiline (Michler’s base)	202-959-2	101-61-1	18.06.2012	Intermediate in the manufacture of dyes and other substances. Used also as chemical reagent in research and development.
79	α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4)	229-851-8	6786-83-0	18.06.2012	Mainly used in the production of printing and writing inks, for dyeing of paper and in mixtures such as windscreen washing agents.
80	Diboron trioxide	215-125-8	1303-86-2	18.06.2012	Used in a multitude of applications, e.g., in glass and glass fibres, frits, ceramics, flame retardants, catalysts, industrial fluids, metallurgy, adhesives, inks/paints, film developer solutions, detergents and cleaners, biocides and insecticides.
81	Formamide	200-842-0	75-12-7	18.06.2012	Mainly used as an intermediate. Minor uses as solvent, as reagent chemical (in the pharmaceutical industry) and as laboratory chemical. The substance seems further to be used in the agrochemical industry and as a plasticizer.
82	Lead(II) bis(methanesulfonate)	401-750-5	17570-76-2	18.06.2012	Mainly used in plating (both electrolytic and electrolysis) processes for electronic components (such as printed circuit boards).

83	TGIC (1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-(1H,3H,5H)trione	219-514-3	2451-62-9	18.06.2012	Mainly used as a hardener in resins and coatings; also used in inks for the printed circuit board industry, electrical insulation material, resin moulding systems, laminated sheeting, silk screen printing coatings, tools, adhesives, lining materials and stabilizers for plastics.
84	ß-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine- 2,4,6-(1H,3H,5H)trione)	423-400-0	59653-74-6	18.06.2012	Mainly used as a hardener in resins and coatings; also used in inks for the printed circuit board industry, electrical insulation material, resin moulding systems, laminated sheeting, silk screen printing coatings, tools, adhesives, lining materials and stabilizers for plastics.
85	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	214-604-9	1163-19-5	19.12.2012	Used as flame retardant in plastics, binders, paints, varnishes, floor covering materials, manufacture of printed circuit boards, home electronics coatings (e.g. television cabinets), office electronics, including mobile telephone equipment, within textile applications, upholstery, cables and insulation materials.
86	Pentacosafluorotridecanoic acid	276-745-2	72629-94-8	19.12.2012	Used as non-stick water and stain repellent in food wrappers, kitchen pans, clothing and food packaging. Also used as fire extinguisher foam.
87	Tricosafluorododecanoic acid	206-203-2	307-55-1	19.12.2012	
88	Henicosafluoroundecanoic acid	218-165-4	2058-94-8	19.12.2012	
89	Heptacosafluorotetrade- canoic acid	206-803-4	376-06-7	19.12.2012	
90	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	204-650-8	123-77-3	19.12.2012	Used in the production of plastics, foams and coatings as blowing agent, aging and bleaching ingredient, foaming agent or catalyst. Main areas are insulating material, construction material and cement filler. Also used in adhesive, coatings or inks.
91	Cyclohexane-1,2-dicarbo-xylic anhydride, cis-cyclohexane-1,2-di-carboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	201-604-9, 236-086-3, 238-009-9	85-42-7, 13149-00-3, 14166-21-3	19.12.2012	Intermediate of alkyd resins, plasticizers, insect repellents and rust inhibitors. Also used as hardener in epoxy resins.

92	Hexahydromethylphthalic anhydride, Hexahydro-4-methyl-phthalic anhydride, Hexahydro-1-methyl-phthalic anhydride, Hexahydro-3-methyl-phthalic anhydride	247-094-1, 243-072-0, 256-356-4, 260-566-1	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	19.12.2012	Widely used in the manufacture of polyester and alkyd resins and as plasticizers for thermoplastic polymers. Also used as hardeners for epoxy resins and chain cross-linkers for thermoplastic polymers.
93	4-Nonylphenol, branched and linear	-	-	19.12.2012	In textile production, paper production as a component of phenolic resins used in coatings, e.g. for carbonless copy paper, and other NP-resins used for printing inks. It is also used as raw material in the production of Ethoxylated Nonylphenols.
94	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	-	19.12.2012	Part of polymer dispersions in the production of paints, paper, inks, adhesives and carpet backings. Emulsifier in finishing agents for covering leather and textiles with a thin polymer film.
95	Methoxyacetic acid	210-894-6	625-45-6	19.12.2012	As an intermediate for the manufacture of chemical products, and as cleaning/washing agent in the buildings sector.
96	N,N-dimethylformamide; dimethyl formamide	200-679-5	68-12-2	19.12.2012	Solvent for the production of polymers used e.g. in plastics, artificial leathers, coatings, resin. Formulation of mixtures e.g. paints, adhesives, coatings, pesticides and medicines. Furthermore, used in acetylene bottles.
97	Dibutyltin dichloride (DBTC)	211-670-0	683-18-1	19.12.2012	As stabilizer in plastics. Catalyst in the production of polyurethanes and silicones used for insulation and coatings.
98	Lead oxide (lead monoxide)	215-267-0	1317-36-8	19.12.2012	Additive in PVC- and rubber products. It is also used in lead battery production, in crystal glass production and in the production of ceramic ware. Historically also used as pigments.
99	Lead tetroxide (orange lead)	215-235-6	1314-41-6	19.12.2012	Additive in PVC- and rubber products. It is also used in lead battery production, in crystal glass production, in the production of ceramic ware, in manufacture of rubber protection, in lead oxide and stabilizer production. Historically also used as pigments.
100	Lead bis(tetrafluoroborate)	237-486-0	13814-96-5	19.12.2012	Used in electroplating & laboratory use.
101	Trilead bis(carbonate) dihydroxide (basic lead carbonate)	215-290-6	1319-46-6	19.12.2012	Raw material of PTC ceramics and semiconductors. Historically also used in pigments.
102	Lead titanium trioxide	235-038-9	12060-00-3	19.12.2012	

103	Lead titanium zirconium oxide	235-727-4	12626-81-2	19.12.2012	Used in the manufacture of semiconductors for computers, electronic and
104	Silicic acid, lead salt	234-363-3	11120-22-2	19.12.2012	Found in lead crystal ware.
105	Silicic acid (H2Si2O5), barium salt (1:1), lead-doped	272-271-5	68784-75-8	19.12.2012	Especially used in coatings of light bulbs.
106	1-bromopropane (n-propyl bromide)	203-445-0	106-94-5	19.12.2012	Mostly used as solvent for fats, waxes or resins, in some spray adhesives and as cleaner in the metal and electronics industries.
107	Methyloxirane (Propylene oxide)	200-879-2	75-56-9	19.12.2012	Used as intermediate in the polymer and chemicals production, could also be used as fumigation agent.
108	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	284-032-2	84777-06-0	19.12.2012	Could be used as plasticizer in plastics or coatings.
109	Diisopentylphthalate (DIPP)	210-088-4	605-50-5	19.12.2012	As plasticizer for nitrocellulose propellants, possibly also in plastic materials.
110	N-pentyl-isopentyl- phthalate (iPnPP)	-	776297-69-9	19.12.2012	Could be used as plasticizer in plastics or coatings.
111	1,2-Diethoxyethane	211-076-1	629-14-1	19.12.2012	As inert solvent in the production of ester gum, shellac and some resins and oils. Also used as solvent for detergents and dyes in non-grain raising stains.
112	Acetic acid, lead salt, basic	257-175-3	51404-69-4	19.12.2012	Used in few hair cosmetics and as intermediate in the production of lead compounds.
113	Lead oxide sulphate	234-853-7	12036-76-9	19.12.2012	Could be used as stabilizer in PVC products.
114	[Phthalato(2-)]dioxotrilead (Dibasic lead phthalate)	273-688-5	69011-06-9	19.12.2012	
115	Dioxobis(stearato)trilead	235-702-8	12578-12-0	19.12.2012	Could be used as stabilizer in PVC products, medical applications and lubricants.
116	Fatty acids, C16-18, lead salts	292-966-7	91031-62-8	19.12.2012	Could be used as stabilizer in PVC products and as intermediate in the lead battery production.
117	Lead cyanamidate	244-073-9	20837-86-9	19.12.2012	No data on possible uses available.
118	Lead dinitrate	233-245-9	10099-74-8	19.12.2012	Compound in Pigment production and in the production of explosives and matches. Also used as textile etchant.
119	Pentalead tetraoxide sulphate	235-067-7	12065-90-6	19.12.2012	Could be used as stabilizer in PVC products and as intermediate in the lead battery production.
120	Pyrochlore, antimony lead yellow	232-382-1	8012-00-8	19.12.2012	As pigment in lead glazes for ceramic articles. Also used in historical pigments.

121	Sulfurous acid, lead salt, dibasic	263-467-1	62229-08-7	19.12.2012	Could be used as stabilizer in PVC products and as intermediate in the lead battery production.
122	Tetraethyllead	201-075-4	78-00-2	19.12.2012	Historical use as fuel additive.
123	Tetralead trioxide sulphate	235-380-9	12202-17-4	19.12.2012	Could be used as stabilizer in PVC products and as intermediate in the lead battery production.
124	Trilead dioxide phos- phonate	235-252-2	12141-20-7	19.12.2012	
125	Furan	203-727-3	110-00-9	19.12.2012	Intermediate in the production of THF and for special resins for mould castings.
126	Diethyl sulphate	200-589-6	64-67-5	19.12.2012	Intermediate in the synthesis of polymers and fine chemicals.
127	Dimethyl sulphate	201-058-1	77-78-1	19.12.2012	Used as raw material for various chemicals, cosmetics, paints and medical products.
128	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	421-150-7	143860-04-2	19.12.2012	In paint for polyurethane, in polyurethane finishing and sealants as moisture scavenger or reactant diluent.
129	Dinoseb (6-sec-butyl-2,4-dinit- rophenol)	201-861-7	88-85-7	19.12.2012	Possibly additive in styrene production, has also been used as pesticide.
130	4,4‘-methylenedi-o-toluidine	212-658-8	838-88-0	19.12.2012	As intermediate for laboratory use, monomer in high performance polyimide products. It´s also a component in the production of certain Azo dyes.
131	4,4‘-oxydianiline and its salts	202-977-0	101-80-4	19.12.2012	As monomer in high performance polyimide products. It´s also a component in the production of certain Azo dyes.
132	4-aminoazobenzene	200-453-6	60-09-3	19.12.2012	Used as intermediate for the production of certain Azo dyes.
133	4-methyl-m-phenylenediamine (2,4-toluene-diamine)	202-453-1	95-80-7	19.12.2012	In the production of sulphur dyes and as intermediate in the production of PU Plastics. It´s also a component in the production of certain Azo dyes.
134	6-methoxy-m-toluidine (p-cresidine)	204-419-1	120-71-8	19.12.2012	Intermediate in the production of PU Plastics and certain Azo dyes.
135	Biphenyl-4-ylamine	202-177-1	92-67-1	19.12.2012	Intermediate to produce certain Azo dyes.
136	o-aminoazotoluene [(4-o-tolylazo-o-toluidine])	202-591-2	97-56-3	19.12.2012	
137	o-toluidine	202-429-0	95-53-4	19.12.2012	
138	N-methylacetamide	201-182-6	79-16-3	19.12.2012	Used as laboratory chemical.
139	Pentadecafluoroocanoic acid (PFOA)	206-397-9	335-67-1	20.06.2013	Mostly used in the production of Fluoropolymers.
140	Ammoniumpantadecafluorootanoate (APFO)	223-320-4	3825-26-1	20.06.2013	Mostly used in the production of Fluoropolymers.

141	Cadmium	231-152-8	7440-43-9	20.06.2013	Used for example in metal alloys, in anticorrosion formulations, as stabilizer in PVC materials, in some rechargeable batteries and for the production of cadmium compounds.
142	Cadmium oxide	215-146-2	1306-19-0	20.06.2013	Industrially used in electroplating baths, to produce coloured glass and ceramics as well as photodiodes.
143	Dipentyl phthalate (DPP)	205-017-9	131-18-0	20.06.2013	Could be used as plasticizer in plastics or coatings.
144	4-Nonylphenol, branched and linear, ethoxylated (NPEO) [Substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]	-	-	20.06.2013	Wide range of uses such as detergent ingredient, emulsifier in textile and leather production as well as metal finishing.
145	Cadmium Sulphide	215-147-	1306-23-6	16.12.2013	Used as a high-performance pigment and semiconducting substance in photo electronics components like solar panels.
146	Dihexyl phthalate (DnHP)	201-559-5	84-75-3	16.12.2013	Could be used as plasticizer in plastics or coatings.
147	Disodium 3,3‘-[[1,1‘-biphenyl]-4,4‘-diylbis(azo)]bis(4-amino-naphthalene-1-sulphonate) (C.I. Direct Red 28)	209-358-4	573-58-0	16.12.2013	Could be used as pigment in textile- and other dyes.
148	Disodium 4-amino-3-[[4‘-[(2,4-diaminophenyl)azo] [1,1‘-biphenyl]-4-yl]azo] -5-hydroxy-6-(phenylazo) naphthalene-2,7-disulphonate (C.I.	217-710-3	1937-37-7	16.12.2013	Could be used as pigment in textile- and other dyes.
149	2-imidazoline-2-thiol	202-506-9	96-45-7	16.12.2013	Widely used as vulcanisation agent in and neoprene and polyacrylate rubber articles.
150	Lead diacetate	206-104-4	301-04-2	16.12.2013	Used as intermediate for other lead compounds and as laboratory chemical.

151	Trixylyl phosphate	246-677-8	25155-23-1	16.12.2013	Diversely used industry chemical (flame retardant, metal working fluid, lubricant, hydraulic fluid, plasticiser).
152	Cadmium chloride	233-296-7	10108-64-2	16.06.2014	Cadmium chloride is used for preparation of other chemicals, in laboratory, and also for photocopying, dyeing and electroplating.
153	1,2-Benzenedicarboxylic acid, dihexyl ester, bran- ched and linear	271-093-5	68515-50-4	16.06.2014	Could be used as plasticizers in plastics and coatings.
154	Sodium peroxometaborate	231-556-4	7632-04-4	16.06.2014	Might be used as bleaching agent in laundry detergents and machine dishwashing products as well as in household cleaners. Used in some special laboratory chemicals.
155	Sodium perborate; perboric acid, sodium salt	239-172-9; 234-390-0	-	16.06.2014	Might be used as intermediate in chemical reactions and as bleaching agent mainly in household and professional detergents. Also used in some In Vitro Diagnostics.
156	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	247-384-8	25973-55-1	17/12/2014	UV-stabilizer for plastics, polyurethanes and rubber, and constituent in formulations used in coating of surfaces, e.eg. cars or special wood coatings.
157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	223-346-6	3846-71-7	17/12/2014	UV-stabilizer for plastics, polyurethanes and rubber, and constituent in formulations used in coating of surfaces, e.eg. cars or special wood coatings.
158	2-ethylhexyl 10-ethyl-4,4-dioctyl- 7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	239-622-4	15571-58-1	17/12/2014	Stabilizer in PVC Processing.
159	Cadmium fluoride	232-222-0	7790-79-6	17/12/2014	Used in production of metallic alloys.
160	Cadmium sulphate	233-331-6	10124-36-4, 31119-53-6	17/12/2014	Used as pigment (e.g. Glass and plastic). Its semiconducting property together with chemical/physical properties makes cadmium sulphide useful for photoelectronic applications (e.g. solar cells).
161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	-	-	17/12/2014	Stabilizer in PVC Processing.

162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters or mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5) 1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters EC no.: 272-013-1 | CAS no.: 68648-93-1	-	-	15/06/2015	Used in plasticizers and lubricants, for example in adhesives, lubricants, coatings, building materials, cable compounding, polymer foil, PVC compounds and artist supply.
163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] covering any of the individual stereoisomers of [1] and [2] or any combination thereof 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane EC no.: - | CAS no.: - 5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane EC no.: - | CAS no.: -	-	-	15/06/2015	Fragrance ingredient.
164	1,3-propanesultone	214-317-9	1120-71-4	17/12/2015	Electrolyte fluid of lithium ion batteries.
165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	223-383-8	3864-99-1	17/12/2015	UV protection agent in coatings, plastic, rubber and cosmetics.
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	253-037-1	36437-37-3	17/12/2015	UV protection agent in coatings, plastic, rubber and cosmetics.
167	Nitrobenzene	202-716-0	98-95-3	17/12/2015	Manufacture of other substances.

168	Perfluorononan-1-oic-acid and its sodium and ammonium salts Ammonium salts of perfluorononan-1-oic-acid EC no.: - | CAS no.: -, 4149-60-4 Perfluorononan-1-oic-acid EC no.: 206-801-3 | CAS no.: 375-95-1 Sodium salts of perfluorononan-1-oic-acid EC no.: - | CAS no.: -, 21049-39-8	-	-	17/12/2015	Processing aid for fluoropolymer manufacture/lubricating oil additive/surfactant for fire extinguishers/cleaning agent/textile antifouling finishing agent/polishing surfactant/waterproofing agents and in liquid crystal display panels.
169	Benzo[def]chrysene (Benzo[a]pyrene)	200-028-5	50-32-8	20/06/2016	Normally not manufactured intentionally but may occur as a constituent or impurity in other substances.
170	4,4'-isopropylidenediphenol Bisphenol A; BPA	201-245-8	80-05-7	12/01/2017 15/01/2018	Manufacture of polycarbonate, as a hardener for epoxy resins, as an anti-oxidant for processing PVC and in thermal paper production.
171	4-heptylphenol, branched and linear substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof	-	-	12/01/2017	Manufacture of polymers; formulation into lubricants.

172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts Nonadecafluorodecanoic acid EC no.: 206-400-3 | CAS no.: 335-76-2 Decanoic acid, nonadecafluoro-, sodium salt EC no.: - | CAS no.: 3830-45-3 Ammonium nonadecafluorodecanoate EC no.: 221-470-5 | CAS no.: 3108-42-7	-	-	12/01/2017	Lubricant, wetting agent, plasticiser and corrosion inhibitor.
173	p-(1,1-dimethylpropyl)phenol	201-280-9	80-46-6	12/01/2017	Manufacture of chemicals and plastic products
174	Perfluorohexane-1-sulphonic acid and its salts (PFHxS)	-	-	07/07/2017	Degradation product from additives in cleaning agents, ant pesticide bait, fire extinguishing agent, metal plating and impregnation agent in leather and textiles.
175	Chrysene	205-923-4	218-01-9	15/01/2018	Normally not produced intentionally but rather occurs as a constituent or impurity in other substances.
176	Benz[a]anthracene	200-280-6	56-55-3	15/01/2018	Normally not produced intentionally but rather occurs as a constituent or impurity in other substances.
177	Cadmium nitrate	233-710-6	10325-94-7	15/01/2018	Used for the manufacture of glass, porcelain and ceramic products and in laboratory chemicals.
178	Cadmium hydroxide	244-168-5	21041-95-2	15/01/2018	Used for the manufacture of electrical, electronic and optical equipment and in laboratory chemicals.
179	Cadmium carbonate	208-168-9	513-78-0	15/01/2018	Used as a pH regulator and in water treatment products, laboratory chemicals, cosmetics and personal care products.
180	1,6,7,8,9,14,15,16,17,17,18,18 Dodecachloropentacyclo[12.2.1 .16,9.02,13.05,10] octadeca-7,15-diene (Dechlorane PlusTM), [covering any of its individual anti- and syn-isomers or any combination thereof]	-	-	15/01/2018	Non-plasticizing flame retardant for plastics, electronic wiring and cables, automobiles, hard plastic connectors and plastic roofing material. Use in adhesives and sealants. Use in binding agents.

181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear	-	-	15/01/2018	Used as a lubricant additive in lubricants and greases.
182	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride) (TMA)	209-008-0	552-30-7	27/06/2018	Used in the manufacture of esters and polymers.
183	Dicyclohexyl phthalate (DCHP)	201-545-9	84-61-7	27/06/2018	Used in plastisol, PVC, rubber and plastic articles. A further use is also as a phlegmatizer and dispersing agent for formulations of organic peroxides.
184	Terphenyl hydrogenated	262-967-7	61788-32-7	27/06/2018	Used as a plastic additive, solvent, in coatings/inks, in adhesives and sealants, and heat transfer fluids.
185	Octamethylcyclotetrasiloxane (D4)	209-136-7	556-67-2	27/06/2018	This substance may be found in flooring, furniture, toys, construction materials, curtains, footwear, leather products and electronic equipment, and in products with paper-based material (e.g. tissues, feminine hygiene products, nappies, books, magazines, wallpaper).
186	Lead	231-100-4	7439-92-1	27/06/2018	This substance may be used in metals articles, welding and soldering products, metal surface treatment products, polymers, in batteries, lead sheets, hot-dip galvanised steel, lead solder, lead ammunition (non-military) & cable sheathing.
187	Ethylenediamine (EDA)	203-468-6	107-15-3	27/06/2018	Used in adhesives and sealants, coating products, fillers, putties, plasters, modelling clay, pH regulators and water treatment products.
188	Dodecamethylcyclohexasiloxane (D6)	208-762-8	540-97-6	27/06/2018	This substance may be found in articles produced from polysiloxane polymers and resins (used, for example, in construction, aerospace and automotive sectors).
189	Disodium octaborate	234-541-0	12008-41-2	27/06/2018	Used in anti-freeze products, heat transfer fluids, lubricants and greases, and washing and cleaning products. It may also be found in frits, cellulose insulation, and construction materials, flux mixtures and refractory mixtures (including stone, plaster, cement, glass and ceramic articles, and wood articles).
190	Decamethylcyclopentasiloxane (D5)	208-764-9	541-02-6	27/06/2018	This substance may be found in tyres, treated wooden products, treated textile and fabric, and brake pads in trucks or cars.
191	Benzo[ghi]perylene	205-883-8	191-24-2	27/06/2018	Not registered under REACH. Normally not produced intentionally but rather occurs as a constituent or impurity in other substances.

Appendix 01

BY MALENE BIRGER RSL CORRECTIVE ACTION PLAN (CAP)		
Product info	Style number:	Brand:
	Style name:	Season:
	Col code:	Purchase order number:
	Product:	Supplier name:
	Merchandiser's name and email:	Supplier contact's name and email:
Lab info	Testing lab:	Lab contact's name and email:
	Test report number:	
	Description of the failed components and found substance:	
CAP	Identification and mapping of the source in the process where the failure occur:	
	Provide an action plan for correcting the specific case:	
	Provide an action plan for supplier to prevent the same to repeat in future production:	
	Action taken to prevent the same to repeat:	Verification of action taken and implemented:
	List of relevant documentation to be attached:	
	Signature	Date:

Appendix 02

RISK ASSESSMENT OF NANO SIZED MATERIALS

Questionnaire for suppliers of products that may contain Nano sized materials.

INTRODUCTION
Please provide as detailed answers as possible using all of your available information for each endpoint section below. Please write your answers per endpoint on a separate document which you enclose.

If there is no information available, please indicate with (X) below.

If the endpoint is irrelevant, please indicate with (X) below and provide a written explanation in the "comments" column regarding why this particular endpoint is irrelevant.

ENDPOINTS FOR NANO SIZED MATERIALS:

Nanomaterial Information/ Identification	**No data available**	**Irrelevant**	**Comments**
Nanomaterial name			
CAS Number			
Structural formula/molecular structure			
Composition of Nano material (including degree of purity, known impurities or additives)			
Basic morphology			
Description of surface chemistry (e.g., coating, modification…)			
Major commercial uses			
Known catalytic activity			
Method of production (e.g., precipitation, gas phase…)			
Other relevant identification data			

Physical-Chemical Properties and Material Characterization	No data available	Irrelevant	Comments
Agglomeration/ aggregation			
Water solubility/ Dispersibility			
Crystalline phase			
Dustiness			
Crystallite size			
Representative Electron Microscopy (TEM) picture(s) (if available, please enclose).			
Particle size distribution – dry and in relevant media			
Specific surface area			
Zeta potential (surface charge)			
Surface chemistry (where appropriate)			
Photo catalytic activity			
Pour density			
Porosity			
Octanol-water partition coefficient, where relevant			
Redox potential			
Radical formation potential			
Other relevant Physical-Chemical Properties and Material Characterization information (please specify if available).			

Environmental Fate	No data available	Irrelevant	Comments
Dispersion stability in water			
Biotic degradability			
Ready biodegradability			
Inherent biodegradability			
Simulation testing on ultimate degradation in surface water			
Soil simulation testing			
Sediment simulation testing			
Sewage treatment simulation testing			
Identification of degradation product(s)			
Abiotic Degradability and Fate			
Adsorption- desorption			
Adsorption to soil or sediment			
Bioaccumulation potential			
Other relevant environmental fate information (please specify if available)			

Environmental Toxicology	**No data available**	**Irrelevant**	**Comments**
Effects on pelagic specie (short term/long term)			
Effects on sediment species (short term/long term)			
Effects on soil species (short term/long term)			
Effects on terrestrial species			
Effects on microorganisms			
Effects on activated sludge at WWTP			
Other relevant information (please specify if available)			

Mammalian Toxicology	**No data available**	**Irrelevant**	**Comments**
Pharmacokinetics/ Toxicokinetics (ADME)			
Acute toxicity			
Repeated dose toxicity			
Chronic toxicity			
Reproductive toxicity			
Developmental toxicity			
Genetic toxicity			
Experience with human exposure			
Other relevant test data (please specify if available)			

Material Safety	**No data available**	**Irrelevant**	**Comments**
Flammability			
Explosivity			
Incompatibility			

Source: *(OECD, Series on the Safety of Manufactured Nanomaterials No. 27, LIST OF MANUFACTURED NANOMATERIALS AND LIST OF ENDPOINTS FOR PHASE ONE OF THE SPONSORSHIP PROGRAMME FOR THE TESTING OF MANUFACTURED NANOMATERIALS: REVISION, 1st of December 2010)*

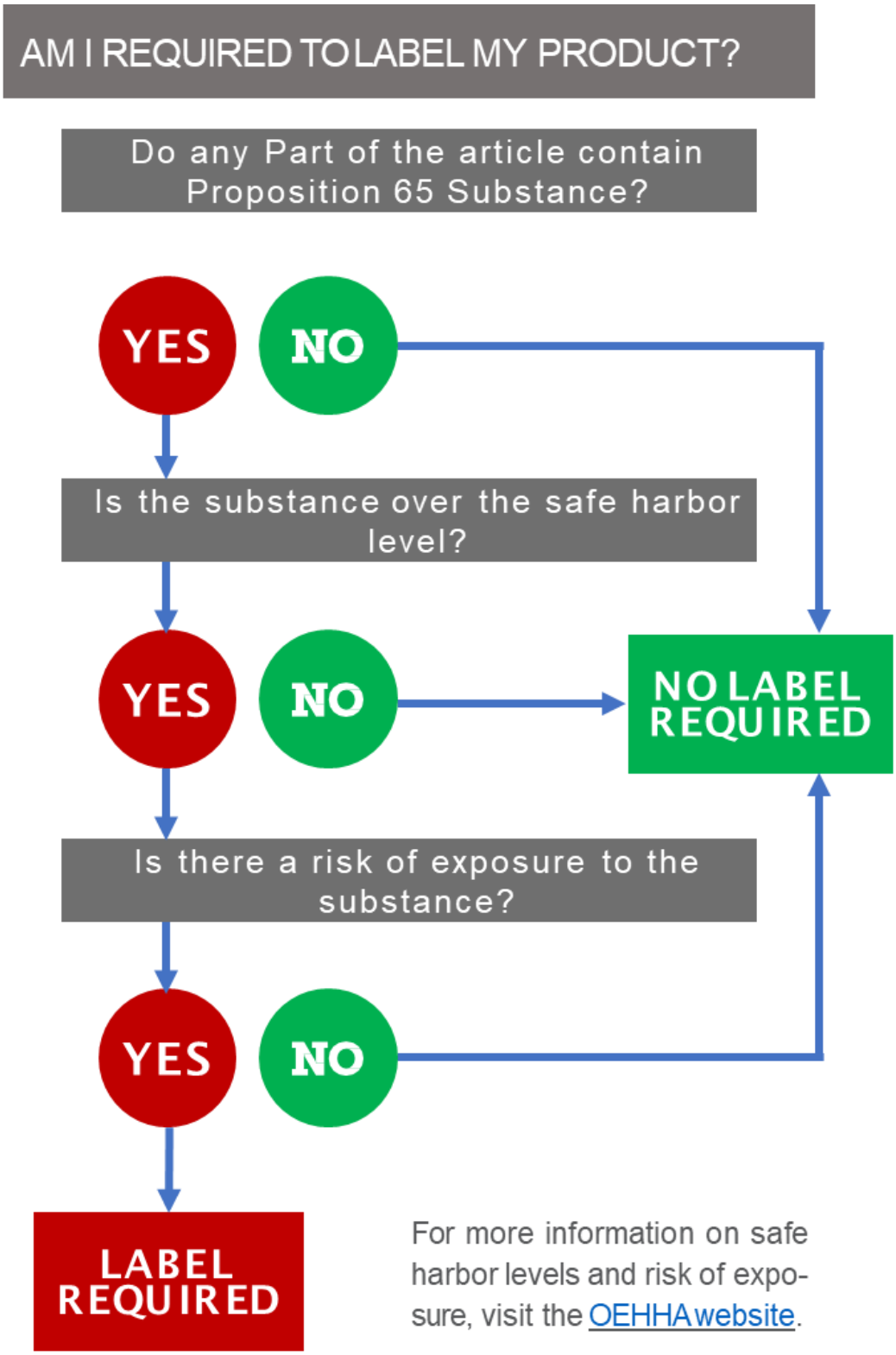
CONFORMITY STATEMENT

(Supplier) ……..... hereby confirm that the information provided in this document is consistent with the current state-of-the-art for (Product) …….…….

Supplier Contact info (name, telephone no, mail) …….

....
Authorized signature Place and date

Appendix 03 – Proposition 65 risk assessment


AM I REQUIRED TO LABEL MY PRODUCT?
Do any Part of the article contain Proposition 65 Substance?
YES
NO
Is the substance over the safe harbor level?
YES
NO
NO LABEL REQUIRED
Is there a risk of exposure to the substance?
YES
NO
LABEL REQUIRED
For more information on safe harbor levels and risk of exposure, visit the OEHHA website.

Appendix 04

Modern Testing Services Contact List for By Malene Birger

PROGRAM MANAGEMENT		
DEPARTMENT	CONTACT PERSON	CONTACT INFORMATION
Hong Kong 香港		
General Enquiry	RSL – Mr. Gordon Chiu	Email: gchiu@mts-global.com Tel: (852) 3604 1351 Fax: (852) 2144 0663
	Performance – Ms. Yen Wong	Email: ywong@mts-global.com Tel: (852) 3604 1366 Fax: (852) 2799 9135
Asia Program Manager	RSL – Dr. Charles Wong	Email: charleswong@mts-global.com Tel: (852) 3604 1301 Fax: (852) 2144 0663
	Performance – Patrick Lai	Email: plai@mts-global.com Tel: (852) 3604 1368 Fax: (852) 2799 9135
Mailing address	Modern Testing Services (Hong Kong) Limited 現代技術(環球)有限公司 6-8/F, CEO Tower, 77 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong 香港九龍長沙灣永康街 77 號環薈中心 6-8 樓	
Germany 德國		
RSL Technical Program Manager	Dr. Dieter Sedlak, Managing Director	Email: d.sedlak@mts-germany.eu Tel: +49 (821) 5697 9610 Fax: +49 (821) 5697 9690
Mailing address	Modern Testing Services (Germany) GmbH Provinostr. 52, D-86153 Augsburg, Germany	

ASIA (CHINA)		
DEPARTMENT	**CONTACT PERSON**	**CONTACT INFORMATION**
Shanghai 上海		
General Enquiry	Mr. Garrison Yin	Email: gyin@mts-global.com Tel: (86) 21 2350 9600 ext. 9611
	Ms. Vivian Gu	Email: vivianqu@mts-global.com Tel: +86 21 2350 9653
Technical Enquiry	Dr. Richard Yue	Email: ryue@mts-global.com Tel: (86) 21 6489 7353
Mailing address	Modern Testing Services (Shanghai) Co Ltd No.105.Guangzhong Rd, Zhuangiao Town. Shanghai. China	
Dongguan 東莞		
General Enquiry	RSL – Harny Lam	Email: hlam@mts-china.com Tel: (86) 769 8112 0818 ext. 887
	Performance – Marianne Lee	Email: mlee@mts-china.com Tel: (86) 769 8112 0818 ext. 824
Mailing address	Modern Testing Services (Dongguan) Limited No.76, Liang Ping Lu, Xin Jiu Wei Cun, Liaobu, Dongguan, China	

ASIA (Others)		
DEPARTMENT	**CONTACT PERSON**	**CONTACT INFORMATION**
India		
General Enquiry	Mr K R Vishnu Kumar Lab Director	Email: vishnu.kumar@mts-india.com Tel: +91 421 – 42430 15, 653 2747
Program Management	Mr Pavan Kumar TG Executive (Analytical)	Email: pavan.kumar@mts-india.com Tel: +91 421 – 42430 14, 653 2747
Mailing address	Modern Testing Services (India) Pvt. Ltd New Siva Towers, No. 229-230, Kumaran Road, Tirupur - 641 601 Tamilnadu, India	
Bangladesh		
General Enquiry	Dipok Ghosh. General Manager	Email: dipok@mtsbd.com Mobile: 88 01755642001
Program Management	Pipel Chandra Das Head Of Technical Governance, analytical Division	Email: pipel@mtsbd.com Mobile:+ 88 01755642035
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Pakistan		
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