

6th March 2012

Dear DG Environment of European Commission,

The JBCE (Japan Business Council in Europe) would like to request granting exemptions as referred to in Article 5 of the “Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electric equipment”.

Requested is the following item for categories 8 and 9:

Lead in micro-channel plate.

The application according to the form of ANNEX V of the directive is attached to this letter. Although all technical details are described in this applications, we would like to explain briefly why we apply this item now.

In ANNEX IV of the directive an item similar to our application is listed as

3. Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate.

Since this exemption is limited to the equipment utilising or detecting ionizing radiation, some important applications of the micro-channel plate are missing in this description, e.g. amplification of ions and electrons. This kind of amplification is essential for mass spectrometers, semiconductor inspection equipment, surface analysis equipment, and others.

In this sense our request is not really a new application but they add missing, though important uses.

Yours sincerely,

A handwritten signature in black ink, appearing to read "T. Fukumoto".

Takuya Fukumoto

Secretary General
Japan Business Council in Europe

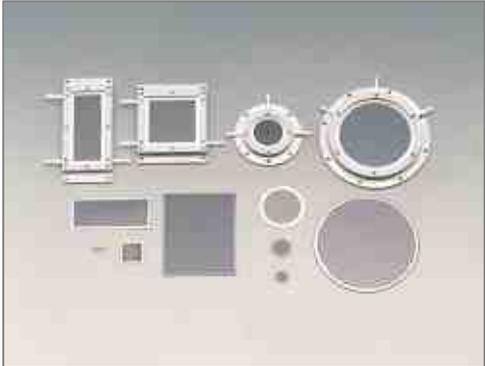
ABOUT JBCE

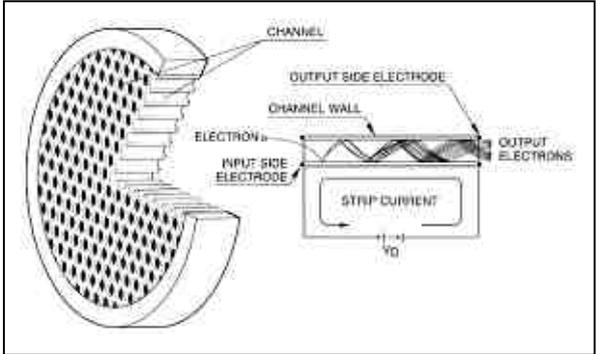
The Japan Business Council in Europe was established in 1999 as the representative organization of Japanese companies operating in the European Union. Our membership consists of more than 60 leading multinational corporations that are active across a wide range of sectors, including electronics, automotive, and chemical manufacturing. The key goal of JBCE is to contribute to EU public policy in a positive and constructive way. In doing this, we can draw upon the expertise and experience of our member companies.

Subject: Lead in micro-channel plate

2011/65/EU ANNEX V

Applications for granting, renewing and revoking exemptions as referred to in Article 5

Criteria	Information
(a) the name, address and contact details of the applicant	<p>Japan Business Council in Europe Rue de la Loi 82, B-1040 Brussels, Belgium TEL: (32)-2-286.53.30 Contact Person: (Mr) Akihito Nakai Email: nakai@jbce.org</p>
(b) information on the material or component and the specific uses of the substance in the material and component for which an exemption, or its revocation, is requested and its particular characteristics	<p>a) The micro-channel plate (MCP) is an electronics component which is formed with millions of glass capillary in two dimension and works as an electron multiplier.</p>  <p>(Examples of Microchannel Plate:MCP)</p> <p>b) The glass is composed of mainly SiO₂ and PbO which works as a conductor, as well as Na₂O, K₂O, Cs₂O, Rb₂O alkaline metal oxides and BaO, CaO alkali earth metals which create viscosity, Bi₂O₃ works as electric resistivity adjustment and Zr₂O for anti-acid characteristics. Among those composites, PbO (Pb) is the material we request the exemption.</p> <p>c) The Pb content ratio of MCP is 45-50 wt%. The absolute weight contained in the MCP is 3.78g maximum (Based on the maximum size MCP available at Hamamatsu Photonics K.K. which is 114 mm in diameter with 1 mm thickness. Most popular types sold are 25 mm in diameter and 0.33 mm thickness or 33 mm in diameter and 0.6 mm thickness respectively. The former contains 0.19g Pb while the later contains 0.52g Pb.) Our estimated annual usage of Pb in MCP in EU market is about 2.5kg.</p> <p>d) The MCP has millions of glass capillary lined up in two dimension with each capillary (channel) at</p>

	<p>a diameter of a few to few tens micrometer which works as an electron multiplier. These glass capillaries are produced by softening a glass tube with heat and drawing several times into a diameter of a few to few tens micrometer. This process is only possible from the characteristics of glass, softness and extensibility, thus not possible with material other than glass at this moment. Further, giving the conductivity to the glass is essential to obtain the electron multiplication for each channel, therefore adding PbO and its reduction treatment become necessary. The PbO is chemically stable material in the glass and is not replaceable with other material.</p>  <p>(Operating Principle of MCP)</p>
<p>(c) verifiable and referenced justification for an exemption, or its revocation, in line with the conditions established in Article 5</p>	<p>An alternative technology, the ceramic material with semiconductor processing approach has been studied, but it has a limitation in its capillary (channel) size down to only a few hundred micrometers, therefore the adaptability as an MCP has not yet been established including the electron multiplication characteristics. At this stage, current Pb glass based material is the only available technology to satisfy the MCP performance requirement.</p>
<p>(d) an analysis of possible alternative substances, materials or designs on a life-cycle basis, including, when available, information about independent research, peer-review studies and development activities by the applicant and an analysis of the availability of such alternatives</p>	<p>Please refer to the above “(c)” partly.</p>
<p>(e) information on the possible preparation for reuse or recycling of materials from waste EEE, and on the provisions relating to the appropriate treatment of waste according to Annex II to Directive 2002/96/EC</p>	<p>The micro-channel plate is pure for B to B equipment. Producer of this equipment takes back this equipment for refurbishing, recycling or treating at respectively safe final disposal.</p>

<p>(f) other relevant information</p>	<p>The MCP technology itself is not new but it has over 40-50 years of technological history while it has been advanced much during that period. The application of MCP has a wide variety, and it is one of the key components to advance the science world as a detector for various analytical instruments.</p> <p>For example, after mounting into MCP-PMT (photomultiplier tube) and image intensifier, MCP is used for night-visions, measurement apparatus, analyzers, research instruments for medical and biological study, high-speed cameras, highly sensitive broadcasting cameras, UV flame alarms, fluorescence lifetime spectrometers, time resolved imaging emission microscopes for semiconductor inspection, equipments for academic research, and LIDAR (LIght Detection and Ranging) etc.</p> <p>Moreover, since its compact size, having extreme advantages of high uniform two dimensional sensibilities, and high response speed, MCP is the essential detector in mass spectrometer (especially TOF-MASS), equipments for semiconductor inspection by applying scanning electron microscope (SEM) technology and surface analysis such as photoelectron spectroscopy (ESCA).</p> <p>Due to the above-mentioned features and its capability of two-dimensional electron multiplication, there is nothing to replace the MCP at current, and PbO (Pb) is an essential material for its manufacturing.</p> <p>Note: Please see the following link for detailed information about MCP and its illustrative applications. http://jp.hamamatsu.com/resources/products/etd/pdf/MCPassy_TMCP0001E08.pdf</p>
<p>(g) the proposed actions to develop, request the development and/or to apply possible alternatives including a timetable for such actions by the applicant</p>	<p>Please refer to the above "(c)" partly.</p>
<p>(h) where appropriate, an indication of the information which should be regarded as proprietary accompanied by verifiable justification</p>	<p>None</p>
<p>(i) when applying for an exemption, proposal for a precise and clear wording for the exemption</p>	<p>Add 1e below 1d in Annex IV "1e Lead in micro-channel plate"</p>

<p>(j) a summary of the application</p>	<p>The exemption with regards to MCP has been already listed in ANNEX IV of 2011/65/EU as follows;</p> <p><i>Equipment utilising or detecting ionising radiation</i> <i>3. Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate.</i></p> <p>However, it might not cover the MCPs used for equipments other than ones detecting ionising radiation such as “mass spectrometer” “semiconductor inspection”, “surface analysis” since they use MCP for detecting ion and/or electrons. Then, we would like to request to add the wording as the above (i) in ANNEX IV.</p>
---	---