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Reference Number: BMNT-UW.1.2.5/0410-V/5/2019

Subject: Application according to Art. 55 (3) BPR for an allowance to authorise biocidal products containing the active substance nitrogen generated in situ for the protection of cultural heritage in Austria

Dear Mr. Berend,

The protection of cultural heritage is an important issue in Austria and of high public interest. We share the serious concerns of heritage institutions and state organisations about the preservation of valuable collections and cultural objects.

The Austrian Federal Ministry for Sustainability and Tourism has been contacted by representatives of Austrian Museums and ICOM (International Council of Museums), who apply the technology of a controlled nitrogen atmosphere to protect the cultural heritage by generating nitrogen in situ. At present 9 Museums use nitrogen chambers.

For the operation of treatment facilities, the nitrogen is separated from ambient air directly at the place of use and stored in a tank container. During the treatment the nitrogen content of the atmosphere in the chamber is increased to 99 % and oxygen is almost completely removed. In addition humidity (45%) and temperature (25 ° C) in the chamber are controlled. The duration of the treatment of the objects is usually 4 weeks. Under these conditions, harmful organisms cannot survive.

The technology has many advantages, the most important ones are

- It can be applied to objects made from materials that cannot be committed to other treatments such as freezing or heat treatments and in particular for objects made of organic or combined materials
- It is effective for harmful organisms at all stages
- The method can be used for the treatment of almost all cultural objects
- Nitrogen is already listed in Annex I of the BPR and therefore classified as substance with a more favourable environmental and health profile
- Standard EN 16790 (2016) „Conservation of cultural heritage – Integrated pest management (IPM) for protection of cultural heritage“ includes the method in Annex E.4. as „Anoxia or modified/controlled atmospheres“ for the goal of killing insects. Among other substances the use of nitrogen is described as „most used“.

Standard EN 16790 also lists alternative treatments to „Anoxia or modified/controlled atmospheres“ such as „Low temperature“ and „Elevated temperature“. Both methods have some disadvantages or side effects. Low temperature treatment might effect surface treatments and coatings, e.g. shellac or alkyd on wood and metal and can destroy the object. Elevated temperature has side effects in form of changes of surface of some organic materials.

If museum objects have been treated in a previous treatment with chemical agents like lindan, residues from this previous treatments can be mobilized and enriched at the surface of the object. Treated but unloaded objects can be contaminated via the gas phase. In addition, depending on a different thermal conductivity and the thermal expansion of different materials in the composite, mechanical stresses caused by dilation can endanger fragile objects made of mixed materials.

Thermal processes are generally not suitable for the treatment of paintings, wax-, oil- or protein-bound polychrome objects, since this can change during the treatment temperature-dependent properties of the materials and cause irreversible damage of the cultural object. Glued objects can be destroyed if the glue will be softened by the higher temperature. Cultural objects made by leather or vellum cannot be treated with higher temperatures as there is a risk of shrinking.

Also other treatments like radiation or biocidal products have limitations according to Standard EN 16790. The use of radiation is legally restricted and biocidal products can – depending on the sensitivity of materials – modify the cultural object in a chemical way.

The use of nitrogen in ready-for-use canisters as listed in Annex I of the BPR does not appear to be a sufficient alternative for museums as the limited quantities in canisters require frequent transport and a storage facility. The weight of the gas cylinders is another disadvantage. Under certain circumstances the corresponding point load of the floors in historical museum buildings is exceeded with the required number of gas cylinders.

In addition, there is only one authorisation granted in Austria for a biocidal product with the active substance nitrogen. The product name is „Rentokil N₂ Controlled Atmosphere“ with the R4BP Asset number AT-0008142-0000. In our view this does not ensure a constant availability of the product as required for frequent applications. In 2018 two museums in Austria (for example the Landesmuseum Kärnten) asked Rentokil for a nitrogen treatment, but the service could not be provided.

Art. 55 para 3 BPR reads,

„3. By way of derogation from point (a) of Article 19(1), the Commission may, by means of implementing acts, allow a Member State to authorise a biocidal product containing a non-approved active substance if it is satisfied that that active substance is essential for the protection of cultural heritage and that no appropriate alternatives are available. Those implementing acts shall be adopted in accordance with the advisory procedure referred to in Article 82(2). A Member State wishing to obtain such a derogation shall apply to the Commission, providing due justification.“

As mentioned above Austria believes that Anoxia or modified/controlled atmospheres is essential for the protection of cultural heritage and no appropriate alternatives are available for all applications. This opinion is also supported by 2016 Standard EN 16790. In Austria in situ generated nitrogen is used to achieve a controlled atmosphere.

In situ generated nitrogen is neither an approved active substance nor included in Annex I of the BPR.

Therefore **Austria applies** to the Commission according to **Art. 55 (3) BPR** to allow a derogation from point (a) of Article 19 (1) BPR by means of an implementing act for the active substance in situ generated nitrogen for the protection of cultural heritage.

The derogation should be unlimited (at least for **five years**).

We are aware that a national authorisation will have to include risk mitigation measures such as a restriction of the user categories for museum professionals and trained professionals only as well as safety provisions for the operation of nitrogen chambers.

We propose a harmonisation of the conditions for a derogation in one (or more) implementing act(s) for all the MS who are seeking a derogation.

Finally, we would be grateful if the Commission could take an initiative with the aim to harmonise also the national derogations / authorisations for the protection of cultural heritage as much as possible.

Yours sincerely,

26. Juni 2019

For the Federal Minister:

Dr. Thomas Jakl

Signed electronically