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## Restricted Substance List

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## 1. Purpose

This document provides information of substances which are subject to prohibition or restriction based on global environmental regulatory requirements and customer requirements, which together constitute the standard applied by Belkin worldwide. This includes all Belkin branded products, including subassemblies, parts, materials, components, batteries, and packaging that are incorporated into Belkin's products.

## 2. Scope

The requirements specified in this standard apply to all Belkin branded products and all parts, components, and materials incorporated into Belkin's products. All parts, components and materials incorporated into Belkin branded products, which are included in any Belkin deliverable, must meet or exceed the applicable legal requirements in each country in which these products will be sold or marketed. The ES-0100 specification applies to all Belkin 'Electrical and Electronic Equipment' as defined by EU RoHS Directive 2011/65/EU and WEEE Directive 2012/19/EU, as well as Belkin 'Electronic Information Products' as dictated by the China RoHS Legislation GB/T 26572-2011 and SJ/T 11364-2014. Belkin deliverables must meet the applicable legal requirements in each country in which these products will be sold or marketed this includes but not limited to California proposition 65, EU REACH directive, EU RoHS Directive 2011/65/EU and the amended 2015/863, POPs REGULATION (EU) 2019/1021. This specification also applies to the products' retail packaging and end user information.

This specification describes Belkin's commitment to the elimination of hazardous substances in Belkin branded products and retail packaging. The restrictions in this specification are compiled from international regulations and Belkin policies. This specification shall be followed by all such products and to all Belkin business units involved in their design, manufacture, or purchase worldwide.

Belkin ES-0100 is not intended to be a listing of all environmentally related product design requirements that may be established by Belkin or by law. A supplier's compliance with this standard does not relieve or diminish the supplier's obligation to comply with any other Belkin product specification or its obligation to comply with all applicable laws.

Belkin holds suppliers accountable by conducting factory audits and testing for restricted substances at Belkin approved 3<sup>rd</sup> party laboratories. Belkin may also verify compliance with its in-house laboratory.

Questions regarding this standard should be directed to [sustainability@belkin.com](mailto:sustainability@belkin.com).

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### 3. Reference Documents

- EU RoHS: Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment and its amending COMMISSION DELEGATED DIRECTIVE (EU) 2015/863  
China RoHS: Management Methods for the Control of Pollution from Electronic Information Products\*
- China RoHS: Requirements on concentration limits for certain restricted substances in electrical and electronic products GBT 26572-2011
- China RoHS Marking: Marking for the Restricted Use of Hazardous Substances in Electronic and Electrical Products SJ/T 11364-2014\*
- EU WEEE: Directive 2012/19/EU on Waste Electrical and Electronic Equipment. In force since February 14<sup>th</sup>, 2014.
- CPSIA, 2008: Consumer Product Safety Improvement Act 2008-Public Law 110-314; US
- Cal Prop 65: Safe Drinking Water and Toxic Enforcement Act of 1986 Proposition 65 list of chemicals: <https://oehha.ca.gov/>
- EU REACH: Directive 1907/2006 on Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) and SCIP dossier notification requirements
- Belkin Global Supplier Packaging and Shipping Compliance Manual For All Destinations (LI-0100)
- Montreal Protocol: Montreal Protocol on Substances that Deplete the Ozone Layer, September 1987.
- EC No. 2037/2000: Regulation (EC) No. 2037/2000 of the European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer
- Annex XVII to REACH Regulation (EC) No. 1907/2006

\* Final versions in Chinese are available at the Ministry of Information Industry of P.R. China: [www.mii.gov.cn](http://www.mii.gov.cn).

### 4. Responsibilities

When specified by Belkin or in response to a request by Belkin, the supplier shall be responsible for verifying compliance to the specifications in this document. Suppliers must keep all technical documentation used to verify and support compliance on file for 10 years after the product has been placed on the market and make such available to Belkin upon request. This includes documentation and data collected by the second-tier suppliers in the supply chain and the supplier's own records on the substance or material content and design of the products. Upon request by Belkin, the supplier will verify compliance of parts, components, materials, or products using analytical testing or other suitable means

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approved by Belkin. This specification shall be followed as regards all such products and by all Belkin business units involved in their design, manufacture, or purchase worldwide.

- The supplier is responsible for providing sufficient documentation to verify compliance to this standard prior to product acceptance.
- Belkin sustainability is responsible for approval for part activation after receiving sufficient documentation to support adherence to this specification.
- Document Control & Regulatory Compliance is the author and keeper of this document
- Any deviation from this specification will need authorization by senior management.

## 5. Definitions

- **Article:** The smallest discrete object whose shape, surface or design determines its function to a greater degree than its chemical composition (e.g., a plastic housing, stainless steel screw). (Note: See the most current guidance provided by the EU Chemicals Agency.)
- **CAS No.:** Chemical Abstract Service registry number is an internationally recognized number to uniquely identify a chemical.
- **RoHS:** Restriction of Hazardous Substances
- **REACH:** Registration, Evaluation, Authorization and Restriction of Chemicals
- **Exemption:** The condition of not being subject to the requirement in the specification. Where compliant material is not readily available to meet the requirements of the intended application, Belkin authorizes limited exemptions as permitted by applicable law.
- **Homogeneous Material:** A material of uniform composition throughout or a material, consisting of a combination of materials, that cannot be disjointed, disaggregated, or separated into different materials by mechanical actions such as unscrewing, cutting, crushing, grinding, and abrasive processes. The definition is consistent with Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS 2).
- **Intentionally added:** Substance deliberately used in the formulation of a material or component, where the presence of the substance in the final product provides a specific characteristic, appearance, or quality.
- **ND:** Non-detect/Not detectable: Below the validated test method detection limit for a particular compound in a particular matrix.
- **ppm:** Parts per million by weight of a substance, equivalent to 1 mg/kg or 0.0001% by weight. For manufacturing process chemicals with breathing zone limits expressed in ppm, it refers to parts of vapor or gas per million parts of contaminated air by volume at 25°C and 1 atmosphere.
- **Waiver:** A temporary, conditional, and time-bound approved deviation to a Requirement.
- **EU:** European Union
- **EEE:** Electrical and Electronic Equipment
- **EIP:** Electronic Information Products

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- **EPUP:** Environmental Protective Use Period: Refers to the term during which the normal use of the toxic and hazardous substances or elements contained in electronic information products will not cause any leakage or sudden change so that the use of these will not result in any severe environmental pollution, bodily injury or damage to any assets.
- **MCV:** Maximum Concentration Value (Lead (Pb), Mercury (Hg), Hexavalent Chromium (Cr VI), Poly brominated flame retardants (PBB), Polybrominated Diphenyl Ethers (PBDE) < 0.10% = < 1,000PPM and Cadmium (Cd) < 0.01% = < 100 PPM)
- **SCIP:** is the database for information on **Substances of Concern** in articles as such or in complex objects (**Products**) established under the Waste Framework Directive (WFD). Companies supplying articles containing substances of very high concern (SVHCs) on the Candidate List in a concentration above 0.1% weight by weight (w/w) on the EU market have to submit information on these articles to ECHA, as from 5 January 2021. The SCIP database ensures that the information on articles containing Candidate List substances is available throughout the whole lifecycle of products and materials, including at the waste stage. The information in the database is then made available to waste operators and consumers.
- **Per- and Polyfluoroalkyl Substances (PFAS):** Any substance that contains at least one fully fluorinated methyl (CF<sub>3</sub>-) or methylene (-CF<sub>2</sub>-) carbon atom (without any H/Cl/Br/I attached to it).
- **Perfluorohexanoic acid (PFHxA),** its salts, and related substances - The definition of PFHxA is derived from the draft PFHxA REACH restriction. They are defined as having a linear or branched perfluoropentyl group with the formula C<sub>5</sub>F<sub>11</sub>- directly attached to another carbon atom or as having a linear or branched perfluorohexyl group with the formula C<sub>6</sub>F<sub>13</sub>-. PFHxA, as it is referenced in this document also includes its salts and related compounds as defined by the final opinion draft proposal to the European Commission. The following substances are excluded from this restriction:
  - (a) C<sub>6</sub>F<sub>14</sub>;
  - (b) C<sub>6</sub>F<sub>13</sub>-C(=O)OH, C<sub>6</sub>F<sub>13</sub>-C(=O)O-X' or C<sub>6</sub>F<sub>13</sub>-CF<sub>2</sub>-X' (where X' = any group, including salts).
  - (c) Any substance having a perfluoroalkyl group C<sub>6</sub>F<sub>13</sub>- directly attached to a sulphur atom.
  - (d) Any substance having a perfluoroalkyl group C<sub>6</sub>F<sub>13</sub> -directly attached to an oxygen atom at one of the non-terminal Carbons.

**Polymer (EU REACH Definition) - A polymer,** according to the EU REACH definition must meet the following

three criteria:

- Molecules must be distributed over a range of molecular weights
  - The weight percentage of molecules containing three monomer units or above should exceed 50%;
  - The weight percentage of any molecule of the same molecular weight shall not exceed 50%;
- sp Carbon - Carbon atom bonded to only 2 other atoms, one bond typically being a triple bond.

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sp<sup>2</sup> Carbon - Carbon atom bonded to only 3 other atoms, one bond typically being a double bonds.

sp<sup>3</sup> Carbon - Carbon atom bonded to 4 other atoms, typically all single bonds.

## 6. Material requirements

The restrictions and prohibitions specified in this standard apply to substances at the homogeneous material level, unless specified otherwise.

Chemical	CAS No.	Threshold	Scope	Examples	Reference
Arsenic	7440-38-2	1000 ppm total content	Metals	copper alloys	REACH 1907/2006 and amendments
Arsenic compounds	several		Exempt Semiconductor substrates and dopants	GaAs semiconductors	
Antimony and Antimony compounds	1309-64-4 7440-36-0 Several	1000 ppm total content	All materials	Flame retardant	California Proposition 65
Asbestos and compounds	1332-21-4 12001-28-4 12001-29-5 12172-73-5 77536-66-4 77536-67-5 77536-68-6 132207-32-0 Several	Non-use	All materials	Insulator, filler	REACH 1907/2006 and amendments
Azo dyes, Arylamines, Anilines	Table 1	30 ppm total content	All materials	Dye or colorant for plastics, textiles, leather	REACH 1907/2006 and amendments GB 18401-2010, China GB 20400-2006, China
Bisphenol A	80-05-7	1000 ppm total content	All other materials, unless preapproved by Belkin	Adhesives, plastics, epoxy resin	REACH 1907/2006 and amendments
		Non-use	Thermal paper	Thermal paper	REACH 1907/2006 and amendments
		3 µg/d	All materials	Adhesives, plastics, epoxy resin	California Proposition 65
Beryllium	7440-41-7	1000 ppm total content	All materials(Exempt ceramics in electronic components and electrical bonding applications of beryllium-copper, such as connectors, springs, or EMI gaskets.)	Metals, alloys, solder, and ceramic materials in connectors, stiffeners, AC inlets, springs, EMI finger/spring, transceivers, brackets, housing, buttons, and speaker wire.	US EPA 3050B US EPA 3052
Beryllium compounds	Several				
Brominated Flame Retardants	7726-95-6	900 ppm total content	All materials	Flame retardant, flux, solder paste	As specified Halogen/BFR/PVC-free
	Several	1500 ppm (Cl + Br) total content	All materials		
Cadmium	7440-43-9	20 ppm	Battery cells and packs	Nickel cadmium battery	2013/56/EU

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Cadmium compounds	Several	100ppm	All materials	Pigment stabilizer, copper alloys	RoHS 2011/65/EU GB/T 26572 Taiwan BSMI RoHS
Chlorine Chlorinated compounds	7782-50-5	900 ppm total content	All materials	Flame retardant, flux, solder paste	As specified Halogen/BFR/PVC-free
	Several	1500 ppm (Cl + Br) total content	All materials		
Chlorinated Paraffins, Short and Medium Chain (SCCPs and MCCPs)	85535-84-8 85535-85-9 Table 2	1000 ppm total content and Cl < 900 ppm	All materials	Paint, coating, sealant, flame retardant, textiles, lubricants	POPs REGULATION (EU) 2019/1021 REACH 1907/2006 and amendments
Chlorinated Hydrocarbons Compounds	79-01-6 127-18-4 Table 4	1000 ppm total content	All materials	cleaning agents and adhesives	US EPA
Dimethylfumarate (DMFu)	624-49-7	0.1 ppm	All materials	Biocide, desiccant pack	REACH 1907/2006 and amendments
DecaBDE	1163-19-5	Prohibited	materials except metals, glass, or ceramic	Flame retardant	TSCA POPs REGULATION (EU) 2019/1021 REACH 1907/2006 and amendments
Octamethylcyclotetrasiloxane (D4); Decamethylcyclopentasiloxane (D5)	541-02-6, 556-67-2	1000 ppm	cleaning agents, degreasers, demolder solutions	cleaning agents, degreasers, demolder solutions	REACH 1907/2006 and amendments
Formaldehyde	50-00-0	75 ppm	All materials	Wood, adhesives, plastics, coatings, textile materials intended for skin contact	Prop 65 Annex XVII to Regulation (EC) No 1907/2006
Fluorinated Greenhouse Gases	2251-62-4 table 6 & table 7 & table 8	Not used	All manufacturing process chemicals	Aerosols, Air Conditioning Equipment, Controlgear/Switchgear, Fire Protection Systems, Heat pumps, Refrigeration Equipment, Solvents	(EU) No 517/2014 (EU) 2015/2068 Montreal Protocol EC No. 2037/2000
Halogenated Diphenyl Methanes	76253-60-6, 81161-70-8, 99688-47-8	1000 ppm total content	All materials	Capacitor, transformer	REACH 1907/2006 and amendments
Hexabromocyclododecane (HBCDD)	25637-99-4, 3194-55-6, 134237-50-6, 134237-51-7, 134237-52-8	100 ppm total content	All materials	Flame retardant	POPs REGULATION (EU) 2019/1021 REACH 1907/2006 and amendments
Heavy Metals (Cd + Cr (VI) + Hg + Pb)	7440-43-9 18540-29-9 7439-97-6 7439-92-1	100 ppm combined total	Packaging	Packaging materials	94/62/EC
Hexavalent Chromium (Cr(VI), Cr6+)	18540-29-9 Several	1 ppm	All wearable products and accessories	Watch band materials including leather and textiles	REACH 1907/2006 ANNEX XVII Entry 72

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Hexavalent Chromium compounds		3 ppm	Leather in all other applications	Leather	REACH 1907/2006 ANNEX XVII Entry 47 Taiwan BSMI RoHS
		1000 ppm total content	All other materials	Metal coating, pigment	2011/65/EU GB/T 26572 Taiwan BSMI RoHS
Hexachlorobutadiene (HCBD)	87-68-3	Prohibited	All materials	Heat conducting fluid, solvent, Textile coatings, Hydraulic oil	TSCA PoPs REGULATION (EU) 2019/1021
Lead Lead compounds	7439-92-1 Several	40 ppm	Battery cells and packs	Lead-acid, Zn-Mn, alkaline batteries	2013/56/EU
		50 ppm	Plastics, inks, surface coatings, displays (including housing, wiring, and printed circuit board)	Paints, cable jacketing and insulation	CPSIA, 2008
		300 ppm	Polyvinyl Chloride (PVC) coating of external cables, wires and cords	Polyvinyl Chloride (PVC) coating of external cables, wires and cords	Proposition 65
		1000 ppm total content	All other materials except all exemptions in 2011/65/EU and its amendments	Solder, coatings, glass, steel, copper alloys, aluminum alloys	RoHS 2011/65/EU REACH 1907/2006 and amendments GB/T 26572 Taiwan BSMI RoHS
Mercury	7439-97-6	5 ppm	Battery cells and packs	Mercury oxide, zinc-manganese, alkaline manganese batteries	RoHS 2011/65/EU GB/T 26572 Taiwan BSMI RoHS
Mercury Compounds	Several	1000 ppm	All other materials	CCFL lamps, switches, dyes	
Methanol	67-56-1	Not used	cleaning agents, degreasers, and demolder solutions	cleaning agents, degreasers, and demolder solutions	REACH 1907/2006 and amendments
n-Hexane	110-54-3	1000 ppm	All materials	Paints, coatings, inks, adhesives, and primers manufactured by the material manufacturer and in the finished good	Proposition 65
Nickel and its compounds	7440-02-0 Several	0.28 µg/cm <sup>2</sup> /week leach rate	Parts with direct and prolonged skin contact	Metal alloys with nickel, plating material, anti-corrosive alloy (Measurement using EN 1811:2011+A1:2015, EN 1811:2011 A/C:2012))	REACH 1907/2006 and amendments
N,N-dimethylformamide	68-12-2	1000 ppm total content	All materials	Used as solvent for polyurethane, polyacrylonitrile and polyvinyl chloride	Prop 65 Annex XVII to Regulation (EC) No 1907/2006
N-Methylpyrrolidone (NMP)	872-50-4	Not used	cleaning agents, degreasers, demolder solutions	cleaning agents, degreasers, demolder solutions	Annex XVII to Regulation (EC) No 1907/2006

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Ozone Depleting Substances (ODS)	table 5	No intentional use	All manufacturing process chemicals	All manufacturing processes	Montreal Protocol EC No. 2037/2000 Taxable ODCs
Perchlorates	7601-89-0 7778-74-7 7790-98-9 7791-03-9 10034-81-8	0.1 ppm total content	All materials	Lithium perchlorate coin cell batteries	CA DTSC Perchlorate Contamination Prevention act (AB 826)
PFOA, its salts and PFOA-related compounds	335-67-1 Several	< 1 µg/m <sup>2</sup> coated area	Textiles and other coated materials	Surfactant, impregnation agent in textiles, Smudge-proof, oil-proof and water-proof material	POPs REGULATION (EU) 2019/1021 REACH 1907/2006 and amendments
		0.025 ppm for sum of PFOA and its salts 1 ppm for individual PFOA related substances	All other materials		
PFOS and its derivatives	1763-23-1 Several	≤ 1 µg/m <sup>2</sup> coated area	Textiles and other coated materials	Surfactant, impregnation agent in textiles, Smudge-proof, oil-proof and water-proof material	POPs REGULATION (EU) 2019/1021 REACH 1907/2006 and amendments
		10 ppm	Preparations		
		1000 ppm total content	All other materials		
PFHxS, its salts and related substances	355-46-4 Several	25 ppb for the sum of PFHxS and its salts 1000 ppb for the sum of PFHxS related substances	All materials	Protective and oleophobic coatings	POPs REGULATION (EU) 2019/1021
PFAS	9002-84-0 1763-23-1 24937-79-9 Several	25 ppb for the sum of PFHxS and its salts 1000 ppb for the sum of PFHxS related substances	All materials	Protective and oleophobic coatings	EU REACH PFAS Restriction (proposed)  EU REACH PFHxA Restriction (proposed)  U.S. State of Maine DEP PFAS Notification Requirement and General Market Restriction (law)
PFHxA, its salts and related substances	307-24-4 Several	25 ppb for the sum of PFHxA and its salts 1000 ppb for the sum of PFHxA related substances	All materials	Protective and oleophobic coatings	EU REACH PFAS Restriction (proposed) EU REACH PFHxA Restriction (proposed) U.S. State of Maine DEP PFAS Notification Requirement and General Market Restriction (law)
Phthalates	table 9	Detectable levels	All accessible soft plastic materials	Plasticizer	California Proposition 65
		1000 ppm total content	All materials		RoHS 2011/65/EU REACH 1907/2006 and amendments
Polycyclic Aromatic Hydrocarbons (PAHs)	table 10	0.5 ppm individually and 10 ppm for sum of total PAHs	Inks Otherwise, external materials only	Carbon black, plastics, dyes, combustion by-products	EC/1272/2013 REACH 1907/2006 and amendments

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Polybrominated Biphenyls (PBBs)	59536-65-1 table 3	1000 ppm and Br < 900 ppm	All materials	Flame retardants	RoHS 2011/65/EU GB/T 26572
Polybrominated Diphenyl Ethers (PBDEs)	1163-19-5 table 3	10 ppm individually and 500 ppm for sum of total PBDEs	All materials	Flame retardants	POPs REGULATION (EU) 2019/1021 RoHS 2011/65/EU GB/T 26572
Polychlorinated Biphenyl (PCBs)	1336-36-3 Several	Not present	All materials	Capacitor, transformer, heat transfer fluids, lubricants	POPs REGULATION (EU) 2019/1021 40 CFR 761.20
Polychlorinated Naphthalene (PCNs)	70776-03-3 Several	Not present	All materials	Lubricant, paint, cable insulation, wood preservatives, lubricants, electroplating masking compounds, feedstock for dye production, dye carriers, capacitor fluids, flame proofing, preservatives, moisture proofing sealant, temporary binders for ceramic component manufacturing, casting material for alloys	POPs REGULATION (EU) 2019/1021
Polychlorinated Terphenyl (PCTs)	61788-33-8 Several	non-use as a substance ;50 ppm total content	All materials	Capacitor, transformer, heat transfer fluids, lubricants,waste oils, or in equipment, in concentrations	REAcH 1907/2006 and amendments
Polyvinyl Chloride (PVC)	9002-86-2	900 ppm Cl	All materials	Electrical insulator, wire, tape, tubing, cable enclosure, vibration dampener, films	As specified
		1500 ppm (Cl + Br)			Halogen/BFR/PVC-free
		Not used	external case plastic parts of products or packaging (parts visible to the customer in normal product operation)exempt the sheathing of wires and cables, plastic parts weighing less than 25 grams, to fabrics, to protective product covers, or to display screens for projection.		Not used

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Phenol, isopropylated phosphate (3:1) (PIP (3:1))	68937-41-7	Prohibited	All Non-Metal materials	Plasticizer or Phosphate flame retardants in PVC, PU, PE, PP, PC / ABS, PPO / hips, PVAc, PS, fabric coating, circuit board, textile, phenolic resin, polyethylene, artificial leather, film, plate, conveyor belt, air duct, floor material, cable, synthetic resin, plastic, rubber and fiber, printed circuit board assembly, lubricating oil and hydraulic solution.	TSCA
Pentachloro thiophenol (PCTP)	133-49-3	10000 ppm	All Non-Metal materials	latex rubbers; Natural rubber, chloroprene rubber, acrylonitrile butadiene rubber, styrene butadiene rubber, butyl rubber and plasticizing accelerator	TSCA
PFAS Compounds PFCAs (C9-C14), their salts and related substances	2058-94-8, 307-55-1, 335-76-2, 375-95-1, 376-06-7, 72629-94-8 Table 11	0.025 ppm for the sum of C9-C14 PFCAs and their salts 260 ppb for the sum of C9-C14 PFCA-related substances	All materials	mixture	Annex XVII to Regulation (EC) No 1907/2006  echa.europa.eu/documents/10162/2ec5dfdd-0e63-0b49-d756-4dc1bae7ec61
Sub-Classes of PFAS (PFBS and related substances)	Compounds with the formula C <sub>4</sub> F <sub>9</sub> SO <sub>3</sub> H, their salts and any combinations thereof. This includes any substance having a perfluoroalkyl group (linear or branched) C <sub>4</sub> F <sub>9</sub> - directly attached to a sulfur atom.	1000 ppm total content	All materials	Glass coatings	REACH 1907/2006 and amendments

Sub-Classes of PFAS(PFHxA, its salts and related substances)	Compounds (including salts and polymers) having a linear or branched perfluoropentyl group with the formula C <sub>5</sub> F <sub>11</sub> directly attached to another carbon atom.	0.025 ppm for the sum of PFHxA and its salts 1 ppm for the sum of PFHxA related substances			
Tetrabromobis phenyl A (TBBA, TBBPA)	79-94-7	900 ppm Br	All materials	Flame retardant for electrical insulator, wire, tape, tubing, cable enclosure, vibration dampener	As specified Halogen/BFR/PVC-free
		1500 ppm (Cl + Br)			
Tributyltin (TBT) and triphenyltin (TPT) compounds, Tri butyl Tin Oxide (TBTO) and other Organic Tin Compounds	1461-25-2 56-35-9 Several Table 13	Not used	All materials	Stabilizer, plasticizer, polymerization catalyst	REACH 1907/2006 and amendments
Toluene	108-88-3	Not used	cleaning agents, degreasers, demolder solutions	cleaning agents, degreasers, demolder solutions	REACH 1907/2006 and amendments
2,4,6-Tri-tert-butylphenol(2,4,6-TTBP)	732-26-3	Not used	in lubricating oils	Fuel, lubricant	TSCA
Radioactive Substances	Table 14	Not present	All materials	Electrical sensor, phosphorescent ink	Japanese Laws for the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors, 1986
Xylene	1330-20-7	Detectable levels	solvent	solvent	US EPA
REACH Annex XVII	<a href="#">REACH Annex XVII list</a>	As applicable		REACH, Annex XVII	REACH 1907/2006 and amendments
REACH Candidate List of SVHCs	<a href="#">SVHC list</a>	1000 ppm		REACH, Candidate List	REACH 1907/2006 and amendments
POPs	<a href="#">POPs list</a>	Individual substance thresholds as per POPs		POPs list	Regulation (EU) 2019/1021
TSCA	<a href="#">TSCA list</a>	Individual substance thresholds as per the TSCA directive		TSCA list	

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RoHS exemptions	<a href="#">Exemption list</a>	Individual substance thresholds as per the RoHS directive		exemption list	
Proposition 65 list of chemicals	<a href="#">The Proposition 65 List</a>	Detectable levels		All materials	California Proposition 65
PFAS list	EPA <a href="#">(Environmental Protection Agency) PFAS Master List:</a>  OECD <a href="#">(Organization for Economic Co-operation and Development) Portal on Per and Polyfluoroalkyl Substances:</a>	Detectable levels		Protective and oleophobic coatings	EU REACH PFAS Restriction (proposed)  EU REACH PFHxA Restriction (proposed)  U.S. State of Maine DEP PFAS Notification Requirement and General Market Restriction (law)
BELKIN Approved RoHS Test Methods and IEC Global Standard RoHS Testing Methodologies	Table 12				

## 7. Supplier Verification

**Analytical Testing:** Where the measurement of materials content is made to verify compliance or is specifically requested by Belkin, the supplier will use Belkin approved test methodologies (see Test Methodologies, below) to perform the testing. Samples tested must be of a homogeneous material. Test reports must be no more than 2 years old from the date submitted to Belkin. Test reports must be from Belkin approved laboratories, which must be independently certified (e.g., ISO 17025). Internal XRF reports are not accepted. It is the supplier's responsibility to provide test reports at the supplier's expense.

**Test Methodologies:** Recognized, Belkin approved sample preparation, test standards, and quality control must be used. The Belkin approved test methods are listed in Table 12. The sample size and number of samples tested as third party lab required.

**Demonstrating Compliance:** Belkin conducts finished goods sample inspections to confirm products meet compliance standards. Belkin product testing is performed by third-party laboratories to validate supplier environmental compliance documents (including Full Material Declarations,

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component level test reports, and declarations) shared early in development. Belkin also validates the parts and materials by conducting in-house testing using machines such as a Fourier Transformed Infrared (FTIR) and an X-ray fluorescence (XRF) analyzer. The full analysis includes comparing environmental compliance data provided by suppliers, third-party test reports, and Belkin in-house validation tests. If third-party test reports and in-house validation tests are failed, suppliers are held accountable for any additional testing, providing 8D reporting, and creating a plan to eliminate the restricted substance.

- Supplier must collection all component level RoHS test reports from raw material manufacturer and fill all the information into Belkin format RoHS summary report (refer to: QF-00410\_A03\_RoHS Summary Table)
- RoHS Summary Table contains all the components in product BOM and Full material compositions
- RoHS tested items must be at the homogeneous level.
- RoHS test reports must be no more than 2 years old
- The component level RoHS test report should be from an internationally certified lab such as ISO 17025.
- All Belkin template declarations, composition and components test report should provide before project DVT sustainability validation testing, vendor have the responsibility to make sure the incoming materials and manufacturing are compliant with the SU plan required testing Items.
- REACH, Prop 65, TSCA, UN38.3 testing, magnetic testing, UAE, RUSSIA, SASO RoHS certification must be conducted at Belkin approved lab. (Refer to SUS plan SSD-00XXX)
- Internal IQC XRF test reports are not acceptable unless requested by Belkin Sustainability
- The most current revision of the test method must be used
- Test reports are provided at the supplier's expense
- All the materials with Surface coating needs to make sure the total F below 50 ppm, when product DVT samples validation testing total fluorine exceeds 50 mg/kg, the manufacturer, or downstream user shall upon request provide to the enforcement authorities a proof for the fluorine measured as content of either PFASs or non-PFASs. A PFAS substance list for the product can be provided. Any reformulation of an existing product must be retested and approved by Belkin sustainability.

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## 8. Tables:

Name	CAS* No
Biphenyl-4-amine	92-67-1
benzidine	92-87-5
4-chloro-o-toluidine	95-69-2
2-naphthylamine	91-59-8
o-aminoazotoluene	97-56-3
5-nitro-o-toluidine	99-55-8
4-chloroaniline	106-47-8
4-methoxy-m-phenylenediamine	615-05-4
4,4'-methylenedianiline	101-77-9
3,3'-dichlorobenzidine	91-94-1
3,3'-dimethoxybenzidine	119-90-4
3,3'-dimethylbenzidine	119-93-7
4,4'-methylenedi-o-toluidine	838-88-0
6-methoxy-m-toluidine	120-71-8
4,4'-methylene-bis(2-chloroaniline)	101-14-4
4,4'-oxydianiline	101-80-4
4,4'-thiodianiline	139-65-1
o-toluidine	95-53-4
4-methyl-m-phenylenediamine	95-80-7
2,4,5-trimethylaniline	137-17-7
o-anisidine	90-04-0
4-amino azobenzene	60-09-3
2,4-Xylidine	95-68-1
2,6-Xylidine	87-62-7

\*CAS = Chemical Abstract Service

Name	CAS* No.
Short-Chain Chlorinated Paraffins (SCCPs) $C_xH_{2x+2-y}Cl_y$ where $x=10-13$ and $y=1-13$ [4+ items]	Examples
Alkanes, C10-13, chloro	85535-84-8
Alkanes, C10-21, chloro	84082-38-2
Alkanes, C12-13, chloro	71011-12-6
Alkanes, C12-14, chloro	85536-22-7
Medium-Chain Chlorinated Paraffins (MCCPs) $C_xH_{2x+2-y}Cl_y$ , where $x=14-17$ and $y=1-17$ [1 item]	Example
Alkanes, C14-17, chloro	85535-85-9

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\*CAS = Chemical Abstract Service

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<b>Table 3: PBBs and PBDEs</b>	
<b>Name</b>	<b>CAS* No</b>
Bromobiphenyl	2052-07-5, 2113-57-7, 2-66-0
Bromobiphenyl Ether	101-55-3
Decabromobiphenyl	13654-09-06
Decabromobiphenyl Ether	1163-19-5
Dibromobiphenyl	92-86-4
Dibromobiphenyl Ether	2050-47-7
Heptabromobiphenyl	36355-01-8
Heptabromobiphenyl Ether	68928-80-3
Hexabromobiphenyl	59080-40-9, 36355-01-8, 67774-32-7
Hexabromobiphenyl Ether	36483-60-0
Nonabromobiphenyl	27753-52-2
Nonabromobiphenyl Ether	63936-56-1
Octabromobiphenyl	61288-13-9
Octabromobiphenyl Ether	32536-52-0
Pentabromobiphenyl	56307-79-0
Pentabromobiphenyl Ether	32534-81-9
Polybrominated Biphenyl	59536-65-1
Polybromobiphenyl(s), Polybromodiphenyl(s)	Chemical class; no CAS number assigned
Polybrominated Biphenyl Ether(s), Polybrominated Biphenyl Oxide(s)	Chemical class; no CAS number assigned
Tetrabromobiphenyl	40088-45-7
Tetrabromobiphenyl Ether	40088-47-9
Tribromobiphenyl	51202-79-0
Tribromobiphenyl Ether	49690-94-0

\*CAS = Chemical Abstract Service

Note: biphenyl is used interchangeably with diphenyl. Chemical classes do not have CAS numbers, but examples have been included when possible.

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<b>Table 4: Chlorinated Hydrocarbons</b>	
<b>Name</b>	<b>CAS* No</b>
1,1 Dichloroethylene	75-35-4
Pentachloroethane	76-01-7
Methylenechloride	75-09-2
Tetrochloromethane (Carbon Tetrachloride)	56-23-5
1,1,1,2 Tetrachloroethane	630-20-6
1,1,1,2 Tetrachloroethane	79-34-5
Tetrachloroethylene	127-18-4
Trichloromethane (Chloroform)	67-66-3
1,1,2 Trichloroethane	79-00-5
Trichloroethylene	79-01-6
1,1,1-Trichloroethane (TCA)	71-55-6
Bis (chloromethyl) ether	542-88-1
Pentachlorophenol	87-86-5
Polychlorinated Phenols and their salts	Chemical class; no CAS number assigned
Vinyl Chloride (monomer)	75-01-4

\*CAS = Chemical Abstract Service

Chemical classes do not have CAS numbers, but examples have been included when possible.

<b>Table 5: Ozone Depleting Substances and Isomers</b>	
<b>Name</b>	<b>CAS* No</b>
Trichlorofluoromethane	75-69-4
Dichlorodifluoromethane (CFC12)	75-71-8
Chlorotrifluoromethane (CFC 13)	75-72-9
Pentachlorofluoroethane (CFC 111)	354-56-3
fTetrachlorodifluoroethane (CFC 112)	76-12-0
Trichlorotrifluoroethane (CFC 113)	354-58-5
1,1,2 Trichloro-1,2,2 trifluoroethane	76-13-1
Dichlorotetrafluoroethane (CFC 114)	76-14-2
Monochloropentafluoroethane (CFC 115)	76-15-3
Heptachlorofluoropropane (CFC 211)	422-78-6, 422-81-1, 135401-87-5
Hexachlorodifluoropropane (CFC 212)	3182-26-1
Pentachlorotrifluoropropane (CFC 213)	2354-06-5 134237-31-3
Tetrachlorotetrafluoropropane (CFC 214)	29255-31-0
1,1,1,3-Tetrachlorotetrafluoropropane	2268-46-4
Trichloropentafluoropropane (CFC 215)	1599-41-3
1,1,1-Trichloropentafluoropropane	4259-43-2
1,2,3-Trichloropentafluoropropane	76-17-5
Dichlorohexafluoropropane (CFC 216)	661-97-2

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**Table 5: Ozone Depleting Substances and Isomers**

Name	CAS* No
Monochloroheptafluoropropane (CFC 217)	422-86-6, 76-18-6
Dibromodifluoromethane (Halon 1202)	75-61-6
Bromochlorodifluoromethane (Halon 1211)	353-59-3
Bromotrifluoromethane (Halon 1301)	75-63-8
Dibromotetrafluoroethane (Halon 2402)	124-73-2
Carbon Tetrachloride (Tetrachloromethane)	56-23-5
1,1,1-Trichloroethane (methyl chloroform) And its isomers except 1,1,2-trichloroethane	71-55-6
Bromomethane (Methy Bromide)	74-83-9
Bromoethane (ethyl bromide)	74-96-4
1-Bromopropane (n-propyl bromide)	106-94-5
Trifluoriodomethane (trifluoromethyl iodide)	2314-97-8
Chloromethane (methyl chloride)	74-87-3
Dibromofluoromethane	1868-53-7
Bromodifluoromethane	1511-62-2
Bromofluoromethane	373-52-4
Tetrabromofluoroethane	306-80-9
Tribromodifluoroethane	No CAS number assigned
Dibromotrifluoroethane	354-04-1
Bromotetrafluoroethane	124-72-1
Tribromofluoroethane	No CAS number assigned
Dibromodifluoroethane	75-82-1
Bromotrifluoroethane	421-06-7
Dibromofluoroethane	358-97-4
Bromodifluoroethane	420-47-3
Bromofluoroethane	762-49-2
Hexabromofluoropropane	No CAS number assigned
Pentabromodifluoropropane	No CAS number assigned
Tetrabromotrifluoropropane	No CAS number assigned
Tribromotetrafluoropropane	No CAS number assigned
Dibromopentafluoropropane	431-78-7
Bromohexafluoropropane	2252-78-0
Pentabromofluoropropane	No CAS number assigned
Tetrabromodifluoropropane	No CAS number assigned
Tribromotrifluoropropane	No CAS number assigned
Dibromotetrafluoropropane	No CAS number assigned
Bromopentafluoropropane	460-88-8
Tetrabromofluoropropane	No CAS number assigned
Tribromodifluoropropane	70192-80-2

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**Table 5: Ozone Depleting Substances and Isomers**

Name	CAS* No
Dibromotrifluoropropane	431-21-0
Bromoetrafluoropropane	679-84-5
Triromofluoropropane	75372-14-4
Dibromodifluoropropane	460-25-3
Bromotrifluoropropane	421-46-5
Dibromofluoropropane	51584-26-0
Bromodifluoropropane	No CAS number assigned
Bromofluoropropane	1871-72-3
Bromochloromethane	74-97-5
Sulfur hexafluoride	2551-62-4
These materials may contain isomers that are not listed here. Isomers with CAS numbers have been included when available.	

\*CAS = Chemical Abstract Service

**Table 6: Hydrochlorofluorocarbons and Isomers (Fluorinated Greenhouse Gases)**

Name	CAS* No
Dichlorofluoromethane (HCFC 21)	75-43-4
Chlorodifluoromethane (HCFC 22)	75-45-6
Chlorofluoromethane (HCFC 31)	593-70-4
Tetrachlorofluoroethane (HCFC 121)	134237-32-4
1,1,1,2-tetrachloro-2-fluoroethane (HCFC 121a)	354-11-0
1,1,2,2-tetrachloro-1-fluoroethane	354-14-3
Trichlorodifluoroethane (HCFC 122)	41834-16-6
1,2,2-trichloro-1,1-difluoroethane	354-21-2
Dichlorotrifluoroethane (HCFC 123)	34077-87-7
Dichlor-1,1,2-trifluoroethane	90454-18-5
1,1-dichloro-2,2,2-trifluoroethane	306-83-2
1,2-dichloro-1,1,2-trifluoroethane (HCFC 123a)	654-23-4
	812-04-4
Chlorotetrafluoroethane (HCFC 124)	63938-10-3
2-chloro-1,1,1,2-tetrafluoroethane	2837-89-0
1-chloro-1,1,2,2-tetrafluoroethane (HCFC 124a)	354-25-6
Trichlorofluoroethane (HCFC 131)	27154-33-2; (134237-34-6)
1-Fluor-1,2,2-trichloroethane	359-28-4
1,1,1-trichloro-2-fluoroethane (HCFC131b)	811-95-0
1-Chloro-1-fluoroethane (HCFC-151)	1615-75-4
Dichlorodifluoroethane (HCFC 132)	25915-78-0
1,2-dichloro-1,1-difluoroethane (HCFC 132b)	1649-08-7
1,1-dichloro-1,2-difluoroethane (HCFC 132c)	1842-05-3
1,1-dichloro-2,2-difluoroethane	147-43-2
1,2-dichloro-1,2-difluoroethane	431-06-1
Chlorotrifluoroethane (HCFC 133)	1330-45-6

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**Table 6: Hydrochlorofluorocarbons and Isomers (Fluorinated Greenhouse Gases)**

Name	CAS* No
1-chloro-1,2,2-trifluoroethane	1330-45-6
2-chloro-1,1,1-trifluoroethane (HCFC-133a)	75-88-7
Dichlorofluoroethane (HCFC 141)	25167-88-8
1,1-dichloro-1-fluoroethane (HCFC 141b)	1717-00-6
1,2-dichloro-1-fluoroethane	430-57-9
Chlorodifluoroethane (HCFC 142)	25497-29-4
1-chloro-1,1-difluoroethane (HCFC 142b)	75-68-3
1-chloro-1,2-difluoroethane (HCFC 143a)	25497-29-4
Hexachlorofluoropropane (HCFC 221)	134237-35-7
Pentachlorotrifluoropropane (HCFC 222)	134237-36-8
Tetrachlorotrifluoropropane (HCFC 223)	134237-37-9
Trichlorotetrafluoropropane (HCFC 224)	134237-38-0
Dichloropentafluoropropane (HCFC 225) 2,2-Dichloro-1,1,1,3-pentafluoropropane (HCFC 225aa) 2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC 225ba) 1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC 225bb) 3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC 225ca) 1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC 225cb) 1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC 225cc) 1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC 225da) 1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC 225ea) 1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC 225eb)	127564-92-5; 128903-21-9 422-48-0 422-44-6 422-56-0 507-55-1 13474-88-9 431-86-7 136013-79-1 111512-56-2
Chlorohexafluoropropane (HCFC 226)	134308-72-8
Pentachlorofluoropropane (HCFC 231)	134190-48-0
Tetrachlorodifluoropropane (HCFC 232)	134237-39-1
Trichlorotrifluoropropane (HCFC 233)	134237-40-4
1,1,1-Trichloro-3,3,3-trifluoropropane	7125-83-9
Dichlorotetrafluoropropane (HCFC 234)	127564-83-4
Chloropentafluoropropane (HCFC 235)	134237-41-5
1-Chloro-1,1,3,3,3-pentafluoropropane	460-92-4
Tetrachlorofluoropropane (HCFC 241)	134190-49-1
Trichlorodifluoropropane (HCFC 242)	134237-42-6
Dichlorotrifluoropropane (HCFC 243)	134237-43-7
1,1-dichloro-1,2,2-trifluoropropane	7125-99-7
2,3-dichloro-1,1,1-trifluoropropane	338-75-0
3,3-dichloro-1,1,1-trifluoropropane	460-69-5
Chlorotetrafluoropropane (HCFC 244)	134190-50-4
3-chloro-1,1,2,2-tetrafluoropropane	679-85-6
Trichlorofluoropropane (HCFC 251)	134190-51-5
1,1,3-trichloro-1-fluoropropane	818-99-5
Dichlorodifluoropropane (HCFC 252)	134190-52-6
Chlorotrifluoropropane (HCFC 253)	134237-44-8
3-chloro-1,1,1-trifluoropropane (HCFC 253fb)	460-35-5
Dichlorofluoropropane (HCFC 261)	134237-45-9
1,1-dichloro-1-fluoropropane	7799-56-6
Chlorodifluoropropane (HCFC 262)	134190-53-7
2-chloro-1,3-difluoropropane	102738-79-4

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**Table 6: Hydrochlorofluorocarbons and Isomers (Fluorinated Greenhouse Gases)**

Name	CAS* No
Chlorofluoropropane (HCFC 271) 2-chloro-2-fluoropropane	134190-54-8 420-44-0
These materials may contain isomers that are not listed here. Isomers with CAS numbers have been included when available.	

\*CAS = Chemical Abstract Service

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**Table 7: Hydrofluorocarbons (HFCs) (Fluorinated Greenhouse Gases)**

Name	CAS* No.
Trifluoromethane – (HCFC-23)	75-46-7
Difluoromethane – (HFC-32)	75-10-5
Methyl fluoride – (HFC-41)	593-53-3
2H,3H-Decafluoropentane – (HFC-43-10mee)	138495-42-8
Pentafluoroethane (HFC-125)	354-33-6
1,1,2,2-Tetrafluoroethane – (HFC-134)	359-35-3
1,1,1,2-Tetrafluoroethane – (HFC-134a)	811-97-2
1,1-Difluoroethane – (HFC-152a)	75-37-6
1,1,2-Trifluoroethane – (HFC-143)	430-66-0
1,1,1-Trifluoroethane – (HFC-143a)	420-46-2
2H-Heptafluoropropane – (HFC-227ea)	431-89-0
1,1,1,2,2,3-Hexafluoropropane (HFC-236cb)	677-56-5
1,1,1,2,3,3-Hexafluoropropane – (HFC-236ea)	431-63-0
1,1,1,3,3,3-Hexafluoropropane – (HFC-236fa)	690-39-1
1,1,2,2,3-Pentafluoropropane – (HFC-245ca)	679-86-7
1,1,1,3,3-Pentafluoropropane – (HFC-245fa)	460-73-1
1,1,1,3,3-Pentafluorobutane – (HFC-365mfc)	406-58-6

\*CAS = Chemical Abstract Service

**Table 8: Perfluorocarbons (PFCs)(Fluorinated Greenhouse Gases)**

Name	CAS* No.
Carbon tetrafluoride (perfluoromethane)	75-73-0
Perfluoroethane (Hexafluoroethane)	76-16-4
Perfluoropropane (Octafluoropropane)	76-19-7
Perfluorobutane (Decafluorobutane)	355-25-9
Perfluoropentane (Dodecafluoropentane)	678-26-2
Perfluorohexane (Tetradecafluorohexane)	355-42-0
Perfluorocyclobutane	115-25-3

\*CAS = Chemical Abstract Service

**Table 9: Phthalates**

Name	CAS* No.
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6

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1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate	68515-51-5 68648-93-1
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (DPP)	84777-06-0
Bis-(2-methoxyethyl) phthalate (DMEP)	117-82-8
Butylbenzyl phthalate (BBP)	85-68-7
Dibutyl phthalate (DBP)	84-74-2
Diethyl phthalate (DEP)	84-66-2
Diethylhexyl phthalate (DEHP)	117-81-7
Diisobutyl phthalate (DIBP)	84-69-5
Di-isodecyl phthalate (DIDP)	26761-40-0 68515-49-1
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0
Di-iso-pentyl phthalate (DIPP)	605-50-5
Dimethyl phthalate (DMP)	131-11-3
Di-n-hexyl phthalate (DnHP)	84-75-3
Di-n-Octyl phthalate (DNOP)	117-84-0
Di-n-pentyl phthalate (DnPP)	131-18-0
n-Pentyl-isopentyl phthalate (nPIPP)	776297-69-9
Diundecyl phthalate (DuDP)	3648-20-2
Dicyclohexyl phthalate (DCHP)	84-61-7
Diisohexyl phthalate (DiHP)	68515-50-4

\*CAS = Chemical Abstract Service

<b>Name</b>	<b>CAS* No.</b>
Acenaphthene	83-32-9
Acenaphthylene	208-96-8
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3; 1718-53-2
Benzo(a)phenanthrene (chrysene)	218-01-9
Benzo(a)pyrene	50-32-8
Benzo(b)fluoranthene	205-99-2
Benzo(e)pyrene	192-97-2
Benzo(g,h,i)perylene	191-24-2
Benzo(j)fluoranthene	205-82-3
Benzo(k)fluoranthene	207-08-9
Benzo(j,k)fluorene (Fluoranthene)	206-44-0; 93951-69-0
Benzo(r,s,t)pentaphene	189-55-9
Dibenz(a,h)acridine	226-36-8
Dibenz(a,j)acridine	224-42-0
Dibenzo(a,h)anthracene	53-70-3
Dibenzo(a,e)fluoranthene	5385-75-1
Dibenzo(a,e)pyrene	192-65-4
Dibenzo(a,h)pyrene	189-64-0
Dibenzo(a,l)pyrene	191-30-0
7H-Dibenzo(c,g)carbazole	194-59-2
Fluorene	86-73-7
Indeno(1,2,3-cd)pyrene	193-39-5

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5-Methylchrysene	3697-24-3
Naphthalene	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0; 1718-52-1

\*CAS = Chemical Abstract Service

Name	Chemical Group Definition and CAS* No.
PFAS compounds	Compounds containing at least one perfluoroalkyl moiety, $-C_nF_{2n-}$ . <b>Including but not limited to compounds on pages 45-78 in:</b> <a href="http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&amp;cote=env/jm/mono(2006)15">www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&amp;cote=env/jm/mono(2006)15</a>
Perfluorooctanoic Acid (PFOA), its salts and PFOA-related compounds	PFOA and its salts and compounds that degrade to PFOA, including any substances (including salts and polymers) having a linear or branched perfluoroheptyl group with the moiety $(C_7F_{15})C$ as one of the structural elements. <b>Including but not limited to compounds on pages 79-81 in:</b> <a href="http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&amp;cote=env/jm/mono(2006)15">www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&amp;cote=env/jm/mono(2006)15</a>
Perfluorooctane Sulfonate (PFOS) and its derivatives	Compounds with the formula $C_8F_{17}SO_3H$ , their salts and any combinations thereof. This includes any substance having a perfluoroalkyl group (linear or branched) $C_8F_{17}$ - directly attached to a sulfur atom. <b>Including but not limited to compounds on pages 24-44 in:</b> <a href="http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&amp;cote=env/jm/mono(2006)15">http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&amp;cote=env/jm/mono(2006)15</a>
Perfluorobutane Sulfonate (PFBS), its salts and related substances	Compounds with the formula $C_4F_9SO_3H$ , their salts and any combinations thereof. This includes any substance having a perfluoroalkyl group (linear or branched) $C_4F_9$ - directly attached to a sulfur atom. <b>Including but not limited to the list of compounds on pages 14, 15, 24, and 25 in:</b> <a href="http://www.miljodirektoratet.no/globalassets/publikasjoner/M759/M759.pdf">www.miljodirektoratet.no/globalassets/publikasjoner/M759/M759.pdf</a>
Perfluorocarboxylic Acids (PFCAs; C9-C14), their salts and related substances	Compounds that are perfluoroalkyl carboxylic acids (branched and/or linear) with the formula: $CF_3-(CF_2)_n-$ , $n=8-13$ as a structural element, including their salts. In addition, any related substance (including its salts and polymers) with the above defined linear and/or branched perfluoroalkyl structural elements that can degrade to C9-C14 PFCA. <b>Including but not limited to compounds listed on pages 31, 56, and 198-205 in:</b> <a href="http://echa.europa.eu/documents/10162/2ec5dfdd-0e63-0b49-d756-4dc1bae7ec61">echa.europa.eu/documents/10162/2ec5dfdd-0e63-0b49-d756-4dc1bae7ec61</a>
Perfluorohexanoic Acid (PFHxA), its salts and related substances	Compounds (including salts and polymers) having a linear or branched perfluoropentyl group with the formula $C_5F_{11}$ - directly attached to another carbon atom. <b>Including but not limited to compounds listed in:</b> <a href="http://echa.europa.eu/documents/10162/7da473c1-7f27-df34-9e6a-46152ef10d4b">echa.europa.eu/documents/10162/7da473c1-7f27-df34-9e6a-46152ef10d4b</a>
Perfluorohexane Sulfonate (PFHxS), its salts and related substances	Compounds with the formula $C_6F_{13}SO_3H$ , their salts and any combinations thereof. This includes any substance having a perfluoroalkyl group (linear or branched) $C_6F_{13}$ - directly attached to a sulfur atom. <b>Including but not limited to compounds listed on pages 168-192 in:</b> <a href="http://echa.europa.eu/documents/10162/a22da803-0749-81d8-bc6d-ef551fc24e19">echa.europa.eu/documents/10162/a22da803-0749-81d8-bc6d-ef551fc24e19</a>

\*CAS = Chemical Abstract Service

Substance	Polymer Materials	Metal Materials	Electronics (PWBs/Components)
PBB/PBDE	GC/MS	NA	GC/MS
Phthalates	GC/MS/IEC 62321	NA	GC/MS/IEC 62321
Cr VI	Alkaline Digestion / Colorimetric Method	Spot-test procedure / boiling-water-extraction procedure	Alkaline Digestion / Colorimetric Method

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	(Note: EPA 3060A is not an acceptable test method)
Hg	CV-AAS, AFS, ICP-OES ICP-MS
Pb/Cd	ICP-OES, ICP-MS, AAS (Note: Procedures vary for each material type, see IEC document above)

(Reference: IEC 62321, Ed. 1: Procedures for the determination of levels of six regulated substances (Lead, Mercury, Cadmium, Hexavalent Chromium, Polybrominated Biphenyls, Polybrominated Diphenyl Ethers) in electrotechnical products, available through <http://www.iec.ch>)

**Definitions and References for Table 12:**

AAS	Atomic Absorption Spectroscopy
AFS	Atomic Fluorescence Spectrometry
CV-AAS	Cold Vapor Atomic Absorption Spectrometry
GC/MS	Gas Chromatography/Mass Spectrometry
ICP-OES	Inductively Coupled Plasma Optical Emission Spectrometry
ICP-MS	Inductively Coupled Plasma-Mass Spectrometry
IEC	International Electrotechnical Commission, <a href="http://www.iec.ch/">http://www.iec.ch/</a>

**Table 13: Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO) and other Organotin compounds**

Name	CAS* No
Bis(tri-n-butyltin) oxide	56-35-9
Triphenyltin N,N <sup>1</sup> -dimethyldithiocarbamate	1803-12-9
Triphenyltin fluoride	379-52-2
Triphenyltin acetate	900-95-8
Triphenyltin chloride	639-58-7
Triphenyltin hydroxide	76-87-9
Triphenyltin fatty acid ((9-11)salt)	18380-71-7 18380-72-8 47672-31-1 94850-90-5
Triphenyltin chloroacetate	7094-94-2
Tributyltin methacrylate	2155-70-6
Bis(tributyltin) fumarate	6454-35-9
Tributyltin fluoride	1983-10-4
Bis(tributyltin) 2,3-dibromosuccinate	31732-71-5
Tributyltin acetate	56-36-0
Tributyltin laurate	3090-36-6
Bis(tributyltin) phthalate	4782-29-0
Copolymer of alkyl acrylate, methyl methacrylate and tributyltin methacrylate(alkyl; C=8)	67772-01-4
Tributyltin sulfamate	6517-25-5
Bis(tributyltin) maleate	14275-57-1
Tributyltin chloride	1461-22-9

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Mixture of tributyltin cyclopentanecarboxylate and its analogs (tributyltin naphthenate)	85409-17-2
Mixture of tributyltin 1,2,3,4,4a,5,6,10,10a-decahydro-7-isopropyl-1, 4a-demethyl-1-phenanthlenecarboxylate and its analogs (tributyltin rosin salt)	26239-64-5
Other Tributyl Tins & Triphenyl Tins	Chemical class; No CAS number assigned

\*CAS = Chemical Abstract Service

Chemical classes do not have CAS numbers, but examples have been included when possible.

These tables are taken from the Joint Industry Guide (JIG) and used with the permission of the Electronic Industries Alliance (EIA), [http://www.eia.org/new\\_policy/jig\\_download.phtml](http://www.eia.org/new_policy/jig_download.phtml).

<b>Table 14: Radioactive Substances (Radioactive Isotopes)</b>	
<b>Name</b>	<b>CAS* No</b>
Uranium	7440-61-1
Plutonium	7440-07-5
Radon	10043-92-2
Americium	7440-35-9
Thorium	7440-29-1
Cesium (Radioactive Isotopes only)	7440-46-2
Strontium (Radioactive Isotopes only)	7440-24-6

\*CAS = Chemical Abstract Service

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