

NXP Semiconductors List of Hazardous Substances in Products and Packaging

Products (materials, parts, (semi-)finished goods, subassemblies) and Packaging delivered to and used in NXP products must be free of "Hazardous Substances" at levels above our established threshold to ensure that no products from NXP put on the market contain any substances that are prohibited by law or other regulations. Declaration is mandatory on homogeneous material levels for all substances exceeding 100ppm (0.01%), or above the listed Threshold Limit Value (TLV), whichever is lower.

A: Prohibited Substances

Intentional use of following substances is prohibited. NXP accepts natural occurring amounts and/or amounts generated via synthesis which cannot be avoided and where removal is not feasible.

Substance Group	Prohibited applications for products and packaging	TLV ¹ ppm (mg/kg)
Aldehydes	All applications	0.1
Asbestos (all types)	All applications	10
Azo compounds (azocolourants and azodyes)	All applications	30
Benzene	All applications	5
Cadmium and its compounds (Cd)	All applications	5 ^{a)}
Carcinogens Mutagens & Reproductive Toxins (CMR's), cat. 1 and 2	All applications	1000 ^{b) c)}
Chlorinated hydrocarbons (CHC's)/Aliphatic CHC's	All applications	900
Chlorinated paraffins (CP's)	All applications	100
Chlorobenzenes, excl. Hexachlorobenzene	All applications	100
Endangered species of flora and fauna	All applications	Not used
Greenhouse gases	All applications	1 ^{d)}
Halogenated Dioxins and Furans	All applications	10 ppb
Halogenated - Diphenyl Methanes / - Benzyltoluenes	All applications	10
Hexachlorobenzene (HCB)	All applications	20 ppb
Hexavalent chromium compounds (Cr VI)	All applications	300 ^{a)}
Mercury and its compounds (Hg)	All applications	2 ^{a)}
Nitrides separating substances	All applications	1000
Nitrosamines	All applications	1000
Nonylphenols (NP's) & Nonylphenol Ethoxylates (NPE's)	All applications	50
Ozone Depleting Substances (ODS)	All applications	1
Pentachlorophenol (PCP) and its salts and esters	All applications	5
Perchlorates	All applications	900
Pesticides/herbicides/insecticides	All applications	1000 ^{b)}
Phthalates	All applications	1000
Polybrominated biphenyl (PBB's)	All applications	10
Polybrominated dibenzofurans (PBDF's)	All applications	900
Polybrominated diphenyl ethers (PBDE's)	All applications	500
Polychlorinated biphenyls (PCB's)	All applications	5
Polychlorinated dibenzofurans (PCDF's)	All applications	900
Polychlorinated naphthalenes (PCN's)	All applications	5
Polychlorinated terphenyls (PCT's)	All applications	5
Polycyclic aromatic compounds (PAC's)	All applications	1
Radioactive substances	All applications	Background radiation ^{e)}
Toxic glycol ethers	All applications	1000

¹ NXP considers substances below the natural occurrence levels and/or below the detection limit of current quantitative analytical methods as "0", "0 ppm", "not present" or "not detectable (n.d.)".

B: Restricted Substances

Intentional use of following substances is restricted. That is, NXP allows its intentional use only for specific applications. NXP accepts natural occurring amounts and/or amounts generated via synthesis which cannot be avoided and where removal is not feasible.

Substance Group	Restricted applications for products and packaging	TLV ¹ ppm (mg/kg)
Arsenic and its compounds (As)	All applications, except IC's (as dopant or GaAs based dies)	25 10 in packaging
Beryllium and its compounds (Be)	All applications, except ceramic headers and as dopant in Gold wires	1000
Expanded Polystyrene (EPS)	All applications, except EPS trays for present packaging of sound systems	Not used
Lead and its compounds (Pb)	All applications, except Lead exempted by EU Directive 2002/95/EC (RoHS), EU Directive 2000/53/EC (ELV) and their amendments	100 ^{a)} 20 in plastics
Mineral and ceramic fibers (excl. Asbestos)	All applications, except Glass Re-inforced Plastics (GRP's) in printing wiring boards and crystalline silica in mould compounds	10
Organic Tin compounds (Organostannic compounds)	All applications, except for tin plating purposes	5
Perfluoro Alkyl Sulfonates (PFAS) and derivatives	All applications, except in compound foils of membranes used in sound systems	50
Persistent, Bioaccumulative and Inherently Toxic Substances (PBIT's) and very Persistent and very Bioaccumulative Substances (vPvB's)	All applications, except as flame retardants in mould compounds and Lead according to EU Directive 2002/95/EC (RoHS) and EU Directive 2000/53/EC (ELV) and their amendments	1000 ^{b) c)}
Phenols (excl. PCP's, NP's and NPE's)	Only applications in direct and prolonged skin contact and laminates of printing wiring boards	50 ^{f)}
Polyvinylchloride (PVC) and PVC blends	All applications, except PVC tubes for IC packaging	900
Substances that may cause skin sensitization	Only applications in direct and prolonged skin contact and laminates of printing wiring boards	1000 ^{c) g)}
Tri-(2,3-dibromo-propyl)phosphate (TRIS)	Only applications in direct and prolonged skin contact and laminates of printing wiring boards	10
Tris(1-aziridinyl)phosphine oxide (TEPA)	Only applications in direct and prolonged skin contact and laminates of printing wiring boards	10

- a) Sum of Cadmium, Mercury, Chromium (VI) and Lead shall not exceed the limit of 80 ppm (0.008%) in packaging material.
 b) Certain hazardous substances have a Threshold Limit Value (TLV) below 1000 ppm (0.1%). See NXP Master List of Hazardous Substances for the individual TLV's of these substances.
 c) Cobaltdichloride in Humidity Indicator Cards (HIC's) is excluded if the HIC contains < 1% Cobalt dichloride (CoCl₂).
 d) Water is excluded.
 e) NXP defines background radiation as 0.2 µSv/hr and/or 50 Bq/g maximum.
 f) Including for phenol in laminates of printing wiring boards: phenol monomer < 50mg/l using test method ISO6439 and smell emission < 200 odor unit/m²/day using test method NEN-EN13725:2003.
 g) Including for nickel in surface preparations of products intended to come into direct and prolonged contact with the skin: Nickel ion release rate < 0.5 µg/cm²/week using test method EN1811:1999.

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