

Document		ID		Rev	BOMBARDIER	
Prohibited & Restricted Substances for Transportation Group		GRP-20.20.15-000014		1		
		Prepared	Sara Paulsson / CoC DfE			
		Approved	Michael Schemmer / Senior Director HSE			
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Prohibited Substances - substances that must not be used in any Bombardier product¹						
Complete Ban	Substance	CAS-number	Conditions of prohibition / application	Area / application substance may potentially be found in rail products ²	Reference ³	
	4-Nitrobiphenyl	92-93-3	All applications	In dyes for textile and leather. Stabilizer in rubber	Dir 76/769/EEC (89/677/EEC, 97/10/EC, 97/56/EC)	
	Aromatic amines and their salts: 2-Naphthylamine Benzidine 4-Aminobiphenyl	91-59-8 92-87-5 92-67-1	All applications	In dyes for textile and leather Stabilizer in rubber	Dir 76/769/EEC (89/677/EEC, 97/10/EC, 97/56/EC, 2003/3/EC)	
	Asbestos	1332-21-4	All applications	Insulating material and friction lining	Dir 76/769/EEC (83/478/EEC, 85/610/EEC, 1999/77/EC) CEPA Toxic	
	CFC - chlorofluorocarbons	Several	All applications	Aerosols, solvents, refrigerants, or foams	Reg EC/2307/2000, CEPA SOR/99-7, US Clean Air Act, CEPA Toxic	
	Halogenated benzyltoluenes: Monomethyl-dibromodiphenylmethane (Ugilec 121 or 21) Monomethyl-dichlorodiphenylmethane (Ugilec 141) Monomethyl-tetrachlorodiphenylmethane	99688-47-8 - 76253-60-6	All applications	PCB-substitute, dielectric fluid in condensers and transformers	Dir 76/769/EEC (91/339/EEC)	
	Halons - bromofluorochlorocarbons	Several	All applications	Fire extinguishers and protection system	Reg EC/2307/2000, CEPA SOR/99-7, US Clean Air Act, CEPA Toxic	
	HCFC - hydrochlorofluorocarbons (valid for Europe; restricted for all others)	Several	All applications	Aerosols, solvents, refrigerants, or foams		
	Nonylphenol	25154-52-3 84852-15-3	All applications	Surface-active agent, lubricating - oil additives, stabilizer and antioxidant for plastics and rubber	Dir 76/769/EEC (2003/53/EC), CEPA Toxic	
	Nonylphenol ethoxylate	9016-45-9	All applications	Surface-active agent		
	Octa brominated diphenylether (Octa-BDE)	Several	All applications	Flame retardant for plastic, textile and foam	Dir 76/769/EEC (2003/11/EC), Dir 2002/95/EC, Dir 2002/96/EC	
	PCP - pentachlorophenol and its salts and esters	87-86-5 131-52-2	All applications	In treatment of wood, tanning of leather, impregnation of fibre and textile	Dir 76/469/EEC (91/173/EEC, 1999/51/EC), CEPA SOR/2000-108	
	PCT - polychlorinated terphenyls	Several; e.g. 61788-33-8	All applications	Flame retardant for plastic. In transformers, capacitors, insulators and resistors. As softener in paint and plastic	Dir 76/769/EEC (85/467/EEC, 89/677/EEC), Dir 2002/96/EC, CEPA SOR/96-237, CEPA Toxic	
	Penta brominated diphenylethers (Penta-BDE)	Several	All applications	Flame retardant for plastic, textile and foam	Dir 76/769/EEC (2003/11/EC), Dir 2002/95/EC	
	Short Chained Chlorinated Paraffins (SCCP)	85535-84-8	All applications	Flame retardant in rubber, plasticizer, additive for paint, sealants, and coating systems, fat liquoring agent, leather finishing agent, textile impregnation	Dir 76/769/EEC (2002/45/EC), CEPA PSL 1	
	Wood, illegally harvested	None	All applications	In interior design, floors, or structural support	-	
	Specific Applications	Arsenic and its compounds	Several; As: 7440-38-2	Wood preservation (not CCA ⁴ type) Anti-fouling Water treatment	Refining agent in glass, alloying additive, paint, wood, railway sleepers	Dir 76/769/EEC (2003/2/EC, 97/10/EC), CEPA Toxic
		Cadmium and its compounds	Several; Cd: 7440-43-9	Plastics & paints (pigments or stabilizers) Surface Coatings (EU) Unrecyclable batteries	Surface treatment, electronic equipment, stabilizer and pigment, batteries and accumulators	Dir 76/769/EEC (91/338/EEC, 97/56/EC, 2004/34/EC), Dir 91/157/EEC (93/86/EEC, 98/101/EC), Dir 2000/53/EC (2002/525/EC), Dir 2002/95/EC, CEPA Toxic
		Lead and its compounds	Several; Pb: 7439-92-1	Paints (Lead carbonate and sulphates) Unrecyclable batteries	Ballast, paint / plastic pigment, plastic plasticizer, alloys, batteries, or electronic equipment (solder and CRT screens)	Dir 76/769/EEC (89/667/EEC, 97/10/EC, 97/56/EC), Dir 91/157/EEC (98/101/EC), Dir 2000/53/EC (2002/525/EC), Dir 2002/95/EC, CEPA Toxic
Mercury and its compounds		Several; Hg: 7439-97-6	Batteries and accumulators Wood preservation Textile impregnation Anti-fouling Water treatment	Batteries, wood, railway sleepers, textiles, paint, electronic equipment (inc. CRT and TFT screens), and fluorescent lamps	Dir 76/769/EEC (89/677/EEC), Dir 91/157/EEC (98/101/EC), Dir 2000/53/EC (2002/525/EC), Dir 2002/95/EC, CEPA Toxic	
PBB - polybrominated biphenyls		Several; e.g. 5936-65-1	Textile Articles EEE	Flame retardant for plastic, textile and foam. Often found in circuit boards	Dir 76/769/EEC (83/264/EEC), Dir 2002/95/EC, CEPA SOR/96-237, CEPA Toxic	
PCB - polychlorinated biphenyls		Several; e.g. 1336-36-3	All applications; Mono- and dichlorinated biphenyls excluded	Flame retardant for plastic. In transformers, capacitors, insulators and resistors. As softener in paint and plastic	Dir 76/769/EEC (85/467/EEC), Dir 2002/96/EC, CEPA SOR/91-152, CEPA Toxic	

This list is an Appendix to the Bombardier directive "Control of Prohibited & Restricted Substances", GRP-20.20.15-000013

- The supply of any substances or materials containing substances listed is prohibited. Certain specified exemptions exist (e.g. NiCd batteries) however all supply must be inventoried and approved by Bombardier.
- Information in the "area / application substances may potentially be found in rail products" does not indicate approval for use nor does it indicate legal prohibition.
- Legislation referenced in a) Complete Ban: requires Bombardier to not use /supply products containing these substances, and b) Specific Applications: requires Bombardier to not use /supply products containing these substances in at least one application. Compliance to this list does not absolve the supplier from any obligations they may have due to legislation.
- CCA = Chromated Copper Arsenate

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Restricted Substances - substances that should not be used in Bombardier products¹					
Legal Basis	Substance	CAS-number	Conditions of restriction / application	Area / application substance may potentially be found in rail products ²	Reference ³
	Fluorinated greenhouse gases: HFC (hydrofluorocarbons) PFC (perfluorocarbons) Sulphur hexafluoride (SF6)	Several Several 2551-62-4	All applications	Fire extinguishant, coolant, dielectric (gaseous electrical insulator), insulation gas in foams, tyres, windows	COM/2003/492, Dir 2003/87/EC, Kyoto Protocol
	Formaldehyde	50-00-0	All applications	In urea and melamine resins. In adhesive, paint, lacquer and textile	CEPA Toxic, KIFS 1998:8
	Isocyanates	Several	All applications; especially uncured form	In polyurethane, adhesive, paint and lacquer	National emission limit values
	Volatile Organic Compounds (VOC)	Several	All applications; Emission limit values to be considered	Thinners / constituents in paints, varnishes, solvents	Dir 1999/13/EC (2004/04/EC), CEPA Toxic, CEPA VOC Guidelines, CEPA Toxic
	Toluene	108-88-3	Adhesive Paint	Solvent carrier in paints, thinners, or adhesives	COM/2004/0320, CEPA PSL 1
	Trichlorobenzene (TCB)	120-82-1	All applications	Solvent, dye carrier and wood preservative	COM/2004/0320, CEPA PSL 1
Voluntary Commitment	Antimony trioxide	1309-64-4	All applications	Flame Retardant	-
	Beryllium and its compounds	Several; Be: 7440-41-7	All applications	In electronics and contacts. Often present in copper alloys	Dir 76/769/EEC (97/10/EC, 2003/36/EC), Dir 67/548/EEC (2001/59/EC)
	Chromium VI compounds	Several; Ion: 18540-29-9	All applications; especially when risk of contact with skin	Anti-corrosion surface treatment; pigment and anti-corrosion additive in paint, cement, plastic; alloying element; wood preservative; leather tanning agent	Dir 76/769/EEC (97/10/EC, 97/56/EC, 2003/53/EC), Dir 2000/53/EC (2002/525/EC), Dir 2002/95/EC, CEPA Toxic
	Cobalt chloride	7646-79-9	All applications	In desiccant, e.g. "silica gel"	Dir 76/769/EEC (97/10/EC, 2003/34/EC)
	Deca brominated diphenylether (Deca-BDE)	Several	All applications	Flame retardant for plastic, textile and foam	Dir 2002/95/EC
	Man Made Mineral Fibres (MMMF)	Several	MMMFs classified as carcinogens	Insulation, plastics	Dir 76/769/EEC (2001/41/EC)
	Medium Chained Chlorinated Paraffins (MCCP)	Several; 85535-85-9	All applications	Flame retardant / plasticizer in rubber, sealants, and adhesives; plasticizer in plastics and paints; metal working fluid	CEPA PSL 1
	Nickel	7440-02-0	Surface coatings; especially when risk of contact with skin	Surface treatment, alloy, batteries	Dir 76/769/EEC (94/27/EC, 97/10/EC, 97/56/EC), Dir 67/548/EEC (2001/59/EC), CEPA Toxic
	Perchlorethylene	127-18-4	All applications	Solvent, metal degreasing, jointing compound, lubricant	CEPA Toxic
	Phthalates, especially: Butyl benzyl phthalate (BBP) Dibutyl phthalate (DBP) Di-(2-ethylhexyl) phthalate (DEHP) Diisononyl phthalate (DINP) Diisodecyl phthalate (DIDP) Di-n-oktyl phthalate (DNOP) Diisobutyl phthalate Dimethyl phthalate	85-68-7 84-74-2 117-81-7 28533-12-0 26761-40-0 117-84-0 84-69-5 131-11-3	All applications; Particularly interior plastic details	Plasticizers and hardeners In PVC, adhesive and paint	Dir 76/769/EEC (97/10/EC, 1999/43/EC, 2003/36/EC), Dec 1999/815/EC (2004/781/EC), CEPA Toxic
	Polycyclic Aromatic Hydrocarbons (PAH)	Several	All applications	Base oils and lubricants	Dir 76/769/EEC (97/10/EC, 97/56/EC), CEPA Toxic
	Polyvinylchloride (PVC)	9002-86-2	All applications	Plastic details	-
	Talc (Talcum)	14807-96-6	All applications; powder form	On rubberised products, additive in plastics	-
	Thiram (TMTD)	137-26-8	All applications	In paint, vulcanizing agent for rubber, lube-oil additive	Dir 91/414/EEC (2003/81/EC), Rotterdam PIC substance
	Tin-organic compounds	Several; Sn: 7440-31-5	All applications	Stabiliser for plastics	Dir 76/769/EEC (2002/62/EC), CEPA PSL 1
	Triphenyl phosphate (TPP)	115-86-6	All applications	Flame retardant, plasticizer and antioxidant	-
	Tris (2,3-dibromopropyl) phosphate	126-72-7	Textile articles, intended to come into contact with the skin	Flame retardant for plastic, rubber, foam, textile, coating, paint and lacquer	Dir 76/769/EEC (79/663/EEC)
	Tris (1-aziridinyl) phosphine oxide	545-55-1	Textile articles, intended to come into contact with the skin	Flame retardant for cotton. Agent in textile dyeing and for polymer stabilization	Dir 76/769/EEC (83/264/EEC)
	Wood, unsustainably forested	None	All applications; Wood to be certified ⁴	In interior design, floors, or structural support	-

This list is an Appendix to the Bombardier directive "Control of Prohibited & Restricted Substances", GRP-20.20.15-000013

- The supply of any substances or materials containing substances listed is Restricted. All supply must be inventoried and approved by Bombardier.
- Information in the "area / application substances may potentially be found in rail products" does not indicate approval for use nor does it indicate legal prohibition or restriction.
- Legislation referenced in a) Legal Basis: requires Bombardier to restrict the use or emissions of these substances, or indicates upcoming / proposed legislation, and b) Voluntary Commitment: indicates legislation that is legally applicable to other (competitor) industries. Compliance to this list does not absolve the supplier from any obligations they may have due to legislation.
- Accepted forestry certifications are defined by Bombardier. In the absence of a certificate, the appropriate evidence of sustainable forestry may be submitted instead.