

Questionnaire 1 (Clarification) for Renewal of Exemption 8(b) (TMC)

Table 1: Currently valid wording of the exemption III-8(b) series

No.	Current exemption wording	Current scope and dates of applicability
III-8(b)	Cadmium and its compounds in electrical contacts	<p>Applies to categories 8, 9 and 11.</p> <p>Expires on</p> <ul style="list-style-type: none"> - 21 July 2021 for categories 8 other than in vitro diagnostic medical devices and for cat. 9 other than industrial monitoring and control instruments; - 21 July 2023 for category 8 in vitro diagnostic medical devices; - 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.
III-8(b)(I)	<p>Cadmium and its compounds in electrical contacts used in:</p> <ul style="list-style-type: none"> - circuit breakers, - thermal sensing controls, - thermal motor protectors (excluding hermetic thermal motor protectors) - AC switches rated at: <ul style="list-style-type: none"> - 6 A and more at 250 V AC and more, or - 12 A and more at 125 V AC and more - DC switches rated at 20 A and more at 18 V DC and more, and - switches for use at voltage supply frequency ≥ 200 Hz 	<p>Applies to categories 1 to 7 and 10.</p> <p>Expires on 21 July 2021 for categories 1 to 7 and 10.</p>

Acronyms and Definitions

Cadmium-free	Not containing lead (Pb) in the applications in scope of the exemption to be reviewed.
Cat.	Category, referring to the categories of EEE specified in Annex I of the current RoHS Directive 2011/65/EU
Cd	Cadmium
COM	European Commission
EEA	European Economic Area (EU 27 + Iceland, Liechtenstein and Norway)
EEE	Electrical and electronic equipment

EU European Union
 IMCI Industrial monitoring and control instruments

1. Background

Bio Innovation Service, UNITAR and Fraunhofer IZM have been appointed¹ by the European Commission through for the evaluation of applications for the review of requests for new exemptions and the renewal of exemptions currently listed in Annexes III and IV of the RoHS Directive 2011/65/EU.

TMC requested the renewal of exemption 8(b) with its current wording for the maximum possible validity of 7 years.

Table 2: Requested exemption

No.	Requested exemption	Requested scope and dates of applicability
III-8(b)	Cadmium and its compounds in electrical contacts	Applies to category 9 industrial monitoring and control instruments. Expires on 21 July 2031 (2024 + 7) for cat. 9 industrial monitoring and control instruments.

As result of a first review we identified that some information is missing. Against this background the questions below are intended to clarify aspects concerning the request at hand.

We ask you to kindly answer the below questions until **27 October latest**.

2. Questions

1. Could you please confirm that Table 2 correctly reflects the requested renewal of the exemption?

TMC reply to question 1:

¹ Implemented through the specific contract 070201/2020/832829/ENV.B.3 under the Framework contract ENV.B.3/FRA/2019/0017



TMC would like to reiterate that all submitted renewal applications, including the renewal application for RoHS exemption III-8(b), request the renewal of the exemption for category 9 industrial monitoring and control instruments in its existing wording with the subsequent maximum renewal period of 7 years.

Table 2 therefore correctly reflects TMC's renewal request.

2. In the last review by Deubzer et al. (2022)², the consultants recommended narrowing the scope of the renewed exemptions combined with expiry dates in 2023 and 2025 for the various sub-clauses of exemption 8(b)(I) (c.f. Table 3). The COM have not yet officially published their decision as to the renewal of exemptions 8(b) and 8(b)(II).

Table 3: Potential renewal of exemption III-8(b) as exemption III-8(b)(II)

No.	Requested exemption	Requested scope and dates of applicability
8(b)	Cadmium and its compounds in electrical contacts	Applies to categories 8, 9 and 11 Expires on <ul style="list-style-type: none">- [date of official publication of the COM decision in the Official Journal + 12 months] for cat. 11- [date of official publication of the COM decision in the Official Journal + 18 months] for category 8 medical devices including in-vitro diagnostic medical devices, and category 9 monitoring and control instruments including industrial monitoring and control instruments

² C.f. BIO IS, https://rohs.biois.eu/RoHS_Pack-23_Report_Final_20221220.pdf

8(b)(II)	<p>Cadmium and its compounds in electrical contacts used in:</p> <ul style="list-style-type: none"> - circuit breakers - thermal sensing controls - thermal motor protectors (excluding hermetic thermal motor protectors) - AC switches - DC switches 	<p>Applies to categories 8 and 9 from [date of the official publication of the COM decision in the Official Journal + 18 months + 1 day] on.</p> <p>Expires on</p> <ul style="list-style-type: none"> - 31 December 2023 for circuit breakers in rotating parts of computer tomography (CT) medical devices (category 8 medical devices others than in-vitro diagnostic medical devices) - 31 December 2025 for portable emergency defibrillators (cat. 8 medical devices others than in-vitro diagnostic medical devices) with a Declaration of Conformity (DOC) issued for the first time before 1 January 2015 - 31 December 2025 for other cat. 8 medical devices including in-vitro diagnostic medical devices, and for category 9 monitoring and control instruments including industrial monitoring and control instruments.
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Source: Deubzer et al. (2022)³

Please provide examples of switches in use by TMC members which would not be covered by the scope of the exemption 8(b)(II) if the COM decides to adopt the consultants' recommendation.

TMC reply to question 2:

As provided in the original submission request, the need for creating an open contact (vs solid state switching) is typically for electrical isolation purposes, where the safety standards require a minimum electrical clearance between contacts if it is being relied upon for safety isolation. Though this does include the examples proposed above, that does not cover all the electrical contacts that cat 9 utilizes to isolate circuits from high voltage circuits, inductive load switching and control relays. We therefore recommend that the original verbiage of electrical contacts remain in place for this renewal.

³ C.f. BIO IS, https://rohs.biois.eu/RoHS_Pack-23_Report_Final_20221220.pdf



3. We understand that TMC request the renewal of the exemption for the maximum 7 years. Producers of switches/electrical contacts have, however, already turned most of their product portfolios to cadmium-free contacts in the past years and will have finalized this conversion for the last few percentages of their products by the end of 2023 latest (protective switches, i.e. circuit breakers, thermal sensing controls and motor protectors) and until end of 2025 for the other switches. The applicants agreed to these expiry dates for all categories of EEE.

How would TMC members maintain their production with cadmium-contacts if their production has already stopped largely and will stop completely in the very near future?

TMC reply to question 3:

Due to TMC's high-mix, low volume, life (last) time buy of components is performed to complete projected production and support needs to avoid re-design and requalification for existing equipment.

Furthermore, in highly specialized applications where cadmium contacts cannot be substituted, niche manufacturers can provide the required parts where the criticality of the part can bare the cost of such a premium part. This represents a small fraction of the already limited amount of CdO used for Cat 9, Industrial (< 600g year), but will enable the continued manufacturing of highly specialized equipment (like Electron Microscopes).

4. You argue that cat. 9 industrial monitoring and control instruments have long life times (up to 40 years according to the figure on page 10 of your renewal request), which is one of your arguments for the renewal of exemption 8(b) and other exemptions.

RoHS Art. 4(4)(f) allows spare parts for repair, reuse, updating of functionalities or upgrading of capacity to be used in EEE that was placed on the market prior to the expiry of an exemption as if this exemption was still valid. The crucial aspect in our point of view is therefore is the model life time, i.e. how long a specific type or model of IMCI is manufactured before it is replaced by a redesigned/new successor model.

What are the model life times of cat. 9 IMCI? Could you please give us examples? In cases of very long model life times, please also explain how such devices can maintain their market position in a business environment with rapid technological progress.

TMC reply to question 4:

As regards the question of how long a specific type or model of IMCI is manufactured before it is replaced by a redesigned/new successor model, TMC would like to point to section 3.2 of the submitted SEA document, which covers this aspect. Nominally, this time period is 10 years across our portfolio of many thousands of equipment models.

Regarding the question of how very long model life time devices can maintain their market position, TMC would like to highlight that while technology moves at a rapid pace, the test and measurement equipment produced by TMC is limited by *physics* rather than *technology changes*. Additionally, the communications, life sciences or automotive sectors are examples of just three of the end-use markets TMC addresses, where the TMC equipment actually *enables* this rapid technology development.

For example, the technologies now incorporated into vehicles for autonomous driving aids have developed from existing aerospace and defence technologies that the TMC sector has been providing test equipment to for decades.

Please note that answers to these questions will be published as part of the evaluation of this exemption request. If your answers contain confidential information, please provide a version that can be made public along with a confidential version in which proprietary information is clearly marked and which indicates “CONFIDENTIAL” in the file name.

We ask you to kindly provide the information in formats that allow copying text, figures and tables so that they can be included into the review report.