

Barco Substances List

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1 Revision history

Date	Version	What has changed
08/07/2014	1.0	First release
10/06/2015	1.1	Added four phthalates to the RoHS restricted substances Added DiNP and DnHP to the 'other restricted substances'
23/01/2018	2.0	- Updated according to current interpretation of an article (REACH) - Reviewed the complete substances list
22/08/2018	2.1	- Removed 2,3-dibromopropan-1-ol from the list - Changed DiNP and DiDP from restricted to declarable - Removed DnHP since it's also a SVHC substance

2 Introduction

The Barco substances list is part of the Barco environmental requirements. The list contains minimum requirements related to international regulations and to Barco's own requirements in order to fulfill requirements of our own customers and to anticipate future substance restrictions. All Barco suppliers are required to ensure the compliance of their products with this list.

The Barco Substances List is aligned with the **BOMcheck List of Restricted and Declarable Substances**. Compliance with the BOMcheck list is considered as equal to compliance with the Barco Substances List.

3 Scope

The Barco substances list specifies the substance requirements for all Barco products, including subassemblies, parts, materials, components, batteries and packaging that are incorporated into Barco products, as well as some manufacturing processes. The Barco substances list contains two types of substances:

- **Restricted substances**: cannot be present in the product or its manufacturing above a certain threshold and in specific applications.
- **Declarable substances**: they can be present in the product but they need to be declared to Barco if they are above a specific threshold concentration.

4 Reporting/declaring substances

Suppliers are requested to respond to questions regarding the presence of any substances listed in the tables of this document. These requests can be sent by Barco or by a third party (GreenSoft).

Barco Substances List

More and more regulations require Barco to share information with its customers about the materials contained in its products. In order to report compliance with regulations and to demonstrate due diligence, Barco relies on information provided by its suppliers and expects its suppliers to collect information from their suppliers accordingly.

5 Restricted and declarable substances

This section includes the lists of restricted and declarable substances.

- The column 'Substances': contains the official name of the substance.
- The column 'Maximum Concentration Level': indicates the threshold above which the substance needs to be restricted or reported.
- The column 'Application': shows the scope of the restriction/declaration.
- The column 'Restricted/Declarable': Restricted means the substance is prohibited above the maximum concentration level. Suppliers also need to declare their compliance to these restrictions to Barco. Declarable indicates that the supplier needs to actively declare the presence of the substance in the case it is present above the maximum concentration level.

5.1 RoHS restrictions

The substances below are restricted by the EU RoHS Directive (2011/65/EU). The restrictions do not apply to the exemptions published in Annex IV in the RoHS Directive. Be aware that all exemptions have an expiry date.

The restrictions are applicable on the homogeneous level. The homogeneous level is defined as either:

- A material with a uniform composition throughout; or
- A material that consists of a combination of materials, that cannot be disjointed or separated into different materials by mechanical actions such as unscrewing, cutting, crushing, grinding or abrasive processes.

Substances	Maximum Concentration Level	Application	Restricted/Declarable
Cadmium and cadmium compounds	0.01%	All	Restricted
Hexavalent Chromium compounds	0.1%	All	Restricted
Lead and lead compounds	0.1%	All	Restricted
Mercury and mercury compounds	0.1%	All	Restricted
PBDEs (Polybrominated diphenyl ethers)	0.1%	All	Restricted
PBBs (Polybrominated biphenyls)	0.1%	All	Restricted
Bis(2-ethylhexyl) phthalate (DEHP)	0.1%	All	Restricted*
Benzyl butyl phthalate (BBP)	0.1%	All	Restricted*
Dibutyl phthalate (DBP)	0.1%	All	Restricted*
Diisobutyl phthalate (DIBP)	0.1%	All	Restricted*

* The four phthalates are restricted from 22 July 2019 onwards.

Barco Substances List

5.2 REACH

5.2.1 Candidate list Substances of Very High Concern (SVHC)

Article 33 of the REACH regulation requires all suppliers to inform their customers if the product they supply contains any of the substances of the Candidate list in concentrations >0.1% w/w on article level.

The concentration threshold of 0.1% w/w applies to every article supplied. This means this threshold applies to each article of an object made up of more than one article, which were joined or assembled together (=complex object). In other words, the 0.1% w/w threshold applies to every subpart of an article.

The substances of the Candidate list are likely to be restricted in the future. Therefore suppliers of Barco are expected to declare already if SVHCs are present or not regardless of the threshold (from 0.0% w/w of the article) in order to anticipate compliance.

The candidate list is updated twice a year by the European Chemicals Agency. For the most recent list we refer to the ECHA-website: <http://echa.europa.eu/nl/candidate-list-table>

Substances	Maximum Concentration Level	Application	Restricted/Declarable
SVHC substances REACH (Candidate list)	0.0%	All	Declarable

5.2.2 Restricted substances

The substances listed in Annex XVII of REACH are restricted or banned for specific applications.

The most recent list of restricted substances: <http://echa.europa.eu/addressing-chemicals-of-concern/restrictions/list-of-restrictions/list-of-restrictions-table>

Substances	Maximum Concentration Level	Application	Restricted/Declarable
Restricted REACH substances (Annex XVII)	Not intentionally added	All	Restricted

5.2.3 Authorized substances

The substances listed in Annex XIV of REACH shall not be placed on the market after their respective sunset date unless they are specifically authorized by ECHA. All suppliers of Barco have to make sure the products they supply to Barco do not contain any of the substances under authorization (unless authorized by ECHA).

Since all these substances are on the SVHC list, they are already declarable in 4.1.1.

The most recent list of authorized substances:

<http://echa.europa.eu/addressing-chemicals-of-concern/authorisation/recommendation-for-inclusion-in-the-authorisation-list/authorisation-list>

5.3 Batteries

Barco Substances List

The substances in the table below are restricted in batteries by the EU Battery Directive.

Substances	Maximum Concentration Level	Application	Restricted/Declarable
Cadmium	0.001%	Batteries	Restricted
Mercury	0.0001%	Batteries	Restricted
Lead	0.004%	Batteries	Restricted

5.4 Packaging

The following restriction arises from the EU Packaging Directive.

Substances	Maximum Concentration Level	Application	Restricted/Declarable
Sum of all heavy metals (Cd, Hg, Cr(VII) and Pb)	0.01%	Packaging	Restricted

Next to the above restriction, all wood used for pallets, crating, blocking, or bracing must be in compliance with the International Standards for Phytosanitary Measures Guidelines for Regulating Wood Packaging Material in International Trade (ISPM15).

5.5 Other restricted substances

Besides the substances in the scope of current restrictions, this section provides the list of substances which are restricted or declarable in worldwide regulations and substances that need to be avoided in products/packaging provided to Barco due to upcoming restrictions in future regulations. Barco requires its suppliers to declare those substances.

If there is indicated in the last column 'Declarable on the homogeneous level', Barco expects its suppliers to provide information about the presence of that particular substance in the product on the homogeneous level.

Substances	Maximum Concentration Level (% w/w)	Application	Restricted/Declarable
Arsenic compounds	Not intentionally added	Packaging	Restricted
Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene (BNST)	Not intentionally added	All	Restricted
Dimethyl Fumarate	0.00001%	Packaging	Restricted
Fluorinated Greenhouse Gases (PFC, SF6, HFC)	Not intentionally added	All	Restricted
Formaldehyde	Not intentionally added	Composite wood products or components (plywood, particle board and MDF) and textiles	Restricted
HBCDD	0.01%	All	Restricted

Barco Substances List

(Hexabromocyclododecane)			
Lead/lead compounds in cables/cords with thermoset or thermoplastic coatings	0.03%	Surface coating of cable	Restricted
Ozone depleting substances	Not intentionally added	All	Restricted
Pentachlorophenol (PCP)	Not intentionally added	All	Restricted
Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA-textiles	Not intentionally added	All	Restricted
PFOS (Perfluorooctane sulfonate)	0.1%	All	Restricted
Polychlorinated and polybrominated dioxins and furans	Not intentionally added	All	Restricted
Polychlorinated biphenyls (PCBs)	Not intentionally added	All	Restricted
Polychloronaphthalenes	Not intentionally added	All	Restricted
PVC	0.1%	Packaging	Restricted
Shortchain chlorinated paraffins (C10-C13)	Not intentionally added content	All	Restricted
Radioactive substances	Not intentionally added	All	Restricted
Antimony compounds	0.1%	Glass in lamps	Declarable
Antimony trioxide	0.1%	All	Declarable on the homogeneous level
Arsenic compounds	0.1%	Glass in lamps	Declarable
Azo Colourants	0.003%	parts coming into contact with skin	Declarable
Benzoapyrene	0.002% if short duration skin contact 0.0001% if long duration skin contact	parts coming into contact with skin	Declarable
Beryllium metal and Beryllium oxide (BeO)	0.1%	All	Declarable on the homogeneous level
2,2-bis(bromomethyl) propane- 1,3-diol	0.1%	All	Declarable on the homogeneous level
Brominated flame retardants (other than PBBs, PBDEs or HBCDD)	Declare if > 0.1% w/w total bromine content from BFRs	All	Declarable
Brominated flame retardants (other than PBBs, PBDEs or HBCDD)	Declare if > 0.09% total bromine content from BFRs in printed circuit boards	Printed circuit boards	Declarable
Chlorinated flame retardants	Declare if > 0.1% w/w total chlorine content from CFRs	All	Declarable
Chlorinated flame retardants	Declare if > 0.09% total chlorine content from CFRs in printed circuit boards	Printed circuit boards	Declarable
Cobalt metal	0.1%	All	Declarable on the homogeneous level
Cobalt dichloride	0.1%	All	Declarable on the homogeneous level
Cobalt sulfate	0.1%	All	Declarable on the

Barco Substances List

			homogeneous level
Di-arsenic pentoxide	0.1%	All	Declarable on the homogeneous level
Di-arsenic trioxide	0.1%	All	Declarable on the homogeneous level
Diethyl phthalate (DEP)	0.1%	All	Declarable on the homogeneous level
Di-isodecyl phthalate (DiDP)	Not intentionally added	All	Declarable
Di-isononyl phthalate (DiNP)	Not intentionally added	All	Declarable
EPS material	Not intentionally added	Packaging	Declarable
Indium phosphide	0.1%	All	Declarable on the homogeneous level
Medium-chain chlorinated paraffins (MCCP)	0.1%	All	Declarable on the homogeneous level
Nickel sulfamate	0.1%	All	Declarable on the homogeneous level
Nickel sulphate	0.1%	All	Declarable on the homogeneous level
Nonylphenol	0.1%	All	Declarable on the homogeneous level
<u>PAHs (Polycyclic Aromatic Hydrocarbons)</u>	0.005%	Potting material in electronic or magnetic ballast for lamps	Declarable
<u>PAHs (Polycyclic Aromatic Hydrocarbons)</u>	0.0001%	All	Declarable
Perchlorates	6 x 10 ⁻⁷ mass% of battery	Batteries	Declarable
Phthalates	0.1%	All	Declarable
<u>POPs (Persistent organic pollutants)</u>	0.1%	All	Declarable
PVC and PVC copolymers	0.1%	All	Declarable on the homogeneous level
Sum of all PAHs	0.02% if short duration skin contact, 0.001% if long duration skin contact	All	Declarable
2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (TBBPA)	0.1%	All	Declarable on the homogeneous level
Tris(2-chlorethyl) phosphate	0.1%	All	Declarable on the homogeneous level

Barco Substances List

5.6 References

- [DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment \(RoHS Directive\)](#)
- [REGULATION \(EC\) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals \(REACH\)](#)
- [EUROPEAN PARLIAMENT AND COUNCIL DIRECTIVE 94/62/EC on packaging and packaging waste](#)
- [Directive 2006/66/EC of the European Parliament and of the Council on batteries and accumulators and waste batteries and accumulators](#)
- [BOMcheck List of Restricted and Declarable Substances](#)