

ANNEX I

Minimum technical requirements for treatment in accordance with Article 6(1) and (3)

1. Sites for storage (including temporary storage) of end-of-life vehicles prior to their treatment:
 - impermeable surfaces for appropriate areas with the provision of spillage collection facilities, decanters and cleanser-degreasers,
 - equipment for the treatment of water, including rainwater, in compliance with health and environmental regulations.
2. Sites for treatment:
 - impermeable surfaces for appropriate areas with the provision of spillage collection facilities, decanters and cleanser-degreasers,
 - appropriate storage for dismantled spare parts, including impermeable storage for oil-contaminated spare parts,
 - appropriate containers for storage of batteries (with electrolyte neutralisation on site or elsewhere), filters and PCB/PCT-containing condensers,
 - appropriate storage tanks for the segregated storage of end-of-life vehicle fluids: fuel, motor oil, gearbox oil, transmission oil, hydraulic oil, cooling liquids, antifreeze, brake fluids, battery acids, air-conditioning system fluids and any other fluid contained in the end-of-life vehicle,
 - equipment for the treatment of water, including rainwater, in compliance with health and environmental regulations,
 - appropriate storage for used tyres, including the prevention of fire hazards and excessive stockpiling.
3. Treatment operations for depollution of end-of-life vehicles:
 - removal of batteries and liquified gas tanks,
 - removal or neutralisation of potential explosive components, (e.g. air bags),
 - removal and separate collection and storage of fuel, motor oil, transmission oil, gearbox oil, hydraulic oil, cooling liquids, antifreeze, brake fluids, air-conditioning system fluids and any other fluid contained in the end-of-life vehicle, unless they are necessary for the re-use of the parts concerned,
 - removal, as far as feasible, of all components identified as containing mercury.
4. Treatment operations in order to promote recycling:
 - removal or catalysts,
 - removal of metal components containing copper, aluminium and magnesium if these metals are not segregated in the shredding process,
 - removal of tyres and large plastic components (bumpers, dashboard, fluid containers, etc), if these materials are not segregated in the shredding process in such a way that they can be effectively recycled as materials,
 - removal of glass.
5. Storage operations are to be carried out avoiding damage to components containing fluids or to recoverable components and spare parts.

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[^{F1}ANNEX II

Textual Amendments

- F1** Substituted by [Commission Directive 2013/28/EU of 17 May 2013 amending Annex II to Directive 2000/53/EC of the European Parliament and of the Council on end-of-life vehicles \(Text with EEA relevance\)](#).

MATERIALS AND COMPONENTS EXEMPT FROM ARTICLE 4(2)(A)

Materials and components	Scope and expiry date of the exemption	To be labelled or made identifiable in accordance with Article 4(2)(b)(iv)
<i>Lead as an alloying element</i>		
1(a) Steel for machining purposes and batch hot dip galvanised steel components containing up to 0,35 % lead by weight		
1(b) Continuously galvanised steel sheet containing up to 0,35 % lead by weight	Vehicles type approved before 1 January 2016 and spare parts for these vehicles	
2(a) Aluminium for machining purposes with a lead content up to 2 % by weight	As spare parts for vehicles put on the market before 1 July 2005	
2(b) Aluminium with a lead content up to 1,5 % by weight	As spare parts for vehicles put on the market before 1 July 2008	
2(c) Aluminium with a lead content up to 0,4 % by weight	^a	
3. Copper alloy containing up to 4 % lead by weight	^a	
4(a) Bearing shells and bushes	As spare parts for vehicles put on the market before 1 July 2008	

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4(b)	Bearing shells and bushes in engines, transmissions and air conditioning compressors	1 July 2011 and spare parts for vehicles put on the market before 1 July 2011	
<i>Lead and lead compounds in components</i>			
5.	Batteries	^a	X
6.	Vibration dampers	Vehicles type approved before 1 January 2016 and spare parts for these vehicles	X
7(a)	Vulcanising agents and stabilisers for elastomers in brake hoses, fuel hoses, air ventilation hoses, elastomer/metal parts in the chassis applications, and engine mountings	As spare parts for vehicles put on the market before 1 July 2005	
7(b)	Vulcanising agents and stabilisers for elastomers in brake hoses, fuel hoses, air ventilation hoses, elastomer/metal parts in the chassis applications, and engine mountings containing up to 0,5 % lead by weight	As spare parts for vehicles put on the market before 1 July 2006	
7(c)	Bonding agents for elastomers in powertrain applications containing up to 0,5 % lead by weight	As spare parts for vehicles put on the market before 1 July 2009	
8(a)	Lead in solders to attach electrical and electronic components to electronic circuit boards and lead in finishes on	Vehicles type approved before 1 January 2016 and spare parts for these vehicles	X ^b

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	terminations of components other than electrolyte aluminium capacitors, on component pins and on electronic circuit boards		
8(b)	Lead in solders in electrical applications other than soldering on electronic circuit boards or on glass	Vehicles type approved before 1 January 2011 and spare parts for these vehicles	X ^b
8(c)	Lead in finishes on terminals of electrolyte aluminium capacitors	Vehicles type approved before 1 January 2013 and spare parts for these vehicles	X ^b
8(d)	Lead used in soldering on glass in mass airflow sensors	Vehicles type approved before 1 January 2015 and spare parts of such vehicles	X ^b
8(e)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	^c	X ^b
8(f)	Lead in compliant pin connector systems	^c	X ^b
8(g)	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	^c	X ^b
8(h)	Lead in solder to attach heat spreaders to the	^c	X ^b

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	heat sink in power semiconductor assemblies with a chip size of at least 1 cm ² of projection area and a nominal current density of at least 1 A/mm ² of silicon chip area		
8(i)	Lead in solders in electrical glazing applications on glass except for soldering in laminated glazing	Vehicles type approved before 1 January 2016 and after that date as spare parts for these vehicles	X ^b
8(j)	Lead in solders for soldering in laminated glazing	^c	X ^b
9.	Valve seats	As spare parts for engine types developed before 1 July 2003	
10(a)	Electrical and electronic components which contain lead in a glass or ceramic, in a glass or ceramic matrix compound, in a glass-ceramic material, or in a glass-ceramic matrix compound. This exemption does not cover the use of lead in: — glass in bulbs and glaze of spark plugs, — dielectric ceramic materials of components listed under 10(b), 10(c) and 10(d)		X ^d (for components other than piezo in engines)
10(b)	Lead in PZT based dielectric ceramic materials of capacitors being part of integrated		

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	circuits or discrete semiconductors		
10(c)	Lead in dielectric ceramic materials of capacitors with a rated voltage of less than 125 V AC or 250 V DC	Vehicles type approved before 1 January 2016 and spare parts for these vehicles	
10(d)	Lead in the dielectric ceramic materials of capacitors compensating the temperature-related deviations of sensors in ultrasonic sonar systems	^c	
11.	Pyrotechnic initiators	Vehicles type approved before 1 July 2006 and spare parts for these vehicles	
12.	Lead-containing thermoelectric materials in automotive electrical applications to reduce CO ₂ emissions by recuperation of exhaust heat	Vehicles type approved before 1 January 2019 and spare parts for these vehicles	X
Hexavalent chromium			
13(a)	Corrosion preventive coatings	As spare parts for vehicles put on the market before 1 July 2007	
13(b)	Corrosion preventive coatings related to bolt and nut assemblies for chassis applications	As spare parts for vehicles put on the market before 1 July 2008	
14.	As an anti-corrosion agent of the carbon steel cooling system in absorption refrigerators in motorcaravans up to		X

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	0,75 weight -% in the cooling solution except where the use of other cooling technologies is practicable (i.e. available on the market for the application in motor caravans) and does not lead to negative environmental, health and/or consumer safety impacts		
Mercury			
15(a)	Discharge lamps for headlight application	Vehicles type approved before 1 July 2012 and spare parts for these vehicles	X
15(b)	Fluorescent tubes used in instrument panel displays	Vehicles type approved before 1 July 2012 and spare parts for these vehicles	X
Cadmium			
16.	Batteries for electrical vehicles	As spare parts for vehicles put on the market before 31 December 2008	
a	This exemption shall be reviewed in 2015.		
b	Dismantling if, in correlation with entry 10(a), an average threshold of 60 grams per vehicle is exceeded. For the application of this clause electronic devices not installed by the manufacturer on the production line shall not be taken into account.		
c	This exemption shall be reviewed in 2014.		
d	Dismantling if, in correlation with entries 8(a) to 8(j), an average threshold of 60 grams per vehicle is exceeded. For the application of this clause electronic devices not installed by the manufacturer on the production line shall not be taken into account.		
e	This clause shall not apply to wheel balance weights, carbon brushes for electric motors and brake linings.		
Notes:			
—A maximum concentration value up to 0,1 % by weight and in homogeneous material, for lead, hexavalent chromium and mercury and up to 0,01 % by weight in homogeneous material for cadmium shall be tolerated.			
—The re-use of parts of vehicles which were already on the market at the date of expiry of an exemption shall be allowed without limitation since it is not covered by Article 4(2)(a).			
—Spare parts put on the market after 1 July 2003 which are used for vehicles put on the market before 1 July 2003 shall be exempted from the provisions of Article 4(2)(a) ^e .]			