

Royal Philips Electronics List of Restricted Substances in Production Processes

Restricted substances	Remarks ^a
Benzene (<i>see remark b</i>)	Also restricted in products; CMR class 1
Specific benzene compounds (<i>see remark b and c</i>)	CMR class 1,2
Beryllium and Beryllium compounds	Also proposed to be restricted in products; CMR class is 1
Cadmium and Cadmium compounds	Also restricted in products; CMR class 1
Carbon monoxide (<i>see remark d</i>)	CMR class 1
Chlorinated paraffins (short chain C10-13 + C23)	Also restricted in products
Epichlorohydrin, used in resins; (<i>see remark b</i>)	CMR class 2
Formaldehyde (<i>see remark b</i>)	Also restricted in products; CMR class 2
Hexavalent Chromium (Cr 6+) compounds	Also restricted in products
Hydrazine	CMR class 2
Lead and Lead compounds (<i>see remark e</i>)	Also restricted in products; CMR class 1
Mercury and Mercury compounds	Also restricted in products; CMR class 2
Glycol ethers (some specific toxic ones; <i>see remark f</i>)	CMR class 2
Organostannic compounds	Also restricted in products
Ozone depleting substances (<i>see remark g</i>)	Also restricted in products
PFAS, PFOA, PFOS (<i>see remark h</i>)	Potentially marked as PBT (PFAS, PFOA), proposed as PBT (PFOS)
Phenol (<i>see remark b</i>)	Also restricted in products; substance on OSPAR list; CMR class 3.
Phthalates (specific; <i>see remark i</i>)	Also restricted in products; substance on OSPAR list
Polybrominated biphenyls (PBBs) (<i>see remark j</i>)	Also restricted in products
Polybrominated diphenyl ethers (PBDEs) (<i>see remark j</i>)	Also restricted in products
Polychloronaphthalenes	Also restricted in products; substance on OSPAR list
Polycyclic aromatic hydrocarbons (PAHs)	Also restricted in products; substance on OSPAR list
Specific CHCs: CH ₂ Cl ₂ , CHCl ₃ , CH ₃ Cl, C ₂ HCl ₃ , C ₂ Cl ₄	CMR class 2
Specific Amides (<i>see remark b and k</i>)	CMR class 2

- a. Reporting of the use and emissions are needed, only when the substances are intentionally used. Simple mass balances are mandatory for these calculations; assumptions for emission calculation are allowed. No reporting of use and emissions and dispensations are needed for preparations if concentration is below 0.1% (weight) and for use in analysis and laboratory applications and for use in Research and Development applications.
Abbreviations: **CMR**: carcinogenic, mutagenic or reproductive toxin; **OSPAR**: The 1992 OSPAR Convention is the current instrument guiding international cooperation on the protection of the marine environment of the North-East Atlantic. A Priority List of Chemicals has been made. **PBT**: persistence, bio-accumulation, toxic to the environment.
- b. These substances are only permitted if the weight percentage in preparations is less 10% (weight). Reaction products of epichlorohydrin and bisphenol-A are exempted from this restriction.
- c. Specific benzene compounds are for example: nitrobenzene, p-aminoazobenzene, azobenzenen, trichlorobenzene, hexachlorobenzene and hydrazobenzene.
- d. Only use is monitored. CO emissions are not intrinsically attributable to CO use. There are more sources of CO emissions.
- e. All applications of lead in **PMS** manufacturing operations are exempted from the lead restriction. Other lead applications exempted by legislation (e.g., lead soldering **in automotive products**) are also exempted from the lead restriction here.
- f. Toxic glycol ethers are: 1,2 dimethoxy ethane / ethylene glycol dimethyl ether (CAS 110-71-4), 2-methoxy or 2-ethoxy-ethanol and 2-methoxy or 2-ethoxy-ethylacetate.
- g. Ozone depleting substances, as published in 2000 in the Montreal protocol on substances that deplete the ozone layer: CFCs (Chlorofluorocarbons), HCFCs (Hydrogenated chlorofluorocarbons), Halons, Methyl Bromide, HBCFCs (Hydrobromofluorocarbons), 1,1,1-Trichloroethane, Carbon tetrachloride and bromochloromethane.
- h. PFAS: perfluoroalkylsulfonic acids and derivatives; PFOA: perfluorooctanoic acid (CAS 335-67-1) and derivatives; PFOS: perfluorooctanyl sulfonic acid (CAS 307-35-7) and derivatives. In view of relevance and complex data collection, only aggregated data need to be reported according to an internationally agreed format (ESIA, WSC).
- i. Specific phthalates are: Butylbenzylphthalate (BBP), Di-(2-ethylhexyl)phthalate (DEHP), Di-butylphthalate (DBP), Di-isodecylphthalate (DIDP), Di-isononylphthalate (DINP), di-n-octylphthalate (DNOP).
- j. Polybrominated diphenylethers (PBDE) are the same as polybrominated biphenylethers (PBBE); polybrominated diphenyloxides (PBDO) are the same as polybrominated biphenyl oxides (PBBO)
- k. Specific amides are: N,N-dimethylacetamide (DMA); N,N-dimethylformamide (DMF); N-methyl acetamide (NMA); N-methyl formamide (NMF).