COCIR
SUSTAINABLE COMPETENCE IN ADVANCING HEALTHCARE
European Coordination Committee of the Radiological, Electromedical and Healthcare IT Industry

sphera

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# BOMcheck list of restricted and declarable substances for supplied articles

COCIR is the European Trade Association representing the medical imaging, radiotherapy, health ICT and electromedical industries. BOMcheck is an industry collaboration sharing one cloud-based platform to manage supply chain compliance with substance regulations around the world. The list is managed by the COCIR EHS Committee and BOMcheck Substance List Working Group and is aligned with the IPC-1752A and IPC-1752B Standard for Materials Declaration Management (http://www.ipc.org/ContentPage.aspx?pageid=Materials-Declaration) and the IEC 62474 screening of REACH Candidate List Substances.

## Primary Declarable Substance Lists (Primary DSLs)

### RoHS Restrictions (Directive 2011/65/EU)

The RoHS substance restrictions apply to every individual homogenous material in the part. BOMcheck is aligned with the IPC 1752A substance category list EUROHS-0508. The BOMcheck Full Materials Declaration tool provides the CAS numbers, common chemical names, synonyms and trade names for the substances which are included in each RoHS substance group.

Appendix A provides the list of substance applications exempt from the RoHS substance restrictions for certain periods, as published in Annex III of the RoHS Directive 2011/65/EU and renewed by the European Commission. Appendix B provides the list of exemptions published in Annex IV of the RoHS Directive 2011/65/EU, which apply specifically to medical devices and monitoring and control instruments. Note that these substance exemptions in the EU RoHS Directive do not provide any exemption from the product labelling requirements in China RoHS – the substances must be listed in the marking table.

| Substance group | Maximum concentration of the substance in any individual homogenous material in the part | Threshold calculation level |
|---|---|---|
| Cadmium/cadmium compounds | 0.01% by weight (100 ppm) of homogeneous materials | Material |
| Hexavalent Chromium compounds | 0.1% by weight (1 000 ppm) of homogeneous materials | Material |
| Lead/lead compounds | 0.1% by weight (1 000 ppm) of homogeneous materials | Material |
| Mercury/mercury compounds | 0.1% by weight (1 000 ppm) of homogeneous materials | Material |
| PBBs | 0.1% by weight (1 000 ppm) of homogeneous materials | Material |
| PBDEs | 0.1% by weight (1 000 ppm) of homogeneous materials | Material |

### RoHS Amendments 1 (Directive 2015/863)

On 4 June 2015 the European Commission published Delegated Directive 2015/863 which officially added four new substances and maximum concentration values in homogenous materials to Annex II of the RoHS Directive. Electrical and electronic equipment must comply with these additional substance restrictions from 22 July 2019, except for Medical Devices (Category 8) and Monitoring and Control Instruments (Category 9) which must comply with these additional substance restrictions from 22 July 2021.

| Substance group | Maximum concentration of the substance in any individual homogenous material in the part | Threshold calculation level |
|---|---|---|
| Bis(2-ethylhexyl) phthalate (DEHP) | 0.1% by weight (1 000 ppm) of homogeneous materials | Material |
| Butyl benzyl phthalate (BBP) | 0.1% by weight (1 000 ppm) of homogeneous materials | Material |
| Dibutyl phthalate (DBP) | 0.1% by weight (1 000 ppm) of homogeneous materials | Material |
| Diisobutyl phthalate (DIBP) | 0.1% by weight (1 000 ppm) of homogeneous materials | Material |

### REACH Candidate List (Article 33)

REACH Candidate List substances found in supplied articles

REACH Article 33 requires all suppliers to inform their customers if the product they supply includes any article that contains any of the substances in the Candidate List in concentrations > 0.1% w/w of the article. An article is any item that has a special shape, surface or design which determines its function to a greater degree than its chemical composition (e.g. a screw, resistor, wire). Please note that this definition of an article may apply to individual components in your product. For further guidance on what is considered an article under the REACH Regulation please refer to the ECHA Guidance published at https://echa.europa.eu/documents/10162/2324906/articles_en.pdf

There are 253 Substances of Very High Concern (SVHCs) on the current REACH Candidate List published 04 February 2026 at https://echa.europa.eu/candidate-list-table. BOMcheck has determined that 125 of these SVHCs are not normally found in concentrations > 0.1% w/w in supplied articles. If parts and materials are manufactured using conventional industry processes, then the supplier can rely on the BOMcheck guidance and screen out these 125 SVHCs (BOMcheck will set the supplier's Regulatory Compliance Declaration to 'compliant' for these SVHCs).

The CAS numbers published by ECHA for the 128 REACH Candidate List substances which can normally be found in supplied articles are included in the table below. Note that ECHA has not published CAS numbers for some REACH Candidate List Substances. BOMcheck is aligned with the IPC 1752A and IPC 1752B substance category list EUREACH-0226.

| REACH Candidate List Substances which can normally be found in supplied articles | CAS number(s) published by ECHA | Threshold |
|---|---|---|
| ***Included in REACH Candidate List on 28 October 2008*** | | |
| Benzyl butyl phthalate (BBP) | 85-68-7 | 0.1% by weight (1 000 ppm) of any article |
| Dibutyl phthalate (DBP) | 84-74-2 | 0.1% by weight (1 000 ppm) of any article |
| Bis (2-ethylhexyl) phthalate (DEHP) | 117-81-7 | 0.1% by weight (1 000 ppm) of any article |
| Hexabromocyclododecane (HBCDD) and all major diastereoisomers | 25637-99-4, 3194-55-6, 134237-50-6, 134237-51-7, 134237-52-8 | 0.1% by weight (1 000 ppm) of any article |
| Shortchain chlorinated paraffins (C10 – C13) | 85535-84-8 | 0.1% by weight (1 000 ppm) of any article |

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|---|---|---|
| Cobalt dichloride (CoCl2) | 7646-79-9 | 0.1% by weight (1 000 ppm) of any article |
| Diarsenic pentoxide | 1303-28-2 | 0.1% by weight (1 000 ppm) of any article |
| Diarsenic trioxide | 1327-53-3 | 0.1% by weight (1 000 ppm) of any article |
| Tributyl tin oxide (TBTO) | 56-35-9 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 13 January 2010*** | | |
| Tris (2-chloroethyl) phosphate (TCEP) | 115-96-8 | 0.1% by weight (1 000 ppm) of any article |
| Lead chromate | 7758-97-6 | 0.1% by weight (1 000 ppm) of any article |
| Lead chromate molybdate sulfate red (C.I. Pigment Red 104) | 12656-85-8 | 0.1% by weight (1 000 ppm) of any article |
| Lead sulfochromate yellow (C.I. Pigment Yellow 34) | 1344-37-2 | 0.1% by weight (1 000 ppm) of any article |
| Diisobutyl phthalate (DIBP) | 84-69-5 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 18 June 2010*** | | |
| Disodium tetraborate, anhydrous | 1303-96-4, 1330-43-4, 12179-04-3 | 0.1% by weight (1 000 ppm) of any article |
| Tetraboron disodium heptaoxide, hydrate | 12267-73-1 | 0.1% by weight (1 000 ppm) of any article |
| Boric acid | 10043-35-3, 11113-50-1 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 20 June 2011*** | | |
| 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP) | 68515-42-4 | 0.1% by weight (1 000 ppm) of any article |
| 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP) | 71888-89-6 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 19 December 2011*** | | |
| 2,2'-dichloro-4,4'-methylenedianiline | 101-14-4 | 0.1% by weight (1 000 ppm) of any article |
| N,N-dimethylacetamide | 127-19-5 | 0.1% by weight (1 000 ppm) of any article |
| Bis(2-methoxyethyl) phthalate | 117-82-8 | 0.1% by weight (1 000 ppm) of any article |
| Bis(2-methoxyethyl) ether | 111-96-6 | 0.1% by weight (1 000 ppm) of any article |
| Aluminosilicate Refractory Ceramic Fibres | No CAS number(s) provided | 0.1% by weight (1 000 ppm) of any article |
| Zirconia Aluminosilicate Refractory Ceramic Fibres | No CAS number(s) provided | 0.1% by weight (1 000 ppm) of any article |

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|---|---|---|
| ***Included in REACH Candidate List on 18 June 2012*** | | |
| Diboron trioxide | 1303-86-2 | 0.1% by weight (1 000 ppm) of any article |
| 1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme) | 112-49-2 | 0.1% by weight (1 000 ppm) of any article |
| 1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME) | 110-71-4 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 19 December 2012*** | | |
| Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE) | 1163-19-5 | 0.1% by weight (1 000 ppm) of any article |
| 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear | 84777-06-0 | 0.1% by weight (1 000 ppm) of any article |
| Diisopentylphthalate | 605-50-5 | 0.1% by weight (1 000 ppm) of any article |
| N-pentyl-isopentylphthalate | 776297-69-9 | 0.1% by weight (1 000 ppm) of any article |
| Dibutyltin dichloride (DBTC) | 683-18-1 | 0.1% by weight (1 000 ppm) of any article |
| Lead oxide sulfate | 12036-76-9 | 0.1% by weight (1 000 ppm) of any article |
| [Phthalato(2-)]dioxotrilead | 69011-06-9 | 0.1% by weight (1 000 ppm) of any article |
| Dioxobis(stearato)trilead | 12578-12-0 | 0.1% by weight (1 000 ppm) of any article |
| Fatty acids, C16-18, lead salts | 91031-62-8 | 0.1% by weight (1 000 ppm) of any article |
| Lead dinitrate | 10099-74-8 | 0.1% by weight (1 000 ppm) of any article |
| Pentalead tetraoxide sulphate | 12065-90-6 | 0.1% by weight (1 000 ppm) of any article |
| Sulfurous acid, lead salt, dibasic | 62229-08-7 | 0.1% by weight (1 000 ppm) of any article |
| Tetralead trioxide sulphate | 12202-17-4 | 0.1% by weight (1 000 ppm) of any article |
| Trilead dioxide phosphonate | 12141-20-7 | 0.1% by weight (1 000 ppm) of any article |
| Orange lead (lead tetroxide) | 1314-41-6 | 0.1% by weight (1 000 ppm) of any article |
| Lead cyanamidate | 20837-86-9 | 0.1% by weight (1 000 ppm) of any article |
| Pyrochlore, antimony lead yellow | 8012-00-8 | 0.1% by weight (1 000 ppm) of any article |

| | | |
|---|---|---|
| 4-Aminoazobenzene | 60-09-3 | 0.1% by weight (1 000 ppm) of any article |
| 1,2-Diethoxyethane | 629-14-1 | 0.1% by weight (1 000 ppm) of any article |
| Silicic acid (H2Si2O5), barium salt (1:1), lead-doped | 68784-75-8 | 0.1% by weight (1 000 ppm) of any article |
| N,N-dimethylformamide; dimethyl formamide | 68-12-2 | 0.1% by weight (1 000 ppm) of any article |
| Lead titanium trioxide | 12060-00-3 | 0.1% by weight (1 000 ppm) of any article |
| Lead titanium zirconium oxide | 12626-81-2 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 20 June 2013*** | | |
| 4-Nonylphenol, branched and linear, ethoxylated *[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]* | No CAS number(s) provided | 0.1% by weight (1 000 ppm) of any article |
| Ammonium pentadecafluorooctanoate (APFO) | 3825-26-1 | 0.1% by weight (1 000 ppm) of any article |
| Pentadecafluorooctanoic acid (PFOA) | 335-67-1 | 0.1% by weight (1 000 ppm) of any article |
| Cadmium | 7440-43-9 | 0.1% by weight (1 000 ppm) of any article |
| Cadmium oxide | 1306-19-0 | 0.1% by weight (1 000 ppm) of any article |
| Dipentyl phthalate (DPP) | 131-18-0 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 16 December 2013*** | | |
| 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. Direct Black 38) | 1937-37-7 | 0.1% by weight (1 000 ppm) of any article |
| Trixylyl phosphate | 25155-23-1 | 0.1% by weight (1 000 ppm) of any article |
| Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28) | 573-58-0 | 0.1% by weight (1 000 ppm) of any article |
| Dihexyl phthalate | 84-75-3 | 0.1% by weight (1 000 ppm) of any article |
| Imidazolidine-2-thione; (2-imidazoline-2-thiol) | 96-45-7 | 0.1% by weight (1 000 ppm) of any article |
| Cadmium sulphide | 1306-23-6 | 0.1% by weight (1 000 ppm) of any article |

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|---|---|---|
| ***Included in REACH Candidate List on 16 June 2014*** | | |
| 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear | 68515-50-4 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 17 December 2014*** | | |
| 2-Benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320) | 3846-71-7 | 0.1% by weight (1 000 ppm) of any article |
| 2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) | 25973-55-1 | 0.1% by weight (1 000 ppm) of any article |
| 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE) | 15571-58-1 | 0.1% by weight (1 000 ppm) of any article |
| 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) | No CAS number(s) provided | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 15 June 2015*** | | |
| 1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with greater than or equal to 0.3% of dihexyl phthalate (EC No. 201-559-5) | 68515-51-5, 68648-93-1 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 17 December 2015*** | | |
| Perfluorononan-1-oic-acid and its sodium and ammonium salts | 375-95-1, 21049-39-8, 4149-60-4 | 0.1% by weight (1 000 ppm) of any article |
| 1,3-propanesultone | 1120-71-4 | 0.1% by weight (1 000 ppm) of any article |
| 2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327) | 3864-99-1 | 0.1% by weight (1 000 ppm) of any article |
| 2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350) | 36437-37-3 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 20 June 2016*** | | |
| Benzo[def]chrysene | 50-32-8 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 12 January 2017*** | | |
| 4,4'-isopropylidenediphenol (bisphenol A) | 80-05-7 | 0.1% by weight (1 000 ppm) of any article |
| Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts | 3108-42-7, 335-76-2, 3830-45-3 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 7 July 2017*** | | |

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|---|---|---|
| Perfluorohexane-1-sulphonic acid and its salts (PFHxS) | No CAS number(s) provided | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 15 January 2018*** | | |
| Benz[a]anthracene | 56-55-3, 1718-53-2 | 0.1% by weight (1 000 ppm) of any article |
| Cadmium hydroxide | 21041-95-2 | 0.1% by weight (1 000 ppm) of any article |
| Chrysene | 218-01-9, 1719-03-5 | 0.1% by weight (1 000 ppm) of any article |
| 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 Plus"TM) [covering any of its individual anti- and syn-isomers or any combination thereof] | No CAS number(s) provided | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 27 June 2018*** | | |
| Benzo[ghi]perylene | 191-24-2 | 0.1% by weight (1 000 ppm) of any article |
| Octamethylcyclotetrasiloxane (D4) | 556-67-2 | 0.1% by weight (1 000 ppm) of any article |
| Decamethylcyclopentasiloxane (D5) | 541-02-6 | 0.1% by weight (1 000 ppm) of any article |
| Dodecamethylcyclohexasiloxane (D6) | 540-97-6 | 0.1% by weight (1 000 ppm) of any article |
| Terphenyl, hydrogenated | 61788-32-7 | 0.1% by weight (1 000 ppm) of any article |
| Disodium octaborate | 12008-41-2 | 0.1% by weight (1 000 ppm) of any article |
| Lead | 7439-92-1 | 0.1% by weight (1 000 ppm) of any article |
| Dicyclohexyl phthalate (DCHP) | 84-61-7 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 15 January 2019*** | | |
| Benzo[k]fluoranthene | 207-08-9 | 0.1% by weight (1 000 ppm) of any article |
| Fluoranthene | 206-44-0, 93951-69-0 | 0.1% by weight (1 000 ppm) of any article |
| Phenanthrene | 85-01-8 | 0.1% by weight (1 000 ppm) of any article |
| Pyrene | 129-00-0, 1718-52-1 | 0.1% by weight (1 000 ppm) of any article |
| 2,2-bis(4'-hydroxyphenyl)-4-methylpentane | 6807-17-6 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 16 July 2019*** | | |

| | | |
|---|---|---|
| Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) | 106599-06-8, 3050-88-2, 26523-78-4, 31631-13-7 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 16 January 2020*** | | |
| Diisohexyl phthalate | 71850-09-4 | 0.1% by weight (1 000 ppm) of any article |
| Perfluorobutane sulfonic acid (PFBS) and its salts | No CAS number(s) provided | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 25 June 2020*** | | |
| Dibutylbis(pentane-2,4-dionato-O,O')tin | 22673-19-4 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 19 January 2021*** | | |
| Bis(2-(2-methoxyethoxy)ethyl)ether | 143-24-8 | 0.1% by weight (1 000 ppm) of any article |
| Dioctyltin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety | No CAS number(s) provided | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 8 July 2021*** | | |
| Medium-chain chlorinated paraffins (MCCP) [UVCB substances consisting of more than or equal to 80% linear chloroalkanes with carbon chain lengths within the range from C14 to C17] | No CAS number(s) provided | 0.1% by weight (1 000 ppm) of any article |
| 4,4'-(1-methylpropylidene)bisphenol | 77-40-7 | 0.1% by weight (1 000 ppm) of any article |
| Orthoboric acid, sodium salt | No CAS number(s) provided | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 17 January 2022*** | | |
| 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol | 119-47-1 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 17 January 2023*** | | |
| 1,1'-[ethane-1,2-diylbisoxy]bis[2,4,6-tribromobenzene] | 37853-59-1 | 0.1% by weight (1 000 ppm) of any article |
| 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol | 79-94-7 | 0.1% by weight (1 000 ppm) of any article |
| 4,4'-sulphonyldiphenol | 80-09-1 | 0.1% by weight (1 000 ppm) of any article |
| Barium diboron tetraoxide | 13701-59-2 | 0.1% by weight (1 000 ppm) of any article |
| Bis(2-ethylhexyl) tetrabromophthalate covering any of the individual isomers and/or combinations thereof | 26040-51-7 | 0.1% by weight (1 000 ppm) of any article |
| Isobutyl 4-hydroxybenzoate | 4247-02-3 | 0.1% by weight (1 000 ppm) of any article |

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|---|---|---|
| Melamine | 108-78-1 | 0.1% by weight (1 000 ppm) of any article |
| Perfluoroheptanoic acid and its salts | 375-85-9<br>6130-43-4<br>21049-36-5<br>20109-59-5 | 0.1% by weight (1 000 ppm) of any article |
| reaction mass of 2,2,3,3,5,5,6,6-octafluoro-4-(1,1,1,2,3,3,3-heptafluoropropan-2-yl)morpholine and 2,2,3,3,5,5,6,6-octafluoro-4-(heptafluoropropyl)morpholine | No CAS number(s) provided | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 14 June 2023*** | | |
| bis(4-chlorophenyl) sulphone | 80-07-9 | 0.1% by weight (1 000 ppm) of any article |
| diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide | 75980-60-8 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 23 January 2024*** | | |
| 2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol (UV-329) | 3147-75-9 | 0.1% by weight (1 000 ppm) of any article |
| Bumetrizole (UV-326) | 3896-11-5 | 0.1% by weight (1 000 ppm) of any article |
| Oligomerisation and alkylation reaction products of 2-phenylpropene and phenol | No CAS number(s) provided | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 27 June 2024*** | | |
| Bis(α,α-dimethylbenzyl) peroxide | 80-43-3 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 07 November 2024*** | | |
| Triphenyl phosphate | 115-86-6 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 21 January 2025*** | | |
| 6-[(C10-C13)-alkyl-(branched, unsaturated)-2,5-dioxopyrrolidin-1-yl]hexanoic acid | 2156592-54-8 | 0.1% by weight (1 000 ppm) of any article |
| O,O,O-triphenyl phosphorothioate | 597-82-0 | 0.1% by weight (1 000 ppm) of any article |
| Octamethyltrisiloxane | 107-51-7 | 0.1% by weight (1 000 ppm) of any article |
| Perfluamine | 338-83-0 | 0.1% by weight (1 000 ppm) of any article |
| reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives | 192268-65-8 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 25 June 2025*** | | |
| 1,1,1,3,5,5,5-heptamethyl-3-[(trimethylsilyl)oxy]trisiloxane | 17928-28-8 | 0.1% by weight (1 000 ppm) of any article |

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|---|---|---|
| decamethyltetrasiloxane | 141-62-8 | 0.1% by weight (1 000 ppm) of any article |
| ***Included in REACH Candidate List on 05 November 2025*** | | |
| 1,1'-(ethane-1,2-diyl)bis[pentabromobenzene] (DBDPE) | 84852-53-9 | 0.1% by weight (1 000 ppm) of any article |

## REACH Restrictions (Article 67)

REACH substance restrictions (Annex XVII) applicable to supplied articles

BOMcheck enables suppliers to declare against the following restricted substances that can be present above the threshold levels in parts and materials normally found in supplied articles. Note that "No content permitted" means "The chemical substance is not allowed to be present in the material at any concentration level."

The BOMcheck Regulatory Compliance Declaration tool provides information sheets for each individual substance restrictions. The BOMcheck Full Materials Declaration tool provides the CAS numbers, common chemical names, synonyms and trade names for these restricted substances. BOMcheck is aligned with the IPC 1752A and IPC 1752B substance category list EUREACH-ARTICLE67-2021/1297.

| **REACH restricted substances which can normally be found in supplied articles** | **Threshold** | **Threshold calculation level** |
|---|---|---|
| Formaldehyde and formaldehyde releasers | The concentration of formaldehyde released must not exceed 0.080 mg/m3 | Part (article) |
| Lead and its compounds in PVC | 0.1% by weight of the PVC material | Material |
| Sum of perfluorocarboxylic acids containing 9 to 14 carbon atoms | 0.0000025% by weight (25ppb) of any article | Part (article) |
| Bisphenol A in thermal paper | 0.02% by weight (200 ppm) in thermal paper | Part (article) |
| Sum of Selected Phthalates Group 1 (DIBP, BBP, DBP, DEHP) | 0.1% w/w of plasticised material | Material |
| Asbestos fibres | No intentionally added content | Part (article) |
| Dibutyltin (DBT) compounds | 0.1% by weight of tin in a material | Material |
| Monomethyl dibromodiphenyl methane | No intentionally added content | Part (article) |
| Monomethyl dichlorodiphenyl methane | No intentionally added content | Part (article) |
| Monomethyl tetrachlorodiphenyl methane | No intentionally added content | Part (article) |
| Polychlorinated terphenyls (PCTs) | No intentionally added content | Part (article) |
| 1,2,4 Trichlorobenzene | Concentration must be < 0.1% w/w | Part (article) |
| Dimethyl Fumarate | 0.00001% by weight (0.1 ppm) in the article or part thereof | Part (article) |
| Tri-substituted organostannic compounds | 0.1% by weight (1 000 ppm) of tin in the article or part thereof | Part (article) |

| | | |
|---|---|---|
| Tar oils and creosotes | No content permitted in wood | Part (article) |
| **Restrictions which apply to parts used in childcare products and toys** | | |
| Benzene | Concentration must be < 0.0005% w/w in toys | Part (article) |
| Dioctyltin (DOT) compounds | 0.1% by weight of tin in a material | Material |
| Selected Phthalates Group 2 (DIDP, DINP, DNOP) | 0.1% w/w of plasticised material when used in toys and childcare articles which can be placed in the mouth | Material |
| Any individual PAH compound – toys and childcare articles | 0.00005% by weight (0.5 ppm) in plastic or rubber material in toys and childcare articles that come into direct, prolonged or repetitive skin or oral cavity contact | Part (article) |
| **Restrictions which apply to parts containing leather or textiles** | | |
| Sum of undecafluorohexanoic acid (PFHxA) and its salts | 0.0000025% by weight (25ppb) of any material used in restricted applications | Material |
| Sum of PFHxA-related substances | 0.0001% (1000 ppb) of any material used in restricted applications | Material |
| Dioctyltin (DOT) compounds | 0.1% by weight of tin in a material | Material |
| Azo colourants containing certain amines | Not permitted in textile and leather articles which may come into direct and prolonged contact with skin | Part (article) |
| Tri (2,3-dibromo-propyl) phosphate | Not permitted in textile articles which may come into contact with skin | Part (article) |
| Tris (aziridinyl) phosphinoxide | Not permitted in textile articles which may come into contact with skin | Part (article) |
| **Restrictions which apply to parts which come into contact with skin** | | |
| Any individual PAH compound | 0.0001% by weight (1 ppm) in plastic or rubber material that come into direct, prolonged or repetitive skin or oral cavity contact | Part (article) |
| Nickel and nickel alloys | Must not be used in applications with direct and prolonged skin contact and where the rate of nickel release is > 0.5 micro gms per $cm^2$ per week | Part (article) |
| **Restrictions which apply to parts which contain chemical products (liquids, gases, powders)** | | |
| Benzene | < 0.1% w/w in any substance or preparation | Part (article) |
| Nonylphenol and nonylphenol ethoxylates | Concentration must be < 0.1% w/w | Part (article) |

### Battery Restrictions

Regulations on battery restrictions, such as the EU Battery Regulation (EU) 2023/1542, aim to limit the use of hazardous substances in batteries and accumulators to reduce environmental impact and promote recycling.

BOMcheck aligns with the IEC 62474 database of restricted and declarable substances which is published at http://std.iec.ch/iec62474.

The battery reporting threshold level is based on the strictest known legal requirement. However, for simplification, the same reporting threshold level is set for all kinds of batteries, even if the underlying legal requirement is only applicable for only one specific battery type.

| Substances | Maximum concentration in the battery | Threshold calculation level |
|---|---|---|
| Cadmium/cadmium compounds | 0.001 % by weight (10 ppm) of battery | Part (article) |
| Mercury/mercury compounds | 0.0001% by weight (1 ppm) of battery | Part (article) |
| Lead/lead compounds | 0.004% by weight (40 ppm) of battery | Part (article) |
| Perchlorates | 0.0000006% by weight (6 ppb) of battery | Part (article) |

### California Proposition 65

Screening of the 900 plus substances on the Proposition 65 list has shown that a small subset of substances may be found in components of manufactured products (not defined as a substance or preparation (mixture) under the REACH regulation). Many of these substances are not present in supplied articles and so do not require “safe harbour” warnings and many substances are already regulated under RoHS, REACH, POPs and other regulations in BOMcheck. The remaining Proposition 65 substances which require additional compliance declarations can be found with detailed chemical guidance to help you assess if they may be found in your parts.

If the finished product includes a supplier part that contains Proposition 65 substance(s) then you need to assess whether the user could be exposed to the part during normal use of the product. If yes, then you should provide an appropriate “safe harbour” warning and communicate the name of one Proposition 65 substance for each endpoint (for example, one carcinogen of the Proposition 65 substance(s) is listed for cancer).

| Proposition 65 substances which can normally be found in supplied articles | Threshold | Threshold calculation level |
|---|---|---|
| Silicon carbide whiskers | 0.1% by weight (1 000 ppm) of any material | Material |
| Tetrahydrofuran | 0.1% by weight (1 000 ppm) of any material | Material |
| Methyl acrylate | 0.1% by weight (1 000 ppm) of any material | Material |
| Indium tin oxide | 0.1% by weight (1 000 ppm) of any material | Material |
| Lead and Lead Compounds | 0.009% (90 ppm) of any material | Material |
| Bisphenol A (BPA) | 0.0003% (3 ppm) of any material | Material |

| | | |
|---|---|---|
| Ethylene Oxide | No intentionally added content | Part (article) |
| **Phthalate plasticisers** | | |
| Diisononyl phthalate (DiNP) | No intentionally added content | Part (article) |
| Di-isodecyl phthalate (DIDP) | No intentionally added content | Part (article) |
| Di-n-hexyl phthalate (DnHP) | No intentionally added content | Part (article) |
| **Flame retardants and plasticisers** | | |
| Tris(1,3-dichloro-2-propyl) Phosphate (TDCPP) | 0.0025% by weight (25 ppm) of any material | Material |
| Tris(2-chloroethyl) Phosphate | 0.0025% by weight (25 ppm) of any material | Material |
| Tris(2,3-dibromopropyl)phosphate | 0.0025% by weight (25 ppm) of any material | Material |
| **Flame retardants** | | |
| Dimethyl hydrogen phosphite | 0.1% by weight (1 000 ppm) of any material | Material |
| Molybdenum Trioxide | 0.1% by weight (1 000 ppm) of any material | Material |
| Antimony Oxide (Antimony trioxide) | 0.1% by weight (1 000 ppm) of any material | Material |
| Tetrabromobisphenol A | 0.1% by weight (1 000 ppm) of any material | Material |
| 2,2-Bis(bromomethyl)-1,3-propanediol | 0.1% by weight (1 000 ppm) of any material | Material |
| Mirex | 0.1% by weight (1 000 ppm) of any material | Material |
| **UV protection agents** | | |
| Benzophenone | 0.1% by weight (1 000 ppm) of any material | Material |
| **Colourants** | | |
| Benzidine-based Dyes | 0.1% by weight (1 000 ppm) of any material | Material |
| 3,3'-Dimethoxybenzidine-based dyes metabolized to 3,3'-dimethoxybenzidine | 0.1% by weight (1 000 ppm) of any material | Material |
| 3,3'-Dimethylbenzidine-based dyes metabolized to 3,3'-dimethylbenzidine | 0.1% by weight (1 000 ppm) of any material | Material |
| D&C Orange No. 17 | 0.1% by weight (1 000 ppm) of any material | Material |

| | | |
|---|---|---|
| 1-Amino-2,4-dibromoanthraquinone | 0.1% by weight (1 000 ppm) of any material | Material |
| 1-Amino-2-methylanthraquinone | 0.1% by weight (1 000 ppm) of any material | Material |
| Direct Blue 6 (Technical Grade) | 0.1% by weight (1 000 ppm) of any material | Material |
| Direct Brown 95 (Technical Grade) | 0.1% by weight (1 000 ppm) of any material | Material |
| Disperse Blue 1 | 0.1% by weight (1 000 ppm) of any material | Material |
| **Impurities in extender oils and black colourants** | | |
| Naphthalene | 0.0001% by weight (1 ppm) of any material | Material |
| **REACH Article 67 substance restrictions which may be found in hardware and electrical and electronic equipment (Regulation 1907/2006)** | | |
| Any individual PAH compound | 0.0001% by weight (1 ppm) in plastic or rubber material that come into direct, prolonged or repetitive skin or oral cavity contact | Part (article) |
| Asbestos | No intentionally added content | Part (article) |
| Azocolourants and azodyes which form certain aromatic amines | Not permitted in textile and leather articles which may come into direct and prolonged contact with skin | Part (article) |
| Nickel and nickel alloys | Must not be used in applications with direct and prolonged skin contact and where the rate of nickel release is > 0.5 micro gms per cmÂ² per week | Part (article) |
| Tar oils and creosotes | No content permitted in wood and wooden materials | Part (article) |
| **RoHS substance restrictions (Directive 2011/65/EU)** | | |
| Cadmium/cadmium compounds | 0.01% by weight (100 ppm) of homogeneous materials | Material |
| Hexavalent Chromium | 0.1% by weight (1 000 ppm) of homogenous materials | Material |
| Mercury/Mercury compounds | 0.1% by weight (1 000 ppm) of homogenous materials | Material |
| PBBs | 0.1% by weight (1 000 ppm) of homogenous materials | Material |
| PBDEs | 0.1% by weight (1 000 ppm) of homogenous materials | Material |
| **REACH candidate list substances (Regulation 1907/2006)** | | |
| Bisphenol S (BPS) | 0.1% by weight (1 000 ppm) of any material | Material |

| | | |
|---|---|---|
| Perfluorononanoic acid (PFNA) and its salts | 0.1% by weight (1 000 ppm) of any article | Part (article) |
| DEHP (Di(2-ethylhexyl) phthalate) | 0.1% by weight (1 000 ppm) of any article | Part (article) |
| DBP (Dibutyl phthalate) | 0.1% by weight (1 000 ppm) of any article | Part (article) |
| BBP (Benzylbutyl phthalate) | 0.1% by weight (1 000 ppm) of any article | Part (article) |
| SCCP (Short-chained chlorinated paraffins) | 0.1% by weight (1 000 ppm) of any article | Part (article) |
| Direct Black 38 (Technical Grade) | 0.1% by weight (1 000 ppm) of any article | Part (article) |
| 4-Aminoazobenzene | 0.1% by weight (1 000 ppm) of any article | Part (article) |
| **Persistent Organic Pollutants Regulation (EU) 2019/1021** | | |
| Perfluorooctane sulfonic acid (PFOS) and its salts and transformation and degradation precursors | 0.1% by weight (1 000 ppm) of any article | Part (article) |
| Polychlorinated biphenyls (PCBs) | 0.00002% by weight (0.2 ppm) of any article | Part (article) |
| Perfluorooctanoic acid and its salts | 0.0000025% by weight (25ppb) of any article | Part (article) |

### Packaging Restricted or Declarable Substances

Certain substances are specifically restricted or declarable in packaging materials. Since packaging is classified as an article, it must also be assessed against the other declarable substance lists in BOMcheck. However, the substances listed below apply exclusively to packaging and should be reviewed separately.

| Substances | Regulation | Threshold | Threshold calculation level |
|---|---|---|---|
| Sum of Heavy metals (Cd, Hg, Cr(VI) and Pb) | EU Packaging and Packaging Waste Regulation (PPWR) | 0.01% w/w | Part (article) |
| Expanded polystyrene (EPS) and other polymeric foam materials (e.g, EPP, EPE, EVA) | Western Australia's Plan for Plastics | No content permitted | Part (article) |
| Non-recyclable styrenic polymers or copolymers | Anti-Waste for a Circular Economy (AGEC) law - France | No content permitted | Part (article) |
| Arsenic/arsenic compounds | REACH Restrictions (Annex XVII) | No intentionally added content in treated wood | Material |
| Formaldehyde | REACH Restrictions (Annex XVII) | The concentration of formaldehyde released must not exceed 0.062 mg/m3 | Part (article) |
| Degradable plastic | Single Use Plastics Directive (EU 2019/904); Western Australia's Plan for Plastics | No content permitted | Part (article) |

# Additional Declarable Substance Lists (Additional DSLs)

BOMcheck includes substances which are restricted or declarable in legislation in all parts of the world, including North America, Asia Pacific and Europe. The BOMcheck Steering Group has screened-out substance restrictions or declaration requirements which are not relevant to parts and materials normally found in supplied articles. BOMcheck enables suppliers to declare against the following substances which can be present above the threshold levels in parts and materials normally found in supplied articles. Note that “No content permitted” means “The chemical substance is not allowed to be present in the material at any concentration level”.

The BOMcheck Regulatory Compliance Declaration tool provides information sheets for each individual substance restriction or declaration requirement, including the applicable legislation and information on alternative substances. The BOMcheck Full Materials Declaration tool provides the CAS numbers, common chemical names, synonyms and trade names for these regulated substances.

## Per- and poly fluoroalkyl Substances (PFAS)

Regulations on PFAS, often referred to as "forever chemicals" due to their persistence in the environment and human body, aim to limit and control the use of these substances due to their potential adverse health effects. Various regulatory bodies, such as the European Chemicals Agency (ECHA) and the U.S. Environmental Protection Agency (EPA), have set guidelines and restrictions.

The BOMcheck PFAS list is designed to provide wide-scope regulatory coverage against multiple different PFAS restrictions and reporting requirements.

Some well-known individual PFAS are already covered by other regulations in BOMcheck. For example, PFOA, PFCAs and PFHxS can be found under the "Other Restricted or Declarable Substances" section in BOMcheck.

| Substances | Information | Threshold | Threshold calculation level |
|---|---|---|---|
| BOMcheck PFAS list | Contains 11,094 reference substances with CAS numbers | No intentionally added content | Material |

## Persistent Organic Pollutants (POPs) Stockholm Convention

The Stockholm Convention on Persistent Organic Pollutants (POPs) is a global treaty aimed at eliminating or restricting the production and use of hazardous chemicals known as POPs. These substances are highly toxic, persist in the environment, bioaccumulate in living organisms, and pose significant risks to human health and ecosystems. Each country or region enforces the Convention through its own legal framework.

Only POPs substances relevant to supplied articles, such as certain industrial chemicals, are included in BOMcheck. POPs identified as pesticides are not included.

Note that if a threshold higher than “no intentionally added content” is listed for a substance on the Persistent Organic Pollutants (POPs) Stockholm Convention DSL, it refers to the Unintentional Trace Contaminant (UTC) limit. For example, a threshold of 0.0001% (1 ppm) means the substance is not intentionally added, but up to 1 ppm is allowed as an unintentional trace.

| Substances | Threshold | Threshold calculation level |
|---|---|---|
| Chlorinated Paraffins with carbon chain lengths in the range of C14-17 and Chlorination Levels ≥ 45% Chlorine by Weight | No intentionally added content | Part (article) |
| Long-chain Perfluorocarboxylic Acids (LC-PFCAs), their salts, and related compounds | No intentionally added content | Part (article) |

| | | |
|---|---|---|
| Pentachlorophenol (PCP) its salts and esters | 0.0005% (5 ppm) of any article | Part (article) |
| Polychlorinated and polybrominated dioxins and furans | No intentionally added content | Part (article) |
| Perfluorooctane sulfonate (PFOS) and its salts | 0.0000025% by weight (25 ppb) of any article | Part (article) |
| PFOS-related compounds | 0.0001% (1 ppm) by weight of any article | Part (article) |
| HBCDD (Hexabromocyclododecane) | 0.0075% (75 ppm) by weight in a material | Material |
| Shortchain chlorinated paraffins (C10 – C13) | 0.15% (1 500 ppm) by weight of any article | Part (article) |
| Polychlorinated biphenyls (PCBs) | 0.00002% (0.2 ppm) by weight of any article | Part (article) |
| Polychloronated naphthalenes (PCNs) | No intentionally added content | Part (article) |
| Polybrominated diphenyl ethers (PBDEs) | 0.001% (10 ppm) by weight of any article | Part (article) |
| Perfluorooctanoic acid and its salts | 0.0000025% by weight (25 ppb) of any article | Part (article) |
| PFOA-related substances | 0.0001% (1 ppm) of any article | Part (article) |
| Perfluorohexane-1-sulphonic acid, its salts and related substances | 0.0000025% by weight (25 ppb) of any article | Part (article) |
| Hexachlorobenzene | 0.001% (10 ppm) by weight of any article | Part (article) |
| Dechlorane Plus | 0.1% (1,000 ppm) by weight of any article | Part (article) |
| UV-328 | 0.0001% (1 ppm) by weight of any article | Part (article) |

### Persistent, Bioaccumulative, and Toxic (PBT) Chemicals under TSCA Section 6(h)

The Toxic Substances Control Act (TSCA), under Section 6(h), requires the U.S. Environmental Protection Agency (EPA) to take expedited action on certain chemicals identified as Persistent, Bioaccumulative, and Toxic (PBT). In January 2021, the EPA issued final rules to reduce exposures to five PBT chemicals. The BOMcheck screening has resulted in only 2 of these 5 substances requiring a declaration by suppliers.

| Substances | Threshold | Threshold calculation level |
|---|---|---|
| Phenol, Isopropylated Phosphate (3:1) (PIP 3:1) | No intentionally added content | Part (article) |
| Decabromdiphenylether (DecaBDE) | No intentionally added content | Material |

### Critical raw materials

Critical Raw Materials (CRMs) are substances essential for the EU economy that face a high risk of supply disruption. These materials, including various metals, minerals, and elements, are identified under the EU Critical Raw Materials Act to support resilience, sustainability, and secure sourcing across key industries.

They are included within BOMcheck via individual substance categories with the same declaration threshold for each entry:

| Threshold | Threshold calculation level |
|---|---|
| No intentionally added content | Material |

Substances covered (including related compounds):

Antimony, Arsenic, Baryte (Barium), Bauxite (Aluminium), Beryllium, Bismuth, Boron, Cobalt, Coking coal, Copper, Feldspar, Fluorspar, Gallium, Germanium, Hafnium, Helium, Lithium, Magnesium, Manganese, Natural graphite, Nickel, Niobium, PGMs, Scandium, Silicon, Strontium, Tantalum, Titanium, Tungsten, Vanadium, LREEs, HREEs, Phosphate rock, Phosphorus.

### Other restricted or declarable substances

BOMcheck includes substances which are restricted or declarable in legislation in all parts of the world, including North America, Asia Pacific and Europe. The BOMcheck Steering Group has screened-out substance restrictions or declaration requirements which are not relevant to parts and materials normally found in supplied articles. BOMcheck enables suppliers to declare against the following substances which can be present above the threshold levels in parts and materials normally found in supplied articles. Note that “No content permitted” means “The chemical substance is not allowed to be present in the material at any concentration level”.

The BOMcheck Regulatory Compliance Declaration tool provides information sheets for each individual substance restriction or declaration requirement, including the applicable legislation and information on alternative substances. The BOMcheck Full Materials Declaration tool provides the CAS numbers, common chemical names, synonyms and trade names for these regulated substances.

For a list of legislation covered by this section see https://docs.bomcheck.com/en/resources/substances.html.

| Substances which can normally be found in supplied articles | Threshold | Threshold calculation level |
|---|---|---|
| Cholecalciferol | 0.1% by weight (1 000 ppm) of any article | Part (article) |
| Diisooctyl phthalate (DIOP) | 0.1% by weight (1 000 ppm) of any article | Part (article) |
| Sum of perfluorocarboxylic acids containing 9 to 14 carbon atoms | 0.0000025% by weight (25 ppb) of any article | Part (article) |
| Bisphenol S in thermal paper | 0.02% by weight (200 ppm) in thermal paper | Part (article) |
| Formaldehyde | No intentionally added content in composite wood products or components (plywood, particle board and MDF) and textiles | Part (article) |
| Radioactive substances | No intentionally added content | Part (article) |
| Biocides | No intentionally added biocides | Part (article) |
| **Restrictions which apply to parts used in childcare products and toys** | | |
| Flame retardant chemicals | 0.1% by weight (1 000 ppm) in a material in toys and childcare products | Material |
| Di-n-pentyl phthalate (DPENP) | 0.1% by weight (1 000 ppm) in a material in toys and childcare products | Material |
| Di-n-hexyl phthalate (DHEXP) | 0.1% by weight (1 000 ppm) in a material in toys and childcare products | Material |
| Dicyclohexyl phthalate (DCHP) | 0.1% by weight (1 000 ppm) in a material in toys and childcare products | Material |
| Diisononyl phthalate (DINP) | 0.1% by weight (1 000 ppm) in a material in toys and childcare products | Material |
| Tris (2-chloroethyl) phosphate (TCEP) | No content permitted in toys and childcare products | Part (article) |
| Tris(2-chloro-1-methylethyl) phosphate (TCPP) | No content permitted in toys and childcare products | Part (article) |
| Tris (1,3-dichloro-2-propyl) phosphate (TDCPP) | No content permitted in toys and childcare products | Part (article) |
| Lead/lead compounds | 0.01% w/w in consumer products designed or intended primarily for children 12 years of age or younger | Part (article) |

| | | |
|---|---|---|
| Lead/lead compounds | 0.009% w/w in paint and similar surface coatings of toys and other articles intended to be used by children | Part (article) |
| Mercury | 0.001% w/w in paint and similar surface coatings of toys and other articles intended for use by children | Part (article) |
| **Restrictions which apply to parts used in medical devices** | | |
| Bisphenol A | Declare if manufactured from raw materials using BPA or derived from BPA, and if used in medical devices and part comes into contact with patient or patient fluids | Part (article) |
| Latex | No intentionally added content in medical devices | Part (article) |
| CMR 1A and 1B substances and endocrine disrupting substances | 0.1% by weight (1 000ppm) in any material which has invasive contact with the patient, or any material which transports or stores fluids or gases which contact the patient | Material |
| **Restrictions which apply to parts which come into contact with food** | | |
| Bisphenol A (BPA) and hazardous bisphenols or hazardous bisphenol derivatives | No content permitted in products which contact with food | Part (article) |
| **Restrictions which apply to parts which contain chemical products (liquids, gases, powders)** | | |
| Ozone depleting substances | No intentionally added content | Part (article) |
| Fluorinated Greenhouse Gases (PFC, SF6, HFC) | No content permitted | Material |
| **Restrictions which apply to parts which contain textiles** | | |
| Flame retardant chemicals | 0.1% by weight (1 000 ppm) in a material in textiles | Material |
| **Restrictions which apply to parts which contain printing ink** | | |
| Mineral oil aromatic hydrocarbons (MOAH) consisting of 1-7 aromatic cycles | 0.1% by weight (1 000 ppm) in the ink | Part (article) |
| Mineral oil saturated hydrocarbons (MOSH) consisting of 16-35 carbon atoms | 0.1% by weight (1 000 ppm) in the ink | Part (article) |

## Industry restricted and declarable substances

The following substances are restricted by leading OEMs to comply with product safety standards in Germany and to reduce severe environmental or health and safety impacts. Suppliers can check the information pages in the BOMcheck tool to find out which OEMs require their suppliers to comply with particular industry substance restrictions.

| Substances which can normally be found in supplied articles | Threshold | Threshold calculation level |
|---|---|---|
| Substances of Concern | No intentionally added content | Part (article) |
| Beryllium and Beryllium compounds | 0.1% by weight (1 000 ppm) of any material | Material |
| Rare earth minerals | No intentionally added content | Part (article) |
| Precious metals | No intentionally added content | Part (article) |
| Brominated flame retardants (other than PBBs, PBDEs or HBCDD) | Declare if > 0.1% w/w total bromine content from BFRs | Part (article) |
| Brominated flame retardants (other than PBBs, PBDEs or HBCDD) | Declare if > 0.09% total bromine content from BFRs in printed wiring board laminate | Part (article) |
| Chlorinated flame retardants | Declare if > 0.1% w/w total chlorine content from CFRs | Part (article) |
| Chlorinated flame retardants | Declare if > 0.09% total chlorine content from CFRs in printed wiring board laminate | Part (article) |
| PVC and PVC copolymers | Declare if > 0.1% w/w total chlorine content from PVC | Part (article) |
| Antimony trioxide in plastic materials | Declare if > 0.1% w/w in plastic parts | Part (article) |
| Phthalates | Declare if > 0.1% w/w | Part (article) |
| **Restrictions which apply to parts containing leather or textiles** | | |
| Alkylphenol and alkylphenol ethoxylates | 0.01% by weight (100 ppm) in textile and leather articles | Part (article) |
| **Restrictions which apply to parts used in lamps and lamp ballasts** | | |
| Antimony compounds in glass | 0.1% w/w in glass in lamps | Part (article) |
| Arsenic compounds in glass | 0.1% w/w in glass in lamps | Part (article) |
| Polycyclic Aromatic Hydrocarbons (PAH) | 0.005% in potting material in electronic or magnetic ballast for lamps | Part (article) |
| **Restrictions which apply to parts which come into contact with skin** | | |
| Azo Colourants | 30 ppm if part comes into contact with skin | Part (article) |

| | | |
|---|---|---|
| Benzoapyrene in contact with skin | The limits for different applications are provided in the information sheet | Part (article) |
| Sum of all PAHs | The limits for different applications are provided in the information sheet | Part (article) |

# Appendix A: Exemptions published in Annex III to the RoHS Directive (2011/65/EU) which remain valid as of February 2026

| Number | Description |
|---|---|
| 1(f)-I | 1 Mercury in single capped (compact) fluorescent lamps not exceeding (per burner): 1(f) For special purposes: 5 mg |
| 2(b)(4)-I | Lamps for other general lighting and special purposes (e.g. induction lamps): 15 mg |
| 2(b)(4)-II | Lamps emitting mainly light in the ultraviolet spectrum: 15 mg |
| 2(b)(4)-III | Emergency lamps: 15 mg |
| 4(a)-I | Mercury in low pressure non-phosphor coated discharge lamps, where the application requires the main range of the lamp-spectral output to be in the ultraviolet spectrum: up to 15 mg mercury may be used per lamp |
| 4(b) | Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra > 80: P ≤ 105 W: 16 mg may be used per burner |
| 4(c)-I | Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner): P less than or equal to 155 W: 20 mg |
| 4(c)-II | Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner): P greater than 155 W and less than or equal to 405 W: 25 mg |
| 4(c)-III | Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner): P greater than 405 W: 25 mg |
| 4(e) | Mercury in metal halide lamps (MH) |
| 4(f) | Mercury in other discharge lamps for special purposes not specially mentioned in this Annex |
| 4(f)-I | Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex |
| 4(f)-II | Mercury in high pressure mercury vapour lamps used in projectors where an output ≥ 2000 lumen ANSI is required |
| 4(f)-III | Mercury in high pressure sodium vapour lamps used for horticulture lighting |
| 4(f)-IV | Mercury in lamps emitting light in the ultraviolet spectrum |
| 4(g) | Mercury in hand crafted luminous discharge tubes used for signs, decorative or architectural and specialist lighting and light-artwork, where the mercury content shall be limited as follows: (a) 20 mg per electrode pair + 0.3 mg per tube length in cm, but not more than 80 mg, for outdoor applications and indoor applications exposed to temperatures below 20 °C; (b) 15 mg per electrode pair + 0.24 mg per tube length in cm, but not more than 80 mg, for all other indoor applications |
| 5(b) | Lead in glass of fluorescent tubes not exceeding 0.2% by weight |
| 6(a) | Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight |
| 6(a)-I | Lead as an alloying element in steel for machining purposes containing up to 0.35% lead by weight and in batch hot dip galvanised steel components containing up to 0.2% lead by weight |
| 6(a)-II | Lead as an alloying element in batch hot-dip galvanised steel components containing up to 0.2% lead by weight |
| 6(b) | Lead as an alloying element in aluminium containing up to 0.4% lead by weight |
| 6(b)-I | Lead as an alloying element in aluminium containing up to 0.4% lead by weight, provided it stems from lead-bearing aluminium scrap recycling |
| 6(b)-II | Lead as an alloying element in aluminium for machining purposes with a lead content of up to 0.4% lead by weight |

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| 6(b)-III | Lead as an alloying element in aluminium casting alloys containing up to 0.3% lead by weight, provided it stems from lead-bearing aluminium scrap recycling |
| 6(c) | Copper alloy containing up to 4% lead by weight |
| 7(a) | Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead) |
| 7(a)-I | Lead in high melting temperature type solders (i.e., lead-based alloys containing 85% by weight or more lead)<br>for internal interconnections for attaching die, or other components along with a die in semiconductor assembly with steady state or transient/impulse currents of 0.1 A or greater or blocking voltages beyond 10 V, or die edge sizes larger than 0.3 mm x 0.3 mm |
| 7(a)-II | Lead in high melting temperature type solders (i.e., lead-based alloys containing 85% by weight or more lead)<br>for integral (meaning internal and external) connections of die attach in electrical and electronic components, if all the following conditions are met:<br>- the thermal conductivity of the cured/sintered die-attach material is >35W/(m*K),<br>- the electrical conductivity of the cured/sintered die-attach material is >4.7MS/m ,<br>- solidus melting temperature is higher than 260°C |
| 7(a)-III | Lead in high melting temperature type solders (i.e., lead-based alloys containing 85% by weight or more lead)<br>in first level solder joints (internal or integral connections - meaning internal and external) for manufacturing components so that subsequent mounting of electronic components onto subassemblies (i.e. modules, sub-circuit boards, substrates, or point-to-point soldering) with a secondary solder does not reflow the first level solder. This sub-entry excludes die attach applications and hermetic sealings |
| 7(a)-IV | Lead in high melting temperature type solders (i.e., lead-based alloys containing 85% by weight or more lead)<br>in second level solder joints for the attachment of components to printed circuit board or lead frames:<br>1. in solder balls for the attachment of ceramic ball-grid-array (BGA)<br>2. in high temperature plastic overmouldings (> 220 °C) |
| 7(a)-V | Lead in high melting temperature type solders (i.e., lead-based alloys containing 85% by weight or more lead)<br>as a hermetic sealing material between:<br>1. a ceramic package or plug and a metal case,<br>2. component terminations and an internal sub-part |
| 7(a)-VI | Lead in high melting temperature type solders (i.e., lead-based alloys containing 85% by weight or more lead)<br>for establishing electrical connections between lamp components in incandescent reflector lamps for infrared heating, high intensity discharge lamps, or oven lamps |
| 7(a)-VII | Lead in high melting temperature type solders (i.e., lead-based alloys containing 85% by weight or more lead)<br>for audio transducers where the peak operating temperature exceeds 200°C |
| 7(c)-I | Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound |
| 7(c)-II | Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher |
| 7(c)-V | Electrical and electronic components containing lead in a glass or glass matrix compound that fulfils any of the following functions:<br>1) for protection and electrical insulation in glass beads of high-voltage diodes and glass layers for wafers ;<br>2) for hermetic sealing between ceramic, metal and/or glass parts;<br>3) for bonding purposes in a process parameter window for < 500 °C combined with a viscosity of 1013.3 dPas ('glass-transition temperature');<br>4) for use as a resistive material such as ink, with a resistivity range from 1 ohm/square to 100 megohm/square, excluding trimmer potentiometers;<br>5) for use in chemically modified glass surfaces for microchannel plates (MCPs), channel electron multipliers (CEMs) and resistive glass products (RGPs). |

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| 7(c)-VI | Electrical and electronic components containing lead in a ceramic that fulfils any of the following functions:<br>1) for use in piezoelectric lead zirconium titanate (PZT) ceramics;<br>2) for providing ceramics with a positive temperature coefficient (PTC). |
| 8(b) | Cadmium and its compounds electrical contacts |
| 8(b)-I | Cadmium and its compounds in electrical contacts used in: circuit breakers, thermal sensing controls, thermal motor protectors (excluding hermetic thermal motor protectors), AC switches rated at: 6 A and more at 250 V AC and more, or 12 A and more at 125 V AC and more, DC switches rated at 20 A and more at 18 V DC and more, and switches for use at voltage supply frequency greater than or equal to 200 Hz |
| 9a-II | Up to 0,75% hexavalent chromium by weight, used as an anticorrosion agent in the cooling solution of carbon steel cooling systems of absorption refrigerators:<br>designed to operate fully or partly with electrical heater, having an average utilised power input ≥ 75 W at constant running conditions;<br>designed to fully operate with non-electrical heater. |
| 9a-III | Up to 0,7 % hexavalent chromium by weight, used as an anticorrosion agent in the working fluid of the carbon steel sealed circuit of gas absorption heat pumps for space and water heating |
| 13(a) | Lead in white glasses used for optical applications |
| 13(b) | Cadmium and lead in filter glasses and glasses used for reflectance standards |
| 13(b)-(I) | Lead in ion coloured optical filter glass types |
| 13(b)-(II) | Cadmium in striking optical filter glass types; excluding applications falling under point 39(a) of this Annex |
| 13(b)-(III) | Cadmium and lead in glazes used for reflectance standards |
| 15 | Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages |
| 15(a) | Lead in solders to complete a viable electrical connection between the semiconductor die and carrier within integrated circuit flip chip packages where at least one of the following criteria applies: a semiconductor technology node of 90 nm or larger; a single die of 300 mm2 or larger in any semiconductor technology node; stacked die packages with die of 300 mm2 or larger, or silicon interposers of 300 mm2 or larger |
| 18(b) | Lead as activator in the fluorescent powder (1% lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi2O5:Pb) |
| 18(b)-I | Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps containing phosphors such as BSP (BaSi2O5:Pb) when used in medical phototherapy equipment |
| 24 | Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors |
| 29 | Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC |
| 32 | Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes |
| 34 | Lead in cermet-based trimmer potentiometer elements |
| 39(b) | Cadmium in downshifting semiconductor nanocrystal quantum dots directly deposited on LED semiconductor chips for use in display and projection applications (< 5 µg Cd per mm² of light emitting LED chip surface) with a maximum amount per device of 1 mg. |
| 42 | Lead in bearings and bushes of diesel or gaseous fuel powered internal combustion engines applied in non-road professional use equipment:<br>with engine total displacement ≥ 15 litres<br>or<br>with engine total displacement < 15 litres and the engine is designed to operate in applications where the time between signal to start and full load is required to be less than 10 seconds; or |

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| | regular maintenance is typically performed in a harsh and dirty outdoor environment, such as mining, construction, and agriculture applications |
| 44 | Lead in solder of sensors, actuators, and engine control units of combustion engines within the scope of Regulation (EU) 2016/1628 of the European Parliament and of the Council (*1), installed in equipment used at fixed positions while in operation which is designed for professionals, but also used by non-professional users |
| 45 | Lead diazide, lead styphnate, lead dipicramate, orange lead (lead tetroxide), lead dioxide in electric and electronic initiators of explosives for civil (professional) use and barium chromate in long time pyrotechnic delay charges of electric initiators of explosives for civil (professional) use |
| 46 | Cadmium and lead in plastic profiles containing mixtures produced from polyvinyl chloride waste (hereinafter referred to as “recovered rigid PVC”), used for electrical and electronic windows and doors, where the concentration in the recovered rigid PVC material does not exceed 0,1 % cadmium by weight and 1,5 % lead by weight. |

## Appendix B: Exemptions published in Annex IV to the RoHS Directive (2011/65/EU) which remain valid as of February 2026

| Number | Description |
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| 1 | Lead, cadmium and mercury in detectors for ionising radiation |
| 1a | Lead and cadmium in ion selective electrodes including glass of pH electrodes. |
| 1b | Lead anodes in electrochemical oxygen sensors. |
| 1c | Lead, cadmium and mercury in infra-red light detectors. |
| 2 | Lead bearings in X-ray tubes. |
| 3 | Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate. |
| 4 | Lead diazide, lead styphnate, lead dipicramate, orange lead (lead tetroxide), lead dioxide in electric and electronic initiators of explosives for civil (professional) use and barium chromate in long time pyrotechnic delay charges of electric initiators of explosives for civil (professional) use |
| 5 | Lead in shielding for ionising radiation. |
| 9 | Cadmium in helium-cadmium lasers. |
| 10 | Lead and cadmium in atomic absorption spectroscopy lamps. |
| 11 | Lead in alloys as a superconductor and thermal conductor in MRI. |
| 12 | Lead and cadmium in metallic bonds creating superconducting magnetic circuits in MRI, SQUID, NMR (Nuclear Magnetic Resonance) or FTMS (Fourier Transform Mass Spectrometer) detectors. |
| 13 | Lead in counterweights. |
| 14 | Lead in single crystal piezoelectric materials for ultrasonic transducers. |
| 15 | Lead in solders for bonding to ultrasonic transducers. |
| 17 | Lead in solders in portable emergency defibrillators. |
| 18 | Lead in solders of high performance infrared imaging modules to detect in the range 8-14 µm |
| 20 | Cadmium in X-ray measurement filters. |
| 26 | Lead in the following applications that are used durably at a temperature below – 20 °C under normal operating and storage conditions: (a) solders on printed circuit boards; (b) termination coatings of electrical and electronic components and coatings of printed circuit boards; (c) solders for connecting wires and cables; (d) solders connecting transducers and sensors. Lead in solders of electrical connections to temperature measurement sensors in devices which are designed to be used periodically at temperatures below – 150 °C. |
| 27 | Lead in solders, termination coatings of electrical and electronic components and printed circuit boards, connections of electrical wires, shields and enclosed connectors, which are used in (a) magnetic fields within the sphere of 1 m radius around the isocenter of the magnet in medical magnetic resonance imaging equipment, including patient monitors designed to be used within this sphere, or (b) magnetic fields within 1 m distance from the external surfaces of cyclotron magnets, magnets for beam transport and beam direction control applied for particle therapy.<br>(c) MRI non-integrated coils, for which the Declaration of Conformity of this model is issued for the first time before 23 September 2022, or<br>(d) MRI devices including integrated coils, which are used in magnetic fields within the sphere of 1 m radius around the isocentre of the magnet in medical magnetic resonance imaging equipment, for which the Declaration of Conformity is issued for the first time before 30 June 2024 |
| 29 | Lead in alloys, as a superconductor or thermal conductor, used in cryo-cooler cold heads and/or in cryo-cooled cold probes and/or in cryo-cooled equipotential bonding systems, in medical devices (category 8) and/or in industrial monitoring and control instruments. |

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| 31a | Lead, cadmium, hexavalent chromium, and polybrominated diphenyl ethers (PBDE) in spare parts recovered from and used for the repair or refurbishment of medical devices, including in vitro diagnostic medical devices, or electron microscopes and their accessories, provided that the reuse takes place in auditable closed-loop business-to-business return systems and that each reuse of parts is notified to the customer. Expires on: (a) 21 July 2021 for the use in medical devices other than in vitro diagnostic medical devices; (b) 21 July 2023 for the use in in vitro diagnostic medical devices; (c) 21 July 2024 for the use in electron microscopes and their accessories. |
| 33 | Lead in solders on populated printed circuit boards used in Directive 93/42/EEC class IIa and IIb mobile medical devices other than portable emergency defibrillators. |
| 39 | Lead in micro-channel plates (MCPs) used in equipment where at least one of the following properties is present: (a) a compact size of the detector for electrons or ions, where the space for the detector is limited to a maximum of 3 mm/MCP (detector thickness + space for installation of the MCP), a maximum of 6 mm in total, and an alternative design yielding more space for the detector is scientifically and technically impracticable; (b) a two-dimensional spatial resolution for detecting electrons or ions, where at least one of the following applies: (i) a response time shorter than 25 ns; (ii) a sample detection area larger than 149 mm2; (iii) a multiplication factor larger than 1.3 × 103. (c) a response time shorter than 5 ns for detecting electrons or ions; (d) a sample detection area larger than 314 mm2 for detecting electrons or ions; (e) a multiplication factor larger than 4.0 × 107. The exemption expires on the following dates: (a) 21 July 2021 for medical devices and monitoring and control instruments; (b) 21 July 2023 for in-vitro diagnostic medical devices; (c) 21 July 2024 for industrial monitoring and control instruments. |
| 42 | Mercury in electric rotating connectors used in intravascular ultrasound imaging systems capable of high operating frequency (greater than 50 MHz) modes of operation. |
| 44 | Cadmium in radiation tolerant video camera tubes designed for cameras with a centre resolution greater than 450 TV lines which are used in environments with ionising radiation exposure exceeding 100 Gy/hour and a total dose in excess of 100kGy |
| 47 | Bis(2-ethylhexyl) phthalate (DEHP), butyl benzyl phthalate (BBP), dibutyl phthalate (DBP) and diisobutyl phthalate (DIBP) in spare parts recovered from and used for the repair or refurbishment of medical devices, including in vitro diagnostic medical devices, and their accessories, provided that the reuse takes place in auditable closed-loop business-to-business return systems and that each reuse of parts is notified to the customer. |
| 48 | Lead in bismuth strontium calcium copper oxide (BSCCO) superconductor cables and wires and lead in electrical connections to these wires |
| 49 | Mercury in melt pressure transducers for capillary rheometers at temperatures over 300 °C and pressures over 1 000 bar |