H&M GROUP CHEMICAL RESTRICTIONS 2018

RESTRICTED SUBSTANCES LIST (RSL)

Electrical and Electronic Products and Batteries

Global Product Compliance Department  Valid for all brands in the H&M Group.
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General

H&M has established H&M Group Chemical Restrictions for all products due to concern for the health of customers as well as for the environment and working conditions. H&M Group Chemical Restrictions consist of several parts with regards to product type. This document concerns Electrical and Electronic Products and Batteries. Each limit in H&M Group Chemical Restrictions is valid for homogeneous parts of the concerned product. Test methods are specified but in case of undated test method, the latest version is valid. If the product is sold in a packaging, it must also comply with H&M Group Chemical Restrictions Packages\(^1\).

In addition to this part of the H&M Group Chemical Restrictions, production of Electrical and Electronic Products and Batteries must also fulfill H&M Group Chemical Restrictions regarding the Manufacturing Restricted Substance List (MRSL). These documents are to be found on the Supplier Portal as well as on www.hm.com/chemical-restrictions.

The official and valid version of this document is in English. Any translation of the document is prepared for reference only. H&M accepts no liability for any mistakes done in the translation.

Commitment

By accepting H&M Standard Purchase Conditions, the Supplier commits to comply with H&M Group Chemical Restrictions. It is the Supplier’s responsibility to assure compliance with H&M Group Chemical Restrictions and to inform all their upstream suppliers and subcontractors about the content of H&M Group Chemical Restrictions.

By accepting H&M Standard Purchase Conditions, each Supplier acknowledges that H&M reserves the right to:

- **Inspect and test any product, any part of production and/or packaging, by any listed or appropriate method, at any time or at any stage of production.**

- **Cancel the Order, or, if the products are already delivered, return the products to the Supplier if the product, production and/or packaging do not correspond to the H&M Group Chemical Restrictions.**

- **Hold the Supplier responsible for any damage caused by the ordered product if the product, production and/or packaging do not correspond to the H&M Group Chemical Restrictions.**

- **Receive the Safety Data Sheets (SDS) for all substances and preparations (dyes, colorants, solvents, chemicals etc.) used in the production of a specific Order.**

\(^1\) Publicly available
In the case of contradictory test results, H&M test results will prevail.

Examples

All details on your product must comply with H&M Group Chemical Restrictions. The examples do not claim to be complete.

- **Watches**
  - Wristband should follow H&M Group Chemical Restrictions
- **Apparel/Accessories/Footwear/Home Interior Textile Products**
- **Ear phones**
- **Lamps**
- **Portable batteries**

Definitions

<table>
<thead>
<tr>
<th>Concentration Limit</th>
<th>The substance must not be present in the product at concentrations above this limit.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Detected</td>
<td>The substance must not be present in the finished product at concentrations above the analytical reporting limit.</td>
</tr>
<tr>
<td>Homogeneous</td>
<td>Uniform composition throughout, i.e. a material that cannot be mechanically disjointed into different materials.</td>
</tr>
<tr>
<td>Substances defined as hazardous due to intrinsic properties.</td>
<td>Persistent, bioaccumulative and toxic (PBT), very persistent and very bioaccumulative (vPvB), carcinogenic, mutagenic and toxic for reproduction (CMR), endocrine disruptors (ED) or equivalent concern</td>
</tr>
</tbody>
</table>

Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS no</td>
<td>Chemical Abstracts Service number, an identification number for chemicals in this database.</td>
</tr>
<tr>
<td>ppm</td>
<td>Parts per million, which is the same as mg/kg.</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorization and restriction of Chemicals</td>
</tr>
<tr>
<td>SVHC</td>
<td>Substances of Very High Concern</td>
</tr>
</tbody>
</table>
Requirements – All Electric and Electronic Equipment

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Limit/requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EU Directive 2011/65/EU – RoHS²</strong></td>
<td>All electrical and electronic equipment must comply with EU directive 2011/65/EU including its amendments. Valid test reports and certificates must be available. Test method: IEC 62321</td>
</tr>
<tr>
<td><strong>China RoHS³</strong></td>
<td>All electrical and electronic equipment destined for China must be tested and comply with China RoHS. Test method: GB/T 26572</td>
</tr>
</tbody>
</table>

Requirements – Materials

<table>
<thead>
<tr>
<th>Restricted substance</th>
<th>CAS no</th>
<th>Concentration Limit/Requirement</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flame Retardants⁴</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tris(2-chloroethyl) phosphate (TCEP)</td>
<td>115-96-8</td>
<td>1000 ppm</td>
<td>Methanol extraction and analysis by GC-MS and LC-MS</td>
</tr>
<tr>
<td>Tris(1,3-dichloro-2-propyl) phosphate (TDCPP)</td>
<td>13674-87-8</td>
<td>1000 ppm</td>
<td>Methanol extraction and analysis by GC-MS and LC-MS</td>
</tr>
<tr>
<td>Hexabromocyclododecane</td>
<td>3194-55-6, 25637-99-4, 134237-50-6, 134237-51-7, 134237-52-8</td>
<td>50 ppm</td>
<td>Methanol extraction and analysis by GC-MS and LC-MS</td>
</tr>
<tr>
<td><strong>Organotin Compounds</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dibutyltin (DBT)</td>
<td>1002-53-5</td>
<td>1 ppm</td>
<td>ISO/TS 16179 (modified) Methanol/Ethanol extraction, derivatization and analysis by GC-MS</td>
</tr>
<tr>
<td>Diocytlin (DOT)</td>
<td>94410-05-6</td>
<td>1 ppm</td>
<td>Methanol/Ethanol extraction, derivatization and analysis by GC-MS</td>
</tr>
<tr>
<td>Tributyltin (TBT)</td>
<td>56573-85-4</td>
<td></td>
<td>Sum = Not detected</td>
</tr>
<tr>
<td>Tricyclohexyltin (TCyHT)</td>
<td>6056-50-4</td>
<td></td>
<td>Sum = Not detected</td>
</tr>
<tr>
<td>Triocytlin (TOT)</td>
<td>250252-89-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triphenyltin (TPhT)</td>
<td>668-34-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other not listed trisubstituted organotins</td>
<td>Various</td>
<td>Sum&lt;1 ppm</td>
<td></td>
</tr>
</tbody>
</table>

² Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
³ Administrative Measure on the Control of Pollution Caused by Electrical and Electronic Products.
⁴ H&M Global Product Compliance Department must approve the usage of any flame retardant on any kind of product. Please contact GPCD at dgllobalchemicalcomplianceexpert@hm.com
## H&M Group Chemical Restrictions

### Electrical and Electronic Products and Batteries

Valid for all brands in H&M group

<table>
<thead>
<tr>
<th>Restricted substance</th>
<th>CAS no</th>
<th>Concentration Limit/Requirement</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chloroparaffins</strong></td>
<td></td>
<td></td>
<td>N-hexane extraction, ultra sound 40°C, 30 min and analysis by GC-MS using NCI (Negative Chemical Ionization) Draft EN ISO 18219:2012-12 (modified)</td>
</tr>
<tr>
<td>Short chained chloroparaffins (SCCPs) C10-C13</td>
<td>85535-84-8</td>
<td>Not detected</td>
<td></td>
</tr>
<tr>
<td><strong>Lead (Pb), Total Amount</strong></td>
<td></td>
<td>90 ppm</td>
<td>Metal Products: CPSC-CH-E1001-08.3</td>
</tr>
<tr>
<td>Accessible parts and in Paint and Other Similar Surface Coatings (in products for children up to 12 years old)</td>
<td>7439-92-1</td>
<td>90 ppm</td>
<td>Non-Metal Products: CPSC-CH-E1002-08.3</td>
</tr>
<tr>
<td><strong>Nickel (Ni), Extractable Amount</strong></td>
<td></td>
<td>Maximum release: 0.5 µg/cm²/week</td>
<td>In Paint and Other Similar Surface Coatings: CPSC-CH-E1003-90.1</td>
</tr>
<tr>
<td>In metal products or parts of products in direct and prolonged skin contact</td>
<td>7440-02-0</td>
<td>Maximum release: 0.5 µg/cm²/week</td>
<td></td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td></td>
<td>Grade 2 – not unpleasant</td>
<td>Smell test SNV 195 651</td>
</tr>
<tr>
<td><strong>Polyaromatic hydrocarbons (PAH)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzo[a]anthracene</td>
<td>56-55-3</td>
<td>&lt;1 ppm</td>
<td></td>
</tr>
<tr>
<td>Benzo[a]pyrene</td>
<td>50-32-8</td>
<td>&lt;1 ppm</td>
<td></td>
</tr>
<tr>
<td>Benzo[b]fluoranthene</td>
<td>205-99-2</td>
<td>&lt;1 ppm</td>
<td></td>
</tr>
<tr>
<td>Benzo[e]pyrene</td>
<td>192-97-2</td>
<td>&lt;1 ppm</td>
<td></td>
</tr>
<tr>
<td>Benzo[j]fluoranthene</td>
<td>205-82-3</td>
<td>&lt;1 ppm</td>
<td></td>
</tr>
<tr>
<td>Benzo[k]fluoranthene</td>
<td>207-08-9</td>
<td>&lt;1 ppm</td>
<td></td>
</tr>
<tr>
<td>Chrysene</td>
<td>218-01-9</td>
<td>&lt;1 ppm</td>
<td></td>
</tr>
<tr>
<td>Dibenzo[a,h]anthracene</td>
<td>53-70-3</td>
<td>&lt;1 ppm</td>
<td></td>
</tr>
<tr>
<td><strong>Phthalates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Butyl benzyl phthalate (BBP)</td>
<td>85-68-7</td>
<td>500 ppm</td>
<td>Extraction with THF/CAN and analysis by HPLC-DAD-MS, confirmation test for DBP using GC-MS (reporting limit 50 ppm)</td>
</tr>
<tr>
<td>Dibutyl phthalate (DBP)</td>
<td>84-74-2</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>Diethyl phthalate (DEP)</td>
<td>84-66-2</td>
<td>500 ppm</td>
<td></td>
</tr>
</tbody>
</table>

5 Only for articles with direct as well as prolonged or short-term repetitive contact with the human skin, made of plastic or rubber.
## Restricted substances

<table>
<thead>
<tr>
<th>Restricted substance</th>
<th>CAS no</th>
<th>Concentration Limit/Requirement</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di-(2-ethylhexyl) phthalate (DEHP)</td>
<td>117-81-7</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>Diisobutyl phthalate (DIBP)</td>
<td>84-69-5</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>Diisodecyl phthalate (DIDP)</td>
<td>26761-40-0</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>Diisononyl phthalate (DINP)</td>
<td>28553-12-0</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>Di-n-hexyl phthalate (DnHP)</td>
<td>84-75-3</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>Di-n-octyl phthalate (DnOP)</td>
<td>117-84-0</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>All other phthalates (all other esters of o-phthalic acid)</td>
<td>Various</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>Sum of phthalates</td>
<td></td>
<td>≤ 1000 ppm</td>
<td>Beilstein’s test and infrared spectroscopy (IR) with or without chemical separation</td>
</tr>
<tr>
<td>Polyvinylchloride (PVC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyvinylchloride (PVC)</td>
<td>9002-86-2</td>
<td>Not detected</td>
<td></td>
</tr>
<tr>
<td>Polychloroethylene</td>
<td>9002-85-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polychloroprene</td>
<td>9010-98-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All other chlorinated polymers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bisphenol A in Polycarbonate (PC)</td>
<td>80-05-7</td>
<td>Extractable amount: 3 mg/kg</td>
<td>Extraction: artificial sweat solution ISO 105 E04. Analysis by LC-MS</td>
</tr>
<tr>
<td>SVHC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check ECHA website for the updated list⁶</td>
<td></td>
<td>1000 ppm in each homogenous part of the product, except if lower limit applies as per other parts of this document.</td>
<td>Combine screening using ICP-MS, GC-MS, and LC-TOF.</td>
</tr>
<tr>
<td>Substances defined as hazardous due to intrinsic properties</td>
<td></td>
<td>1000 ppm, except if lower limit applies as per other parts of this document</td>
<td></td>
</tr>
</tbody>
</table>

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Requirements - Batteries

<table>
<thead>
<tr>
<th>Restricted substance</th>
<th>CAS no</th>
<th>Concentration Limit/Requirement</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Batteries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Batteries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium (Cd)</td>
<td>7440-43-9</td>
<td>20 ppm</td>
<td>Digestion with aqua regia and determination by ICP/MS</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>7439-92-1</td>
<td>40 ppm</td>
<td></td>
</tr>
<tr>
<td>Mercury (Hg)</td>
<td>7439-97-6</td>
<td>5 ppm</td>
<td></td>
</tr>
</tbody>
</table>

All Batteries must comply with EU Directive 2006/66/EU\(^8\) and 2013/56/EU\(^9\) including its amendments.
