

## Appendix B

### RoHS Substances and Exemptions List

The EU RoHS Directive continues to be updated over time. As these changes are made, the most current exemption list will be added within the 1752A in a reasonable amount of time. Revision control will be based on the EU Directive document number. Declarations for products that have been previously declared will only be relative to the current EU Exemptions when the data was provided.

On 24 September 2010 the European Commission published Commission Decision 2010/571/EU which **replaced** all previous RoHS exemptions lists. This represents a significant departure from previous Commission Decisions. Prior to September 2010, when the Commission published a Decision on the RoHS exemptions list then (apart from a few well publicized exceptions such as exemptions 9a, 22, 28 and 35) the Decision added new exemptions to the existing list.

Commission Decision 2010/571/EU applies to all equipment which is placed on the EU market for the first time after 24 September 2010, and implemented a major revision to the list of allowed RoHS exemptions: 13 exemptions were deleted; there were significant changes to the wording to 2 exemptions, and 38 new exemptions were introduced.

Commission Decision 2010/571/EU also includes expiry dates for certain exemptions. The list of valid RoHS exemptions will change every 6 months as certain exemptions reach their expiry date. For example, some RoHS exemptions in the 2010/571/EU list expired in January 2011, some exemptions expire in June 2011, more exemptions expire in December 2011, and so on. The list of valid RoHS exemptions has now become a moving target and companies need to continually review which exemptions are still valid for parts which are used to manufacture new products for sale in the EU.

Table B5 provides the RoHS exemptions which are included in Commission Decision 2010/571/EU, and their expiry dates. Exemptions which have already expired (as at February 2011) are shown in **bold type** in Table B5. Note that the RoHS Recast sets an expiry date of Q2 2016 for all other exemptions listed in Table B5. However, industry can apply for an exemption to be reviewed and extended on a case-by-case basis. An application to renew an exemption must be submitted to the Commission no later than 18 months before the exemption is due to expire.

Table B6 contains the list of RoHS exemptions that were valid before 24 September 2010, and their expiry dates where applicable. These exemptions can be used for spare parts which are used to repair or refurbish items of equipment that had already been placed on the EU market before 24 September 2010, or before the expiry date of the exemption where applicable. A component which relies on an exemption for RoHS compliance may require two separate declarations – one declaration for use in new equipment put on the market after 24 September 2010 which references the RoHS exemptions in Table B5, and a second declaration for use as a spare part to repair or refurbish equipment that had already been placed on the market before 24 September 2010 which references the RoHS exemptions in Table B6.

Note: The German translation of Commission Decision 2010/571/EU adopts a slightly different numbering system (for example, in the German translation the exemption number 2(a)(3) is referred to as 2a. III). However, Commission Decision is EU law which applies equally in all Member States. Therefore, the numbering in Commission Decision 2010/571/EU can be used in all Member States.

#### RoHS Substances

Unique ID Authority == IPC

Unique ID == EUROHS-0508

| Substance Category Name                | Threshold   |
|--|---|
| Cadmium/cadmium compounds              | 0.01% by weight (100 ppm) of homogeneous materials  |
| Polybrominated biphenyls (PBBs)        | 0.1% by weight (1 000 ppm) of homogeneous materials |
| Polybrominated diphenyl ethers (PBDEs) | 0.1% by weight (1 000 ppm) of homogeneous materials |
| Chromium VI compounds                  | 0.1% by weight (1 000 ppm) of homogeneous materials |
| Lead/lead compounds                    | 0.1% by weight (1 000 ppm) of homogeneous materials |
| Mercury/mercury compounds              | 0.1% by weight (1 000 ppm) of homogeneous materials |

## B5 RoHS exemptions listed in Commission Decision 2010/571/EU published 24 September 2010

Unique ID Authority == IPC

Unique ID == EL2010/571/EU

| Identity | Description   | Expiry date  |
|----------|---|--|
| 1(a)     | Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):For general lighting purposes less than 30 W: 5 mg  | Expires on 31 December 2011; 3.5 mg may be used per burner after 31 December 2011 until 31 December 2012; 2.5 mg shall be used per burner after 31 December 2012 |
| 1(b)     | Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):For general lighting purposes greater than or equal to 30 W and less than 50 W; 5 mg  | Expires on 31 December 2011; 3.5 mg may be used per burner after 31 December 2011  |
| 1(c)     | Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):For general lighting purposes greater than or equal to 50 W and less than 150 W; 5 mg   |  |
| 1(d)     | Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):For general lighting purposes greater than or equal to 150 W; 15 mg   |  |
| 1(e)     | Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):For general lighting purposes with circular or square structural shape and tube diameter less than or equal to 17 mm  | No limitation of use until 31 December 2011; 7 mg may be used per burner after 31 December 2011  |
| 1(f)     | Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):For special purposes: 5 mg  |  |
| 2(a)(1)  | Mercury in double-capped linear fluorescent lamps for generation lighting purposes not exceeding (per lamp):Tri-band phosphor with normal lifetime and a tube diameter less than 9 mm (e.g. T2): 5mg  | Expires on 31 December 2011; 4 mg may be used per lamp after 31 December 2011  |
| 2(a)(2)  | Mercury in double-capped linear fluorescent lamps for generation lighting purposes not exceeding (per lamp):Tri-band phosphor with normal lifetime and a tube diameter greater than or equal to 9 mm and less than or equal to 17 mm (e.g. T5): 5mg | Expires on 31 December 2011; 3 mg may be used per lamp after 31 December 2011  |
| 2(a)(3)  | Mercury in double-capped linear fluorescent lamps for generation lighting purposes not exceeding (per lamp):Tri-band phosphor with normal lifetime and a tube diameter greater than 17 mm and less than or equal to 28 mm (e.g. T8): 5mg            | Expires on 31 December 2011; 3.5 mg may be used per lamp after 31 December 2011  |
| 2(a)(4)  | Mercury in double-capped linear fluorescent lamps for generation lighting purposes not exceeding (per lamp):Tri-band phosphor with normal lifetime and a tube diameter greater than 28 mm (e.g. T12): 5 mg  | Expires on 31 December 2012; 3.5 mg may be used per lamp after 31 December 2012  |
| 2(a)(5)  | Mercury in double-capped linear fluorescent lamps for generation lighting purposes not exceeding (per lamp):Tri-band phosphor with long lifetime (greater than or equal to 25,000 h): 8 mg  | Expires on 31 December 2011; 5 mg may be used per lamp after 31 December 2011  |
| 2(b)(1)  | Mercury in other fluorescent lamps not exceeding (per lamp):Linear halophosphate lamps with tube greater than 28 mm (e.g. T10 and T12): 10 mg   | Expires on 13 April 2012   |
| 2(b)(2)  | Mercury in other fluorescent lamps not exceeding (per lamp):Non-linear halophosphate lamps (all diameters): 15 mg   | Expires on 13 April 2016   |
| 2(b)(3)  | Mercury in other fluorescent lamps not exceeding (per lamp):Non-linear tri-band phosphor lamps with tube diameter greater than 17 mm (e.g. T9)  | No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011   |
| 2(b)(4)  | Mercury in other fluorescent lamps not exceeding (per lamp):Lamps for other general lighting and special purposes (e.g. induction lamps)  | No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011   |
| 3(a)     | Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp): Short length (less than or equal to 500 mm)   | No limitation of use until 31 December 2011; 3.5 mg may be used per lamp after 31 December 2011  |
| 3(b)     | Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp): Medium length (greater than 500 mm and less than or equal to 1,500 mm)                            | No limitation of use until 31 December 2011; 5 mg may be used per lamp after 31 December 2011  |
| 3(c)     | Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp): Long length (greater than 1,500 mm)   | No limitation of use until 31 December 2011; 13 mg may be used per lamp after 31 December 2011   |
| 4(a)     | Mercury in other low pressure discharge lamps (per lamp)  | No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011   |
| 4(b)-I   | Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra greater than 60: P less than or equal to 155 W   | No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011   |
| 4(b)-II  | Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra greater than 60: P greater than 155 W and less than or equal to 405 W                      | No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011   |
| 4(b)-III | Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra  | No limitation of use until 31 December 2011; 40 mg may be used per burner after 31   |

|          |   |  |
|----------|---|--|
|          | greater than 60: P greater than 405 W   | December 2011  |
| 4(c)-I   | Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner): P less than or equal to 155 W  | No limitation of use until 31 December 2011; 25 mg may be used per burner after 31 December 2011 |
| 4(c)-II  | Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner): P greater than 155 W and less than or equal to 405 W   | No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011 |
| 4(c)-III | Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner): P greater than 405 W   | No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011 |
| 4(d)     | Mercury in High Pressure Mercury (vapour) lamps (HPMV)  | Expires on 13 April 2015   |
| 4(e)     | Mercury in metal halide lamps (MH)  |  |
| 4(f)     | Mercury in other discharge lamps for special purposes not specially mentioned in this Annex   |  |
| 5(a)     | Lead in glass of cathode ray tubes  |  |
| 5(b)     | Lead in glass of fluorescent tubes not exceeding 0.2% by weight   |  |
| 6(a)     | Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight   |  |
| 6(b)     | Lead as an alloying element in aluminium containing up to 0.4% lead by weight   |  |
| 6(c)     | Copper alloy containing up to 4% lead by weight   |  |
| 7(a)     | Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead)  |  |
| 7(b)     | Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications   |  |
| 7(c)-I   | Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound  |  |
| 7(c)-II  | Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher  |  |
| 7(c)-III | Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC  | Expires on 1 January 2013  |
| 8(a)     | Cadmium and its compounds in one shot pellet type thermal cut-offs  | Expires on 1 January 2012  |
| 8(b)     | Cadmium and its compounds in electrical contacts  |  |
| 9        | Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0.75% by weight in the cooling solution  |  |
| 9(b)     | Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications  |  |
| 11(a)    | <b>Lead used in C-press compliant pin connector systems</b>   | <b>Expired 24 September 2010</b>   |
| 11(b)    | Lead used in other than C-press compliant pin connector systems   | Expires on 1 January 2013  |
| 12       | <b>Lead as a coating material for the thermal conduction module C-ring</b>  | <b>Expired 24 September 2010</b>   |
| 13(a)    | Lead in white glasses used for optical applications   |  |
| 13(b)    | Cadmium and lead in filter glasses and glasses used for reflectance standards   |  |
| 14       | <b>Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight</b>   | <b>Expired on 1 January 2011</b>   |
| 15       | Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages   |  |
| 16       | Lead in linear incandescent lamps with silicate coated tubes  | Expires on 1 September 2013  |
| 17       | Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications   |  |
| 18(a)    | <b>Lead as activator in the fluorescent powder (1% lead by weight or less) of discharge lamps when used as specialty lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ((Sr,Ba)2MgSi2O7:Pb)</b> | <b>Expired on 1 January 2011</b>   |
| 18(b)    | Lead as activator in the fluorescent powder (1% lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi2O5:Pb)   |  |
| 19       | Lead with PbBiSn-Hg and PbInSn-Hg in specific compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact energy saving lamps (ESL)  | Expires on 1 June 2011   |
| 20       | Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCDs)  | Expires on 1 June 2011   |
| 21       | Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses   |  |

|    |  |                                     |
|----|--|-------------------------------------|
| 23 | <b>Lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm and less</b>  | <b>Expired 24 September 2010</b>    |
| 24 | Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors  |                                     |
| 25 | Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring   |                                     |
| 26 | Lead oxide in the glass envelope of black light blue lamps   | Expires on 1 June 2011              |
| 27 | <b>Lead alloys as solder for transducers used in high-powered (designated to operate for several hours at acoustic power levels of 125 dB SPL and above) loudspeakers</b>  | <b>Expired on 24 September 2010</b> |
| 29 | Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC (1)   |                                     |
| 30 | Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more |                                     |
| 31 | Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting)  |                                     |
| 32 | Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes  |                                     |
| 33 | Lead in solders for the soldering of thin copper wires of 100 micrometer diameter and less in power transformers   |                                     |
| 34 | Lead in cermet-based trimmer potentiometer elements  |                                     |
| 36 | <b>Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content up to 30 mg per display</b>   | <b>Expired 1 July 2010</b>          |
| 37 | Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body  |                                     |
| 38 | Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide  |                                     |
| 39 | Cadmium in colour converting II-VI LEDs (less than 10 microgram Cd per mm <sup>2</sup> of light-emitting area) for use in solid state illumination or display systems  | Expires on 1 July 2014              |

## B6 RoHS exemptions that were valid before 24 September 2010

Unique ID Authority == IPC

Unique ID == EL2010/122/EU

| Identity | Description  | Expiry date          |
|----------|--|----------------------|
| 1        | Mercury in compact fluorescent lamps not exceeding 5 mg per lamp.  |                      |
| 2a       | Mercury in straight fluorescent lamps for general purposes not exceeding 10 mg in halophosphate lamps.   |                      |
| 2b       | Mercury in straight fluorescent lamps for general purposes not exceeding 5 mg in triphosphate lamps with a normal lifetime.  |                      |
| 2c       | Mercury in straight fluorescent lamps for general purposes not exceeding 8 mg in triphosphate lamps with long lifetime.  |                      |
| 3        | Mercury in straight fluorescent lamps for special purposes.  |                      |
| 4        | Mercury in other lamps not specifically mentioned in this Annex.   |                      |
| 5        | Lead in glass of cathode ray tubes, electronic components and fluorescent tubes.   |                      |
| 6        | Lead as an alloying element in steel containing up to 0,35 % lead by weight, aluminium containing up to 0,4 % lead by weight and as a copper alloy containing up to 4 % lead by weight.  |                      |
| 7a       | Lead in high melting temperature type solders (i.e. lead based solder alloys containing 85 % by weight or more lead)   |                      |
| 7b       | Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission as well as network management for telecommunications   |                      |
| 7c       | Lead in electronic ceramic parts (e.g. piezoelectronic devices)  |                      |
| 8        | Cadmium and its compounds in electrical contacts and cadmium plating except for applications banned under Directive 91/338/EEC (1) amending Directive 76/769/EEC (2) relating to restrictions on the marketing and use of certain dangerous substances and preparations. |                      |
| 9        | Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators.   |                      |
| 9a       | DecaBDE in polymeric applications  | Expired 30 June 2008 |

|    |   |                           |
|----|---|---------------------------|
| 9b | Lead in lead-bronze bearing shells and bushes.  |                           |
| 11 | Lead used in compliant pin connector systems.   |                           |
| 12 | Lead as a coating material for the thermal conduction module c-ring.  |                           |
| 13 | Lead and cadmium in optical and filter glass.   |                           |
| 14 | Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight.   |                           |
| 15 | Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages.  |                           |
| 16 | Lead in linear incandescent lamps with silicate coated tubes.   |                           |
| 17 | Lead halide as radiant agent in High Intensity Discharge (HID) lamps used for professional reprography applications.  |                           |
| 18 | Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSiO <sub>5</sub> :Pb) as well as when used as specialty lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ((Sr,Ba) <sub>2</sub> MgSi <sub>2</sub> O <sub>7</sub> :Pb). |                           |
| 19 | Lead with PbBiSn-Hg and PbInSn-Hg in specific compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact Energy Saving Lamps (ESL).   |                           |
| 20 | Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCD).  |                           |
| 21 | Lead and cadmium in printing inks for the application of enamels on borosilicate glass.   |                           |
| 22 | Lead as impurity in RIG (rare earth iron garnet) Faraday rotators used for fibre optic communication systems until 31 December 2009.  | Expired 31 December 2009  |
| 23 | Lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with NiFe lead frames and lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with copper lead frames.  |                           |
| 24 | Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors.  |                           |
| 25 | Lead oxide in plasma display panels (PDP) and surface conduction electron emitter displays (SED) used in structural elements; notably in the front and rear glass dielectric layer, the bus electrode, the black stripe, the address electrode, the barrier ribs, the seal frit and frit ring as well as in print pastes.   |                           |
| 26 | Lead oxide in the glass envelope of Black Light Blue (BLB) lamps.   |                           |
| 27 | Lead alloys as solder for transducers used in high-powered (designated to operate for several hours at acoustic power levels of 125 dB SPL and above) loudspeakers.   | Expired 24 September 2010 |
| 28 | Hexavalent chromium in corrosion preventive coatings of unpainted metal sheetings and fasteners used for corrosion protection and Electromagnetic Interference Shielding in equipment falling under category three of Directive 2002/96/EC (IT and telecommunications equipment)  | Expired 1 July 2007       |
| 29 | Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC.   |                           |
| 30 | Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more.   |                           |
| 31 | Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting).  |                           |
| 32 | Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes.  |                           |
| 33 | Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers.   |                           |
| 34 | Lead in cermet-based trimmer potentiometer elements.  |                           |
| 35 | Cadmium in photoresistors for optocouplers applied in professional audio equipment until 31 December 2009.  | Expired 31 December 2009  |
| 36 | Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content up to 30 mg per display until 1 July 2010.  | Expired 1 July 2010       |
| 37 | Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body.  |                           |
| 38 | Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide.  |                           |
| 39 | Cadmium in colour-converting II-VI LEDs (< 10 µg Cd per mm <sup>2</sup> of light-emitting area) for use in solid state illumination or display systems  |                           |

## Appendix C

### JIG-101 Material Composition Declaration for Electronic Products List

NOTE: For Class C and Class D reporting, the latest Joint Industry Guide list of substances / categories will be provided. This will be periodically updated as changes are made to this standard. As per the JIG-101 Edition 3.1 in Section 4:

*“This Guide establishes three criteria that determine whether substances shall be declared. The resulting declarable substance list is based on these criteria which the industry has determined justify disclosure when these material/substances are present in electrotechnical products in amounts that exceed their specified threshold levels.*

Criteria 1 – R (Regulated)

*Substances that are subject to enacted legislation that (a) prohibits their use; or (b) restricts their use; or (c) requires reporting or results in other regulatory effects (e.g. labeling) and where the substance-specific effective date is currently in effect or scheduled to go into effect within the next 24 months.*

Criteria 2 – A (For Assessment Only)

*Substances that are likely to be subject to enacted legislation where the substance-specific effective dates of the regulatory requirements are uncertain.*

Criteria 3 – I (For Information Only)

*Substances that are not regulated but where there is a recognized market requirement for reporting their content in electrotechnical products. Reporting is used to facilitate company assessment regarding widely adopted industry environmental agreements or standards.*

*The criteria are listed in their order of priority. Substances that might be covered by more than one of these criteria will enter the declarable substance list only once, referring to the criteria with the highest order of priority and its requirements. The requirement to declare a substance in Annex A does not necessarily indicate a ban or restriction of that substance.”*

Further information on the JIG-101 can be found at <http://www.ce.org/Standards/listings.asp>.

In most cases, the import/export of IPC 1752A Class C and Class D XML files between different software systems (e.g. which may be in use at different companies, different divisions within the same company etc) relies on being able to match the alphanumeric string for the Substance Category Name which is used to identify the substances / categories listed in JIG-101 Edition 3.1. Wherever possible, the Substance Category Names in Table C2 are reproduced exactly as they are written in JIG-101 Edition 3.1. Where the same substance / category is listed multiple times in JIG-101, the substance category has been extended in Table C2 to produce unique Substance Category Names. For example, ‘Cadmium/cadmium compounds’ is listed twice in JIG-101 Edition 3.1 and in Table C2 this substance category is extended to produce the unique Substance Category Names ‘Cadmium/cadmium compounds- All, except batteries’ and ‘Cadmium/cadmium compounds- Batteries’.



**C2 JIG-101 Edition 3.1, September 13, 2010**

Unique ID Authority == IPC

Unique ID == JIG-101\_Ed\_3.1-R

| Substance Category Name   | Threshold   |
|---|---|
| Asbestos  | Intentionally added   |
| Azocolourants and azodyes which form certain aromatic amines  | 0.003% by weight (30 ppm) of the finished textile/leather product |
| Boric acid  | 0.1% by weight (1 000 ppm) of the product                         |
| Cadmium/cadmium compounds- All, except batteries  | 0.01% by weight (100 ppm) of homogeneous materials                |
| Cadmium/cadmium compounds- Batteries  | 0.0005 % by weight (5 ppm) of battery                             |
| Chromium VI compounds   | 0.1% by weight (1 000 ppm) of homogeneous materials               |
| Cobalt dichloride (CoCl <sub>2</sub> )  | 0.1% by weight (1 000 ppm) of the product                         |
| Diarsenic pentoxide   | 0.1 % by weight (1 000 ppm) of the product                        |
| Diarsenic trioxide  | 0.1 % by weight (1 000 ppm) of the product                        |
| Dibutyltin (DBT) compounds  | 0.1% by weight (1 000 ppm) of tin in a material                   |
| Dioctyltin (DOT) compounds  | 0.1% by weight (1 000 ppm) of tin in a material                   |
| Dimethyl fumarate   | 0.00001% by weight (0.1 ppm) in a material                        |
| Disodium tetraborate, anhydrous   | 0.1 % by weight (1 000 ppm) of the product                        |
| Fluorinated greenhouse gases (PFC, SF <sub>6</sub> , HFC)   | Intentionally added   |
| Formaldehyde- Composite wood  | Intentionally added   |
| Formaldehyde- Textiles  | 0.0075% by weight (75 ppm) of textile product                     |
| Hexabromocyclododecane (HBCDD) and all major diastereoisomers   | 0.1% by weight (1 000 ppm) of the product                         |
| Lead/lead compounds- All, except batteries  | 0.1 % by weight (1000 ppm) of homogeneous materials               |
| Lead/lead compounds in consumer products designed or intended primarily for children 12 years of age or younger   | 0.03% by weight (300 ppm) of children's product                   |
| Lead/lead compounds in paint and similar surface coatings of toys and other articles intended for use by children | 0.009 % by weight (90 ppm) of surface coating                     |
| Lead/lead compounds in cables/cords with thermoset or thermoplastic coatings                                      | 0.03 % by weight (300 ppm) of surface coating                     |
| Lead/lead compounds- Batteries  | 0.004 % by weight (40 ppm) of battery                             |
| Lead chromate   | 0.1% by weight (1 000 ppm) of the product                         |
| Lead chromate molybdate sulfate red (C.I. Pigment Red 104)  | 0.1% by weight (1 000 ppm) of the product                         |
| Lead sulfochromate yellow (C.I. Pigment Yellow 34)  | 0.1% by weight (1 000 ppm) of the product                         |
| Mercury/mercury compounds- All, except batteries  | Intentionally added or 0.1 % (1000 ppm) of homogeneous material   |
| Mercury/mercury compounds- Batteries  | 0.0001% by weight (1 ppm) of battery                              |
| Nickel, where prolonged skin contact is expected  | Intentionally added   |
| Ozone depleting substances  | Intentionally added   |
| Perchlorates  | 0.0000006 % by weight (0.006 ppm) of the product                  |
| Perfluorooctane sulfonate (PFOS)  | Intentionally added   |
| Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)  | Intentionally added   |
| Bis (2-ethylhexyl) phthalate (DEHP)   | 0.1% by weight (1 000 ppm) of the product                         |
| Dibutyl phthalate (DBP)   | 0.1% by weight (1 000 ppm) of the product                         |
| Benzyl butyl phthalate (BBP)  | 0.1% by weight (1 000 ppm) of the product                         |
| Diisobutyl phthalate (DIBP)   | 0.1% by weight (1 000 ppm) of the product                         |
| Selected Phthalates Group 1 (BBP, DBP, DEHP)  | 0.1% by weight (1 000 ppm) in plasticized material                |
| Selected Phthalates Group 2 (DIDP, DINP, DNOP)  | 0.1% by weight (1 000 ppm) in plasticized material                |
| Polybrominated biphenyls (PBBs)   | 0.1 % by weight (1000 ppm) in homogeneous material                |
| Polybrominated diphenylethers (PBDEs)   | 0.1 % by weight (1000 ppm) in homogeneous material                |

| Substance Category Name                                   | Threshold   |
|---|---|
| Polychlorinated biphenyls (PCBs) and specific substitutes | Intentionally added   |
| Polychlorinated terphenyls (PCTs)                         | Intentionally added   |
| Polychlorinated naphthalenes (more than 3 chlorine atoms) | Intentionally added   |
| Radioactive substances                                    | Intentionally added   |
| Refractory Ceramic Fibres, Aluminosilicate                | 0.1 % by weight (1 000 ppm) of the product                        |
| Refractory Ceramic Fibres, Zirconia Aluminosilicate       | 0.1 % by weight (1 000 ppm) of the product                        |
| Shortchain chlorinated paraffins (C10 – C13)              | 0.1 % by weight (1 000 ppm) of the product                        |
| Tetraboron disodium heptaoxide, hydrate                   | 0.1 % by weight (1 000 ppm) of the product                        |
| Tri-substituted organostannic compounds                   | 0.1% by weight (1 000 ppm) of tin in a material                   |
| Tributyl tin oxide (TBTO)                                 | Intentionally added or 0.1 % by weight (1 000 ppm) of the product |
| Tris (2-chloroethyl) phosphate (TCEP)                     | 0.1 % by weight (1 000 ppm) of the product                        |

Unique ID Authority == IPC

Unique ID == JIG-101\_Ed\_3.1-I

| Substance Category Name   | Threshold   |
|---|---|
| Beryllium oxide (BeO)   | 0.1% by weight (1 000 ppm) of the product                       |
| Brominated flame retardants (other than PBBs, PBDEs or HBCDD)       | 0.1% by weight (1 000 ppm) of plastic material                  |
| Brominated flame retardants (other than PBBs, PBDEs or HBCDD) - PWB | 0.09% total bromine content by weight (900 ppm) in the laminate |
| Polyvinyl chloride (PVC)  | 0.1 % by weight (1 000 ppm) of the product                      |



## Appendix D

## REACH Candidate List Substances

## D2 REACH Candidate List Substances, 3 December 2010

Unique ID Authority == IPC

Unique ID == EUREACH-1210

| Substance Category Name  | Threshold                                  |
|--|--|
| <b><i>The following substances / categories are <u>included</u> in JIG Edition 3.1</i></b>     |  |
| Boric acid   | 0.1 % by weight (1 000 ppm) of the product |
| Cobalt dichloride (CoCl <sub>2</sub> )   | 0.1 % by weight (1 000 ppm) of the product |
| Diarsenic pentoxide  | 0.1 % by weight (1 000 ppm) of the product |
| Diarsenic trioxide   | 0.1 % by weight (1 000 ppm) of the product |
| Disodium tetraborate, anhydrous  | 0.1 % by weight (1 000 ppm) of the product |
| Hexabromocyclododecane (HBCDD) and all major diastereoisomers                                  | 0.1% by weight (1 000 ppm) of the product  |
| Lead chromate  | 0.1% by weight (1 000 ppm) of the product  |
| Lead chromate molybdate sulfate red (C.I. Pigment Red 104)                                     | 0.1% by weight (1 000 ppm) of the product  |
| Lead sulfochromate yellow (C.I. Pigment Yellow 34)   | 0.1% by weight (1 000 ppm) of the product  |
| Bis (2-ethylhexyl) phthalate (DEHP)  | 0.1% by weight (1 000 ppm) of the product  |
| Dibutyl phthalate (DBP)  | 0.1% by weight (1 000 ppm) of the product  |
| Benzyl butyl phthalate (BBP)   | 0.1% by weight (1 000 ppm) of the product  |
| Diisobutyl phthalate (DIBP)  | 0.1% by weight (1 000 ppm) of the product  |
| Refractory Ceramic Fibres, Aluminosilicate   | 0.1 % by weight (1 000 ppm) of the product |
| Refractory Ceramic Fibres, Zirconia Aluminosilicate  | 0.1 % by weight (1 000 ppm) of the product |
| Shortchain Chlorinated Paraffins (C10 – C13)   | 0.1 % by weight (1 000 ppm) of the product |
| Tetraboron disodium heptaoxide, hydrate  | 0.1 % by weight (1 000 ppm) of the product |
| Tributyl tin oxide (TBTO)  | 0.1 % by weight (1 000 ppm) of the product |
| Tris (2-chloroethyl) phosphate (TCEP)  | 0.1 % by weight (1 000 ppm) of the product |
| <b><i>The following substances / categories are <u>not included</u> in JIG Edition 3.1</i></b> |  |
| Acrylamide   | 0.1 % by weight (1 000 ppm) of the product |
| Anthracene   | 0.1 % by weight (1 000 ppm) of the product |
| Anthracene oil   | 0.1 % by weight (1 000 ppm) of the product |
| Anthracene oil,anthracene paste,distn. Lights  | 0.1 % by weight (1 000 ppm) of the product |
| Anthracene oil,anthracene paste,anthracene fraction  | 0.1 % by weight (1 000 ppm) of the product |
| Anthracene oil,anthracene-low  | 0.1% by weight (1 000 ppm) of the product  |
| Anthracene oil,anthracene paste  | 0.1% by weight (1 000 ppm) of the product  |
| coal tar pitch, high temperature   | 0.1% by weight (1 000 ppm) of the product  |
| 4,4'- Diaminodiphenylmethane   | 0.1% by weight (1 000 ppm) of the product  |
| Lead hydrogen arsenate   | 0.1% by weight (1 000 ppm) of the product  |
| Triethyl arsenate  | 0.1 % by weight (1 000 ppm) of the product |
| 5-tert-butyl-2,4,6-trinitro-m-xylene   | 0.1 % by weight (1 000 ppm) of the product |
| Sodium dichromate, dihydrate   | 0.1 % by weight (1 000 ppm) of the product |
| 2,4-Dinitrotoluene   | 0.1 % by weight (1 000 ppm) of the product |
| Trichloroethylene  | 0.1 % by weight (1 000 ppm) of the product |
| Sodium chromate  | 0.1 % by weight (1 000 ppm) of the product |
| Potassium chromate   | 0.1 % by weight (1 000 ppm) of the product |

| Substance Category Name                         | Threshold                                  |
|---|--|
| Ammonium dichromate                             | 0.1 % by weight (1 000 ppm) of the product |
| Potassium dichromate                            | 0.1 % by weight (1 000 ppm) of the product |
| Cobalt(II) Sulphate                             | 0.1 % by weight (1 000 ppm) of the product |
| Cobalt(II) Dinitrate                            | 0.1 % by weight (1 000 ppm) of the product |
| Cobalt(II) Carbonate                            | 0.1 % by weight (1 000 ppm) of the product |
| Cobalt(II) Diacetate                            | 0.1 % by weight (1 000 ppm) of the product |
| 2-Methoxyethanol                                | 0.1 % by weight (1 000 ppm) of the product |
| 2-Ethoxyethanol                                 | 0.1 % by weight (1 000 ppm) of the product |
| Chromium Trioxide                               | 0.1 % by weight (1 000 ppm) of the product |
| Chromic Acid generated from Chromium Trioxide   | 0.1 % by weight (1 000 ppm) of the product |
| Dichromic Acid generated from Chromium Trioxide | 0.1 % by weight (1 000 ppm) of the product |