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Vienna, 3. March 2021

Exemption Review under Directive 2011/65/EU

Position of the EVVA Sicherheitstechnologie GmbH

Name and contact details of applicant:

Company: EVVA Sicherheitstechnologie GmbH
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Evaluation of requests for exemptions submitted according to Article 5 (1) (a) and for the evaluation of existing exemptions according to Article 5 (1) (b).

RoHS Annex III, Exemption 6 (c) for copper alloy containing up to 4 % lead by weight

Answers by the EVVA Sicherheitstechnologie Vienna, Austria – member of the Austrian Association of Metaltechnology Industries to the questions posed in the Initial Consultation Questionnaire concerning the renewal of the exemption 6 (c).

Question 1: The applicants have 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 applicants?

Yes, the scope of the exemption as proposed by the applicants is fully supported

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

No alternative wording

c. Please explain why you either support the applicant's request or object to it. To support your views, please provide detailed technical argumentation / evidence in line with the criteria in Art. 5 (1) (a) to support your statement.

• EVVA Sicherheitstechnologie is a manufacturer of building hardware with more than 100 years of innovation and leadership in the security of building hardware.

Building hardware (e.g., locks, locking cylinders, keys, door handles, padlocks) can be either purely mechanical or mechatronic / electro-mechanic products. Many of the mechatronic / electro-mechanic products contain mechanical components made from copper alloys containing up to 4% lead by weight.

• In finding technically and economically suitable alternative lead-free alloys for certain mechanical components in e.g., mechanical or mechatronic / electro-mechanic lock cylinders and padlocks and the respective keys, significant efforts have been made by the manufacturers together with their suppliers, the manufacturers of brass bars and coils as well as nickel silver coils, which are the semi-finished materials purchased by the manufacturers of lock cylinders, padlocks and keys for being machined in their factories. These efforts have been going on for many years but have not been yielding success so far. It is expected that also in the foreseeable future lead will be needed in these alloys.

EVVA Sicherheitstechnologie is also a member of ARGE within the FMTI – the European Federation of Associations of Locks and Builders Hardware Manufacturers (at which FMTI is a member). The ARGE organisation has been communicating with the European Commission, DG GROW, Unit REACH and with the European Chemicals Agency (ECHA) concerning the lead in the Candidate List of Substances of Very High Concern (SVHC) and their related exceptions. On 26 June 2020, ECHA published the Investigation Report regarding the 'Review of entry 63 of Annex XVII to REACH as regards lead in certain articles supplied to the general public in the light of new scientific information'. The report can be found on ECHA's website: 8e75d28e-04f1-bf3c-b8a0-a2d079fe3987 (europa.eu). This is a screenshot of the relevant section in the summary of the Investigation Report:

ANNEX XV INVESTIGATION REPORT – LEAD IN CONSUMER ARTICLES

Table 1. Overview of key findings and recommendations per derogation

Derogations		***Findings***	***Conclusion***
Entry 63, para	*Subject of the derogation*		
8(e)	*Keys and locks, including padlocks;*	*Testing with alternatives has led to products not meeting quality standards.* *The most advanced alternative, Si-based alloy, has decreased sliding behaviour and results in products with inferior surface quality.* *Currently there are no technically and economically feasible alternatives to lead in brasses and nickel silver in keys and locks, including padlocks.* *Industry testing not performed, due to derogation.*	*In the absence of information on migration from this article group, ECHA is not in a position to conclude on whether migration limits were fulfilled for these articles.* *Industry is advised to collect migration data in order to demonstrate compliance with the migration limits in entry 63 should the derogation be removed.*

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• In lock cylinders and padlocks (both mechanical and mechatronic / electro-mechanic) the main components which are all function-critical are made of lead-containing alloys.
Hence, it has been challenging – and has not been successful yet
– to find appropriate lead-free alternatives.

• The main components of nearly all lock cylinders and many of the padlocks are made of brass which contains approx. 2.5% - 3.5% lead (e.g., CuZn39Pb3 and CuZn40Pb2). In many cases the main components are coated.

• Nearly all keys for lock cylinders and padlocks (both mechanical and mechatronic / electro-mechanic) are made of either brass(lead content approx. 2.5% - 3.5%) or nickel silver (lead content approx. 1%, as e.g., in CuNi13Zn24Pb1). Some of the brass keys are nickel coated.

• The use of these specific types of lead-containing copper alloysfor keys, lock cylinders and padlocks is not limited to Europe but is established on a global scale and has generated a de facto world-wide industry standard which facilitates transcontinental trade.

What technical functions does lead provide in these articles?

• Lead is used in the respective copper alloys because of specific technical functions:
- ✓ improving machinability
- ✓ improving sliding/ gliding property of keys in lock cylinders and padlocks when these locks are not lubricated
- ✓ improving strength of cylinder, key and padlocks
- ✓ improving the durability and life time of these products

• In addition, lead makes the alloys less brittle, which is of importance for keys not breaking, and also for improving resistance against certain burglary attacks on cylinders.

• Whether the lead content in the alloys used for lock cylinders and padlocks adds to the corrosion resistance of the products and whether the same or an even better corrosion resistance would be achieved with lead-free alloys cannot be assessed as respective corrosion tests have not been carried out yet.

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

Available alternative substances or technologies to lead or its compounds used in the articles referred to above:

• Since approx. 20 years suppliers of the brass and silver nickel coils as well as of the brass bars used for manufacturing keys, lock cylinders and padlocks have been engaged in developing copper alloys without lead or with a lead content below 0.05%. They have been supported by many of the manufacturers of keys, lock cylinders and padlocks. Also, manufacturers of tools for machining of the brass and nickel silver coils as well as the brass bars have been supportive in developing such lead-free alloys. A significant amount of funds has been spent on these developments.

• Whilst in general manufacturers of semi-finished products made from copper alloys as brass bars and coils as well as nickel silver coils were successful in developing lead-free alloys for other applications, like e.g., sanitary fittings, the results of their R&D activities have been disappointing for the manufacturing of keys, lock cylinders and padlocks. Some of these alloys seem to serve general requirements for manufacturing keys, lock cylinders and padlocks at first sight (e.g., CuZn21Si3P) but the machining properties are clearly below the level provided by the alloys presently in use.

Potential socioeconomic consequences associated with a restriction on the use of lead in those products

• As short-term there are no alternative lead-free copper alloys (brass and nickel silver) available which offer comparable properties relevant for the manufacturing processes for keys, lock cylinders and padlocks, manufacturing would be less efficient and would have to be re-designed partially. Investments would be required whereby the amount of funds to be spent by individual manufacturers would most likely differ depending on the type of key, lock cylinder and padlock.

• The more complex manufacturing process would lead to an increase of manufacturing costs. Potentially, lead-free alloys will be more expensive compared with the present lead-containing ones, which together with higher manufacturing cost will lead to an increase of product cost and consequently prices for keys, lock cylinders and padlocks.

• As European manufacturers export keys, lock cylinders and padlocks into markets outside the EU respectively the EEA, they will have cost disadvantages against non-European suppliers when using lead-free alloys. Alternatively, the European suppliers would have to manufacture and stock both versions of their products, lead-free for EU/EEA and lead-containing for exports into non-EU/EEA countries.

• There would be also an advantage for European manufacturers in case keys and locks, including padlocks would be eliminated from the list of derogations, as manufacturers from outside Europe who export their products into EU/EEA countries would have to establish specific lead-free products with which they might experience even a higher cost increase compared with the presently used lead-containing products than European manufacturers. As it is assumed that there are more exports of keys, lock cylinders and padlocks from EU/EEA countries to nonEU/EEA countries than imports, the balance of both trade streams would be to the disadvantage of European manufacturers.

• Higher cost in manufacturing keys will not only occur at the manufacturers but also at the locksmiths and key cutting services. They would have to charge higher prices for the keys produced by them.

• It has to be even assumed that for technological reasons some of the keys, lock cylinders and padlocks presently in use cannot be made from lead-free alloys. Alternatively, when lead-free alloys would be used, the properties of the products as defined in the relevant CEN standards could not be achieved on the same level as with the presently lead-containing materials.

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More about the EVVA Company (about us and products)
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Content of the document prepared in coordination with FMTI and ARGE