Opinion on public consultation for the renewal of an exemption currently listed in RoHS Annex III 7(c)-I

2/March/2021

Name of the associations which make this input:

The Japanese electric and electronic industrial associations (Japan 4EE):

- JEITA (Japan Electronics and Information Technology Industries Association)
- CIAJ (Communications and Information Network Association of Japan)
- JBMIA (Japan Business Machine and Information System Industries Association)
- JEMA (Japan Electrical Manufacturers' Association)

Medical and Monitoring & Control Equipment industrial associations:

- JAIMA (The Japan Analytical Instruments Manufacturers' Association)
- JEMIMA (Japan Electric Measuring Instruments Manufacturers' Association)
- JFMDA (The Japan Federation of Medical Devices Associations)
- JIMA (The Japan Inspection Instruments Manufacturers' Association)
- JIRA (Japan Medical Imaging and Radiological Systems Industries Association)
- JMIF (The Japan Measuring Instruments Federation)
- NECA (NIPPON ELECTRIC CONTROL EQUIPMENT INDUSTRIES ASSOCIATION)

Industrial associations

- JAPIA (The Japan Auto Parts Industries Association)
- JLMA (The Japan Lighting Manufacturers Association)
- LEMA (Japan Land Engine Manufacturers Association)

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The Japanese industrial associations (JEITA, CIAJ, JBMIA, JEMA, JAIMA, JEMIMA, JFMDA, JIMA, JIRA, JMIF, NECA, JAPIA, JLMA and LEMA) hereby input on public consultation for the renewal of an exemption currently listed in RoHS Annex III 7(c)-I.

Answers to the questions and additional comments have been inserted into the document in **dark teal color.**

1. The applicant has requested the renewal of an exemption currently listed in RoHS Annex III
(see exemption specific page accessible through the links above):

   a. Do you agree with the scope of the exemption as proposed by the applicant?
   Answer by Japan 4EE WG:
   We agree. The current legal text should be maintained.

   b. Please suggest an alternative wording and explain your proposal, if you do not agree with the proposed exemption wording.

   c. Please explain why you either support the applicant's request or object to it.
   Answer by Japan 4EE WG:
   To our knowledge, no viable lead-free technology has been established.
   If lead in the application range of the renewal request is prohibited, it will make much of the electrical and electronic equipment unavailable to European citizens. The application cases described in each applicant's request are only excerpts presenting representative cases and affect all product categories of Annex I of the RoHS Directive.

To support your views, please provide detailed technical argumentation / evidence in line with the criteria in Art. 5(1)(a) to support your statement.

Answer by Japan 4EE WG:
As stated by each of the applicants as well, we have found no material for which lead elimination or substitution is scientifically or technically feasible, or a substitute for which reliability can be ensured.
We (Japan 4EE) have contributed to the renewal request of the Umbrella Project by providing detailed technical issues and evidence described in several of the "Cases" (from page 11 to 16 of the renewal request) presented in "Illustrative Cases of Lead-Free Substitution Research by Industry in the Scope of 7(c)-I" in section 4(C) as well as Appendix I (from page 44 to 47 of the renewal request).
However, since there is a huge number of materials and applications of electrical and electronic components that require lead in glass or ceramics, only typical representative examples can be given.
Specific examples are provided below in order to show that there is a scope that meets the criteria of Article 5(1)(a) of the RoHS Directive in addition to the cases described by the Umbrella Project and other applicants:

(1) In the Umbrella Project renewal request we describe lead zirconate titanate as the most typical representative case of lead-containing piezoelectric ceramics, and in Case 3 (page 13 to 14 of the renewal request) and Case 4 (page 14 to 15 of the renewal request) compare it with lead-free piezoelectric ceramics. However, some lead-containing

piezoelectric ceramics do not contain zirconium as a constituent element and are obtained by the firing of material constituted by a combination of titanate with lead and other metal elements.

These lead-containing piezoelectric ceramics have multidimensionally diverse characteristics which are different from those of PZT and are used for different purposes.

Nevertheless, the reason why PZT described in Case 3 and Case 4 of the renewal request cannot be replaced by lead-free piezoelectric ceramics applies to all these lead-containing piezoelectric ceramics as well.

That is, lead-containing piezoelectric ceramics produced by the firing of material constituted by a combination of titanate with lead and other metal elements also fulfil the criteria of Article 5(1)(a) of the RoHS Directive.

Unlike lead zirconate titanate, the firing of titanate alone cannot produce an article (with a defined shape), so lead-containing piezoelectric ceramics produced by the firing of material constituted by a combination of titanate with lead and other metal elements is not lead titanate. Furthermore, information on elements used in the composition is confidential to each company.

If necessary, please contact us and the data holding company may provide it as confidential information.

(2) As described in Example 8 of Appendix I of the Umbrella Project renewal request (pages 46 to 47), PZT can also be used as pyroelectric material.

In that example, substitution by lead-free alternatives is scientifically and technically not feasible, and reliability cannot be ensured.

In addition, lead-containing ceramics produced by the firing of material constituted by a combination of titanate with lead and other metal elements can also be used as pyroelectric materials in applications that take advantage of the multidimensional and diverse characteristics of PZT.

Please note that the electrical functions and applications of PZT and other lead-containing ceramics are not limited to piezoelectric materials.

Regardless of the additional cases mentioned above, it is not possible to comprehensively describe the scope that meets the criteria of Article 5(1)(a) for Exemption 7(c)-I.

As explained above, we believe that, for the present time, it is most appropriate to maintain the current legal text as it is for describing the scope of Exemption 7(c)-I that fulfils the criteria set in Article 5(1)(a) of the RoHS Directive.

2. Please provide information concerning possible substitutes or elimination possibilities at present or in the future so that exemption could be restricted or revoked:

Answer by Japan 4EE WG:
We cannot provide an appropriate answer.

   a. Please detail substitution and elimination possibilities and for which part of the applications in the scope of the requested exemption they are relevant.

   b. Please provide information on research to find lead-free alternatives (substitution or elimination) that may cover part or all of the applications in the scope of the exemption request at present or in the future.

   c. Please provide a roadmap of such on-going substitution/elimination efforts and research (phases that are to be carried out), detailing the current status as well as the estimated time needed for further stages.

3. Please provide any further information and/or data that you think is of importance to substantiate your views.

Answer by Japan 4EE WG:
To our knowledge, industry has been researching lead-free alternatives described in the Umbrella Project request, but unfortunately there is no prospect of replacing the lead-containing parts of 7(c)-I by lead-free ones.
Therefore, the cases and application scope mentioned in the previous application (Umbrella Project, Japan 4EE) are still valid as information concerning the application scope of application of 7(c)-I.
https://rohs.exemptions.oeko.info/fileadmin/user_upload/RoHS_Pack_9/Exemption_7_c_-I/Murata/7c-I_RoHS_V_Application_Form_7c1_20140116_combined_final.pdf

About Japanese electric and electronic (E&E) industrial associations:

About JEITA

The objective of the Japan Electronics and Information Technology Industries Association (JEITA) is to promote the healthy manufacturing, international trade and consumption of electronics products and components in order to contribute to the overall development of the electronics and information technology (IT) industries, and thereby further Japan's economic development and cultural prosperity.

About CIAJ

Mission of Communications and Information network Association of Japan (CIAJ). With the cooperation of member companies, CIAJ is committed to the healthy development of info-communication network industries through the promotion of info-communication technologies (ICT), and contributes to the realization of more enriched lives in Japan as well as the global community by supporting widespread and advanced uses of information in socio-economic and cultural activities.

About JBMIA

Japan Business Machine and Information System Industries Association (JBMIA) is the industry organization which aims to contribute the development of the Japanese economy and the improvement of the office environment through the comprehensive development of the Japanese business machine and information system industries and rationalization thereof.

About JEMA

The Japan Electrical Manufacturers' Association (JEMA) consists of major Japanese companies in the electrical industry including: power & industrial systems, home appliances and related industries. The products handled by JEMA cover a wide spectrum; from boilers and turbines for power generation to home electrical appliances. Membership of 291 companies, http://www.jemanet.or.jp/English/

Medical and Monitoring & Control Equipment industrial associations:

About JAIMA

The Japan Analytical Instruments Manufacturers' Association (JAIMA) is a sole industry association of Analytical Instruments in Japan, which established under the Japanese law. Member of JAIMA are more than 200 leading companies in Japan. JAIMA is to contribute to the development of the Japanese economy and the cultural lives of citizens in Japan through efforts to improve and advance technologies related to analytical instruments and the analytical instruments industry for the purpose of the advancement of science &

technology.

About JEMIMA

Japan Electric Measuring Instruments Manufacturers' Association (JEMIMA) is the only one association representing this industry in Japan. Electric measuring instruments support all kinds of manufacturing industries as so-called "Mother tools" that support innovative activities for research, development, design and manufacturing.
JEMIMA has active committees that collect technical and market information of electric measuring instruments, and provide member companies with useful information for their businesses. Regarding regulations such as environmental, safety and EMC (Electro-Magnetic Compatibility) issues, JEMIMA has been investigating details and providing proposals to legislative organizations summarizing requirements from the industry in cooperation with international related organizations.
Through these activities, JEMIMA will continue to contribute to the steady growth of electric measuring instruments and related industries in Japan.

About JFMDA

The Japan Federation of Medical Devices Associations (JFMDA) was founded in February 1984 by medical device associations consisting of manufacturers and suppliers of medical and health-care devices, equipment, instruments and materials. Since then, JFMDA has been addressing various national and international issues related to all its member associations. By taking appropriate actions on these issues, and through the support of innovation and sustainable supply of medical devices and technologies to the world, JFMDA has contributed to the growth of the industries it represents and to the improvement of welfare and health care in Japan. JFMDA became a legal entity as of January 6th, 2014.

About JIMA

The Japan Inspection Instruments Manufacturers' Association (JIMA) is a corporation aggregate of manufactures and sellers for non-destructive inspection instruments and systems. JIMA is the only industry group in Japan for non-destructive inspection instruments. JIMA would eventually contribute to the safety of social capital and facilities, and quality assurance in various productions through non-destructive inspection technology, and supports the safety and reassurance of people's lives.

About JIRA

Japan Medical Imaging and Radiological Systems Industries Association (JIRA) is an association of companies that develop, manufacture, and sell diagnostic imaging

equipment and systems such as X-ray systems, X-ray CT systems, MRI systems, nuclear medicine systems, ultrasound systems, and image processing systems, radiation therapy systems, and related products. Since its establishment in 1967 as the "Japan Radiological Instruments Association", JIRA has continued to progress with the development of radiation medicine in Japan, and today, with the participation of companies that supply diagnostic imaging systems and related equipment and products, as well as companies in the medical ICT business, JIRA has grown to include about 200 companies.

About JMIF

The Japan Measuring Instruments Federation (JMIF) is a corporation aggregate with leading manufacturers and organizations of measuring instruments in Japan as its members. JMIF was established in 1952 in order to upgrade measuring instruments and to develop the whole measuring instruments industry, through which JMIF would eventually contribute to the development of the economy and society of Japan and to the improvement of Japanese people’s living.
The main activities by JMIF include supporting new technology development of measuring instruments, conducting demand trends survey, developing domestic and overseas markets, and enhancing global cooperation.

About NECA

NIPPON ELECTRIC CONTROL EQUIPMENT INDUSTRIES ASSOCIATION (NECA) was established in 1964 and promoting the growth of the electric control equipment fields such as Relays, Switches, Sensors, PLC/FA System Equipment and others, Safety Control Equipment. NECA has 34 companies as regular members and 36 companies as support members, and shipping amount of relevant products were 643.7billion Yen in FY2019. Our website provides further information on our recent news and activities.

Industrial associations:

About JAPIA

The Japan Auto Parts Industries Association (JAPIA) is an industry organization that was established in August 1969, when its predecessor, the Auto Parts Industries Association was reorganized as an incorporated association with a higher level of public interest. Today, the value of shipments of auto parts from member companies has reached approximately 20 trillion yen, supporting the manufacture of automobiles not only in Japan but also around the world.
Each and every one of these high-quality parts makes a significant contribution to the safety and comfort of automobiles. The environment surrounding the automotive parts

industry is becoming more and more severe, and the industry is facing many challenges such as responding to structural changes, dealing with environmental issues, and promoting international cooperation.
JAPIA will continue to develop proactive business activities to contribute to the growth of the Japanese economy and society while promoting the sound progress of the "motorized society" through the automotive industry.

About JLMA

The Japan Lighting Manufacturers Association (JLMA) was newly established on April 1, 2013 through the merger of the Japan Electric Lamp Manufacturers Association (JELMA; its predecessor was established in 1933) and the Japan Luminaires Association (JLA; its predecessor was established in 1942). JLMA is a general incorporated association consisting of manufacturers and sellers of light sources, materials and parts for lighting, control-gears and luminaires, and related organizations, and its aim is to contribute to the development and promotion of the lighting industry, the securement of safety of people’s lives, and the enhancement of culture of life. JLMA are working for popularizing the better lighting culture and more environment-friendly energy saving products. On April 1, 2019, the Japanese National Committee of CIE (JCIE) is merged into JLMA, and we also conduct research and study on illumination and light, thereby we aim at reinforcement of activities for “Improvement of Lighting Quality”.

About LEMA

LEMA is aiming prompted develop and improve the technology of land-based internal combustion engine industry and protect the environment, through the research and study of production, demand, trade, distribution, and technology related to land-based internal combustion engine. This activity is also contributing to economical development wealth of people life of this country and world.