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COMMISSION IMPLEMENTING DECISION (EU) 2026/2146

of 25 September 2026

allowing Poland to authorise biocidal products containing ethylene oxide for the protection of cultural heritage

(notified under document C(2026) 6682)

(Only the Polish text is authentic)

THE EUROPEAN COMMISSION,

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

Having regard to Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products ([1]), and in particular Article 55(3) thereof,

After consulting the Standing Committee for Biocidal Products,

Whereas:

(1) Ethylene oxide in product-type 2 (disinfectants and algaecides not intended for direct application to humans or animals), as defined in Annex V to Regulation (EU) No 528/2012, was included in the work programme for the systematic examination of all existing active substances contained in biocidal products referred to in that Regulation, as set out in Annex II to Commission Delegated Regulation (EU) No 1062/2014 ([2]). An application for approval of ethylene oxide in product-type 2 was submitted on 1 December 2009.

(2) Commission Implementing Decision (EU) 2025/1074 ([3]) found that the representative product included in the application for approval was not within the scope of Regulation (EU) No 528/2012 and that, as a consequence, it was appropriate to not approve ethylene oxide as an active substance for use in biocidal products of product-type 2.

(3) Pursuant to Article 55(3) of Regulation (EU) No 528/2012, on 25 February 2026, Poland submitted to the Commission an application for a derogation from Article 19(1), point (a), of that Regulation, in which it asked to be allowed to authorise biocidal products containing ethylene oxide for the protection of cultural heritage, including archive material.

(4) According to the information provided by Poland, the use of ethylene oxide is considered essential for the protection of objects with cellulose substrate and other cultural heritage objects, since it is the only efficient technique to control the variety of harmful organisms which can threaten such objects and in particular mould and bacteria. The activity of fungi or bacteria on heritage objects on cellulose substrates can result in mechanical damage, discoloration, decrease in material strength and, ultimately, the complete destruction of the object. The preservation of materials such as polychrome wood, textiles, easel paintings, is also threatened by microbiological contamination, which can cause both chemical degradation, such as pigment alteration, binder decomposition, and physical damage, such as stains and fibre weakening. Moreover, microbiological contamination usually affects entire collections rather than individual items. According to Poland, particularly dangerous in this regard are fungal infections, as these micro-organisms can grow on various types of substrates, with elevated humidity being virtually the only factor necessary for their development.

(5) As stated by Poland in the application, the disinfection with ethylene oxide in fumigation chambers is the most effective disinfection procedure for the protection of cultural heritage objects, in particular of library and archive holdings: it is highly efficacious against microorganisms, including moulds, their spores and resistant forms, it does

([1]) OJ L 167, 27.6.2012, p. 1, ELI: http://data.europa.eu/eli/reg/2012/528/oj.

([2]) Commission Delegated Regulation (EU) No 1062/2014 of 4 August 2014 on the work programme for the systematic examination of all existing active substances contained in biocidal products referred to in Regulation (EU) No 528/2012 of the European Parliament and of the Council (OJ L 294, 10.10.2014, p. 1, ELI: http://data.europa.eu/eli/reg_del/2014/1062/oj).

([3]) Commission Implementing Decision (EU) 2025/1074 of 2 June 2025 not approving ethylene oxide as an existing active substance for use in biocidal products of product-type 2 in accordance with Regulation (EU) No 528/2012 of the European Parliament and of the Council (OJ L, 2025/1074, 3.6.2025, ELI: http://data.europa.eu/eli/dec_impl/2025/1074/oj).

not alter optical parameters or accelerate the natural ageing processes of the treated paper, the chamber-based disinfection system is safe for operating personnel and the disinfected collections are safe for future users. According to Poland, one of the key advantages of this technique is the capacity for large-scale application, enabling entire collections to be disinfected simultaneously. This feature is particularly important in the case of mass contamination caused by floods and other natural disasters, water spills or the act of extinguishing fire with water.

(6) According to Poland, there are no appropriate alternative methods for the treatment of cultural heritage objects, including archive material. The use of ethanol is effective only for localised and surface contamination, but not for internal contamination and is not suitable for mass disinfection procedures either. The use of quaternary ammonium fumes is ineffective against spores and cellulolytic fungi and may induce changes in the physical properties and pH of paper. Anoxia is effective against insects, however, it is ineffective against mould and bacteria. Ionising radiation, such as gamma radiation, increases vulnerability of paper to microorganisms germination and may cause significant degradation of cellulose. UV radiation is ineffective against spores and is potentially harmful to the treated objects, inducing colour change, brittleness and cross-linking in organic materials.

(7) As indicated by Poland in the application, products containing ethylene oxide are used by fumigation by trained professionals. On account of its hazard properties, disinfection with ethylene oxide is carried out only in hermetically sealed vacuum fumigation chambers, which operate in a closed, fully automated and precisely controlled system below atmospheric pressure. The disinfection process involves several stages, including a final, repeatable phase of aeration and removal of residual gases to a catalytic incinerator, where ethylene undergoes complete decomposition, preventing emissions into the environment. Once the process is completed, the treated materials are placed in a clean storage area equipped with an ethylene oxide detection system integrated with a ventilation system for additional operational safety for a minimum of seven days.

(8) The information and justification contained in the application submitted by Poland shows that the use of ethylene oxide is essential for the protection of cultural heritage and that there are no appropriate alternatives for the treatment of cultural heritage objects in Poland, in particular for the treatment of archive and library holdings, since all the currently available alternative techniques are either not sufficiently effective or can cause damage to the materials treated.

(9) Based on the information and justification provided by Poland, it is appropriate to conclude that ethylene oxide is essential for the protection of cultural heritage in Poland and that no appropriate alternatives are currently available in Poland. Poland should therefore be allowed to authorise biocidal products containing ethylene oxide for the protection of cultural heritage,

HAS ADOPTED THIS DECISION:

Article 1

Poland may authorise biocidal products containing ethylene oxide for the protection of cultural heritage until 31 July 2031.

Article 2

This Decision is addressed to the Republic of Poland.

Done at Brussels, 25 September 2026.

For the Commission
Olivér VÁRHELYI
Member of the Commission