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COMMISSION DELEGATED DIRECTIVE (EU) 2025/2363

of 8 September 2025

amending Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in glass or ceramic components

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to 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 electronic equipment ([1]), and in particular Article 5(1), point (a), thereof,

Whereas:

(1) Article 4(1) of Directive 2011/65/EU requires Member States to ensure that electrical and electronic equipment placed on the market does not contain the hazardous substances listed in Annex II to that Directive. That restriction does not apply to certain exempted applications listed in Annex III to that Directive.

(2) The categories of electrical and electronic equipment to which Directive 2011/65/EU applies are listed in Annex I to that Directive.

(3) Lead is a restricted substance listed in Annex II to Directive 2011/65/EU. The maximum tolerated concentration value is 0,1 % by weight of lead in homogenous materials.

(4) Commission Delegated Directive (EU) 2018/736 ([2]) granted an exemption for electrical and electronic components containing lead in glass or ceramic or in glass or ceramic matrix compound, as set out in entry 7(c)-I of Annex III to Directive 2011/65/EU. The exemption was to expire on 21 July 2021, 21 July 2023 and 21 July 2024, respectively for each of the relevant electrical and electronic equipment category.

(5) Commission Delegated Directive (EU) 2019/169 ([3]) granted an exemption for lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher, as set out in entry 7(c)-II of Annex III to Directive 2011/65/EU. The exemption was to expire on 21 July 2021, 21 July 2023 and 21 July 2024, respectively for each of the relevant electrical and electronic equipment category.

(6) The Commission received in total eight renewal requests for the exemption referred to in recital 4, covering all electrical and electronic equipment categories. For the exemption referred to in recital 5, the Commission received one renewal request. All requests were received within the timeframe for renewal laid down in Article 5(5) of Directive 2011/65/EU. In accordance with Article 5(5), second subparagraph, of Directive 2011/65/EU, the existing exemption remains valid until a decision on the renewal application is taken by the Commission.

([1]) OJ L 174, 1.7.2011, p. 88, ELI: http://data.europa.eu/eli/dir/2011/65/oj.

([2]) Commission Delegated Directive (EU) 2018/736 of 27 February 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for certain electrical and electronic components containing lead in glass or ceramic (OJ L 123, 18.5.2018, p. 94, ELI: http://data.europa.eu/eli/dir_del/2018/736/oj).

([3]) Commission Delegated Directive (EU) 2019/169 of 16 November 2018 amending, for the purposes of adapting to scientific and technical progress, Annex III to Directive 2011/65/EU of the European Parliament and of the Council as regards an exemption for lead in dielectric ceramic in certain capacitors (OJ L 33, 5.2.2019, p. 5, ELI: http://data.europa.eu/eli/dir_del/2019/169/oj).

(7) In order to evaluate the applications received, a technical and scientific assessment study was carried out and finalised in 2022 ([4]). A further study focussing on the electrical and electronic equipment categories requested for renewal at a later stage was carried out and finalised in 2024 ([5]). The evaluations included stakeholder consultations in accordance with Article 5(7) of Directive 2011/65/EU.

(8) The evaluation of the requested exemption renewal concluded that in ceramics, lead provides particular dielectric, piezoelectric, pyroelectric, ferroelectric, semiconductor, magnetic properties over a wide use range in terms of temperatures, voltages or frequencies. In glass, lead provides crucial properties such as lowering the melting and softening points, improving workability, machinability, and chemical stability and others.

(9) Substitutes for lead-containing ceramics and glasses are either not technically practicable for all applications or substitutes are not sufficiently reliable for specific applications. Thus, the requested renewal meets the criteria set out in Article 5(1), point (a), first and second indent, of Directive 2011/65/EU, namely, that the elimination or substitution through the design changes or materials and components which do not require any of the materials or substances listed in Annex II is scientifically or technically impracticable and that the reliability of substitutes is not ensured.

(10) In order to allow a more focussed technical assessment in the future, the current exemption set out in entry 7(c)-I of Annex III to Directive 2011/65/EU should be split in two points, namely 7(c)-V for lead in glass applications and 7(c)-VI for lead in ceramic applications. It is appropriate to specify the technical applications in those entries.

(11) The evaluation referred to in recital 7 concluded that even though it is scientifically possible to substitute lead in ceramic dielectrics for high-voltage capacitors for some applications under the exemption set out in point 7(c)-II of Annex III to Directive 2011/65/EU, it is not technically practicable for most applications. In addition, such lead-free capacitors lack the sufficient reliability in practice. Thus, the requested renewal meets the criteria set out in Article 5(1), point (a), first and second indent, of Directive 2011/65/EU.

(12) The renewed exemptions should be granted with validity periods which take into account the technical conclusions of the evaluation referred to in recital 7. The exemption set out in point 7(c)-I of Annex III to Directive 2011/65/EU should be renewed for a short-term validity period in accordance with Article 5(2), first subparagraph, of Directive 2011/65/EU. The expiry dates of the exemption set out in points 7(c)-II and the exemptions to be set out in points 7(c)-V and 7(c)-VI of Annex III to that Directive should take into account the minimum period of 18 months before the expiry date, in which renewal requests need to be submitted in accordance with Article 5(5), first subparagraph, of Directive 2011/65/EU.

(13) Due to the remaining short-term renewal of the exemption set out in point 7(c)-I of Annex III to Directive 2011/65/EU, it is appropriate to set one expiry date for all categories of electrical and electronic equipment set out in Annex I to Directive 2011/65/EU.

(14) The renewal of the exemptions does not weaken the environmental and health protection afforded by Regulation (EC) No 1907/2006 of the European Parliament and of the Council ([6]).

(15) Directive 2011/65/EU should therefore be amended accordingly,

([4]) Final Report (Pack 22) of the study is available at https://op.europa.eu/en/publication-detail/-/publication/c774eb67-7cc6-11ec-8c40-01aa75ed71a1/language-en.

([5]) Final Report (Pack 27) of the study is available at https://op.europa.eu/en/publication-detail/-/publication/708d9a2a-26e1-11ef-a195-01aa75ed71a1/language-en/format-PDF/source-327348441.

([6]) Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006, p. 1, ELI: http://data.europa.eu/eli/reg/2006/1907/oj).

HAS ADOPTED THIS DIRECTIVE:

Article 1

Annex III to Directive 2011/65/EU is amended in accordance with the Annex to this Directive.

Article 2

1. Member States shall adopt and publish, by 30 June 2026 at the latest, the laws, regulations and administrative provisions necessary to comply with this Directive. They shall forthwith communicate to the Commission the text of those provisions.

They shall apply those provisions from 1 July 2026.

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

Article 3

This Directive shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

Article 4

This Directive is addressed to the Member States.

Done at Brussels, 8 September 2025.

For the Commission
The President
Ursula VON DER LEYEN

ANNEX

Annex III to Directive 2011/65/EU is amended as follows:

(1) points 7(c)-I and 7(c)-II are replaced by the following:

'7(c)-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound	Applies to all categories and expires on 30 June 2027.
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	Applies to all categories (except applications covered by point 7(c)-I or 7(c)-IV) and expires on 31 December 2027.'

(2) the following points 7(c)-V and 7(c)-VI are added:

'7(c)-V	Electrical and electronic components containing lead in a glass or glass matrix compound that fulfils any of the following functions: (1) for protection and electrical insulation in glass beads of high-voltage diodes and glass layers for wafers; (2) for hermetic sealing between ceramic, metal and/or glass parts; (3) for bonding purposes in a process parameter window for < 500 °C combined with a viscosity of 1 013,3 dPas ('glass-transition temperature'); (4) for use as a resistive material such as ink, with a resistivity range from 1 ohm/square to 100 megohm/square, excluding trimmer potentiometers; (5) for use in chemically modified glass surfaces for microchannel plates (MCPs), channel electron multipliers (CEMs) and resistive glass products (RGPs).	Applies to all categories and expires on 31 December 2027.
7(c)-VI	Electrical and electronic components containing lead in a ceramic that fulfils any of the following functions: (1) for use in piezoelectric lead zirconium titanate (PZT) ceramics; (2) for providing ceramics with a positive temperature coefficient (PTC).	Applies to all categories (except applications covered by points 7(c)-II, 7(c)-III and 7(c)-IV of this Annex as well as point 14 of Annex IV) and expires on 31 December 2027.'