**ANNEX IV of RoHS II (2011/65/EU) with the changes from January 2014**

Applications exempted from the restriction in Article 4(1) specific to medical devices and monitoring and control instruments

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| **Equipment utilising or detecting ionising radiation** |
| 1. | Lead, cadmium and mercury in detectors for ionising radiation. |
| 2. | Lead bearings in X-ray tubes. |
| 3. | Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate. |
| 4. | Lead in glass frit of X-ray tubes and image intensifiers and lead in glass frit binder for assembly of gas lasers and for vacuum tubes that convert electromagnetic radiation into electrons. |
| 5. | Lead in shielding for ionising radiation. |
| 6. | Lead in X-ray test objects. |
| 7. | Lead stearate X-ray diffraction crystals. |
| 8. | Radioactive cadmium isotope source for portable X-ray fluorescence spectrometers. |
| **Sensors, detectors and electrodes** |
| 1a. | Lead and cadmium in ion selective electrodes including glass of pH electrodes.  |
| 1b. | Lead anodes in electrochemical oxygen sensors.  |
| 1c. | Lead, cadmium and mercury in infra-red light detectors.  |
| 1d. | Mercury in reference electrodes: low chloride mercury chloride, mercury sulphate and mercury oxide.  |
| **Others** |
| 9. | Cadmium in helium-cadmium lasers.  |
| 10. | Lead and cadmium in atomic absorption spectroscopy lamps.  |
| 11. | Lead in alloys as a superconductor and thermal conductor in MRI.  |
| 12 | Lead and cadmium in metallic bonds creating superconducting magnetic circuits in MRI, SQUID, NMR (Nuclear Magnetic Resonance) or FTMS (Fourier Transform Mass Spectrometer) detectors. Expires on 30 June 2021. |
| 13. | Lead in counterweights.  |
| 14. | Lead in single crystal piezoelectric materials for ultrasonic transducers.  |
| 15. | Lead in solders for bonding to ultrasonic transducers.  |
| 16. | Mercury in very high accuracy capacitance and loss measurement bridges and in high frequency RF switches and relays in monitoring and control instruments not exceeding 20 mg of mercury per switch or relay.  |
| 17. | Lead in solders in portable emergency defibrillators.  |
| 18. | Lead in solders of high performance infrared imaging modules to detect in the range 8-14 μm.  |
| 19. | Lead in Liquid crystal on silicon (LCoS) displays.  |
| 20. | Cadmium in X-ray measurement filters. |
| 21 | Cadmium in phosphor coatings in image intensifiers for X-ray images until 31 December 2019 and in spare parts for X-ray systems placed on the EU market before 1 January 2020. |
| 22 | Lead acetate marker for use in stereotactic head frames for use with CT and MRI and in positioning systems for gamma beam and particle therapy equipment. Expires on 30 June 2021. |
| 23 | Lead as an alloying element for bearings and wear surfaces in medical equipment exposed to ionising radiation. Expires on 30 June 2021. |
| 24 | Lead enabling vacuum tight connections between aluminium and steel in X-ray image intensifiers. Expires on 31 December 2019. |
| 25 | Lead in the surface coatings of pin connector systems requiring nonmagnetic connectors which are used durably at a temperature below – 20 °C under normal operating and storage conditions. Expires on 30 June 2021. |
| 26 | Lead in* solders on printed circuit boards,
* termination coatings of electrical and electronic components and coatings of printed circuit boards,
* solders for connecting wires and cables,
* solders connecting transducers and sensors,

that are used durably at a temperature below – 20 °C under normal operating and storage conditions.Expires on 30 June 2021. |
| 27 | Lead in* solders,
* termination coatings of electrical and electronic components and printed circuit boards,
* connections of electrical wires, shields and enclosed connectors,

which are used in(a) magnetic fields within the sphere of 1 m radius around the isocentre of the magnet in medical magnetic resonance imaging equipment, including patient monitors designed to be used within this sphere, or(b) magnetic fields within 1 m distance from the external surfaces of cyclotron magnets, magnets for beam transport and beam direction control applied for particle therapy.Expires on 30 June 2020. |
| 28 | Lead in solders for mounting cadmium telluride and cadmium zinc telluride digital array detectors to printed circuit boards. Expires on 31 December 2017. |
| 29 | Lead in alloys, as a superconductor or thermal conductor, used in cryo-cooler cold heads and/or in cryo-cooled cold probes and/or in cryo-cooled equipotential bonding systems, in medical devices (category 8) and/or in industrial monitoring and control instruments. Expires on 30 June 2021. |
| 30 | Hexavalent chromium in alkali dispensers used to create photocathodes in X-ray image intensifiers until 31 December 2019 and in spare parts for X-ray systems placed on the EU market before 1 January 2020. |
| 31 | Lead, cadmium and hexavalent chromium in reused spare parts, recovered from medical devices placed on the market before 22 July 2014 and used in category 8 equipment placed on the market before 22 July 2021, provided that reuse takes place in auditable closed-loop business-to-business return systems, and that the reuse of parts is notified to the consumer.Expires on 21 July 2021. |
| 32 | Lead in solders on printed circuit boards of detectors and data acquisition units for Positron Emission Tomographs which are integrated into Magnetic Resonance Imaging equipment.Expires on 31 December 2019. |
| 33 | Lead in solders on populated printed circuit boards used in Directive 93/42/EEC class IIa and IIb mobile medical devices other than portable emergency defibrillators. Expires on 30 June 2016 for class IIa and on 31 December 2020 for class IIb. |
| 34 | Lead as an activator in the fluorescent powder of discharge lamps when used for extracorporeal photopheresis lamps containing BSP (BaSi2O5:Pb) phosphors. Expires on 22 July 2021. |

The maximum validity period, which may be renewed, for the exemptions listed in Annex IV is, unless another period is specified, 7 years from the relevant dates lay down in article 4(3).

* Medical devices: 21.07.2021
* Non-industrial monitoring and control equipment: 21.07.2021
* In vitro diagnostic medical devices: 21.07.2023
* Industrial monitoring and control equipment: 21.07.2024