

## Consultation Questionnaire Exemption Request No. 2017-6

***Exemption for „Bis (2-ethylhexyl) phthalate in rubber parts such as O-rings, seals, vibration dampers, gaskets, hoses, grommets and cap-plugs that are used in engine systems including exhausts and turbochargers that are designed for use in equipment that is not designed solely for consumer use“***

### Abbreviations and Definitions

DEHP	Bis(2-ethylhexyl)phthalate
EUROMOT	The European Association of Internal Combustion Engine Manufacturers

### Background

The Oeko-Institut and Fraunhofer IZM have been appointed by the European Commission, within a framework contract<sup>1</sup>, for the evaluation of applications for exemption from Directive 2011/65/EU (RoHS 2), to be listed in Annexes III and IV of the Directive.<sup>1</sup>

The European Association of Internal Combustion Engine Manufacturers (EUROMOT) has submitted a request for the above mentioned exemption, which has been subject to a first completeness and plausibility check. The applicant has been requested to answer additional questions and to provide additional information, available on the request webpage of the stakeholder consultation (<http://rohs.exemptions.oeko.info/index.php?id=283>).

EUROMOT requests an exemption for different rubber components plasticised with DEHP and used in engines that fall under category 11. According to the applicant, there are no alternative plasticizers available that provide reliable rubber material with the specific requirements such as prevention of leakage, sealing of engine parts and protection of vibration or dirt and fluids over the long lifetime of the engines for which the exemption is requested. EUROMOT lists the following rubber components in relation to the exemption request, detailing the relevant essential properties for each component sub-group:

- Flexible hoses: resistance to any contact material (e.g. fuel, lubricant oil, coolants, gases) possibly under pressure and in combination with severe surrounding conditions (e.g. dirty building sites, chemical plant or oil refineries), resistance to vibration and heat;
- Gaskets: resistance to chemicals, temperature and vibration;
- Seals, O-rings: resistance to oil, engine fluid, exhaust gases, reliability throughout maintenance of the seal under conditions such as vibration or compression;
- Grommets and cap plugs: resistance to dirt, engine fluids, protection of electrical connections;
- Vibration isolators or dampers: resistance to vibration.

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<sup>1</sup> The contract is implemented through Framework Contract No. FWC ENV.A.2/FRA/2015/0008 of 27/03/2015, led by Oeko-Institut e.V.

Alternative plasticisers and alternative polymers are discussed by EUROMOT based on literature data because *“manufacturers of the types of rubber components that are used in engines have carried out little research and none appears to be published”*.

According to the applicant, the essential chemical and physical properties of DEHP that provide the combination of hardness / stiffness and flexibility of the rubber material that remains stable over the lifetime of the engines are a low volatility, low migration rates, low solubility of the plasticiser in the contact fluids, high viscosity. EUROMOT states that no alternative plasticizer is available that provides these properties in the rubber polymers that are usually used in engines (chloroprene rubber, nitrile rubber (NBR), ethylene propylene polymers (EPM and EPDM rubbers) and epichlorohydrin (ECO) rubber). EUROMOT also discusses alternative polymers but states that they act differently / provide a lower performance in relation to essential requirements.

It is understood that EUROMOT has not carried out own testing because it will take *“at least one year or maybe longer to find suitable substitutes with the correct ranges of essential properties.”* Only if these are met for all different components, EUROMOT states, would it be *“worthwhile carrying out extensive reliability and durability testing.”*

EUROMOT schedules the following stages and timeframes, once a possible substitute is identified:

- Component testing comprising a range of tests: 1 year;
- Engine reliability testing in laboratory conditions: 2 years;
- Reliability testing in finished equipment: 2 years.

According to EURMOT, the total elapsed time per engine type once suitable RoHS compliant rubber parts are available will be about 5 years.

According to the applicant, the engines are used in types of equipment *“which includes stationary equipment and those types of machinery that can be moved from location to location, so are not permanently fixed at one location, but are stationary when in use, which can be for long periods”*. The following examples are given by EUROMOT:

- *“Fixed and mobile generators*
- *Fixed and mobile compressors*
- *Agricultural irrigation pumps. These are standalone equipment which may be moved from one field to another, but are stationary when in use.*
- *Drilling machines*
- *Rock crushers*
- *Welding sets that are mounted onto trailers.*
- *Commercial types of equipment that may be sold to leasing companies and that could be used by both professionals and consumers. These would include chain saws, leaf blowers, some types of mowers, small-size diggers, etc.”*

EUROMOT requests the maximum validity period for the exemption. According to Article 5 (2) of the RoHS 2 Directive, the maximum validity period is 5 years for EEE falling under category 11.

For details, please check the applicant's exemption request at:  
<http://rohs.exemptions.oeko.info/index.php?id=283>

The objective of this consultation and the review process is to collect and to evaluate information and evidence according to the criteria listed in Art. 5 (1) (a) of Directive 2011/65/EU (RoHS II), which can be found under:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32011L0065:EN:NOT>

If you would like to contribute to the stakeholder consultation, please answer the following questions:

## Questions

1. The applicant has requested an exemption, proposing the following wording formulation:  
*“Bis (2-ethylhexyl) phthalate in rubber parts such as O-rings, seals, vibration dampers, gaskets, hoses, grommets and cap-plugs that are used in engine systems including exhausts and turbochargers that are designed for use in equipment that is not designed solely for consumer use”*. Relevant equipment falls under category 11 according to EUROMOT and thus the exemption could be specified for this category.
  - a. Do you agree with the scope of the exemption as proposed by the applicant?
  - b. Please suggest an alternative wording and explain your proposal, if you do not agree with the proposed exemption 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.
2. Please provide information concerning possible substitutes or developments that may enable reduction, substitution or elimination, at present or in the future, of DEHP in *“rubber parts such as O-rings, seals, vibration dampers, gaskets, hoses, grommets and cap-plugs that are used in engine systems including exhausts and turbochargers that are designed for use in equipment that is not designed solely for consumer use”*;
  - a. In this regard, please provide information as to alternatives that may cover part or all of the applicability range of DEHP in *“rubber parts such as O-rings, seals, vibration dampers, gaskets, hoses, grommets and cap-plugs that are used in engine systems including exhausts and turbochargers that are designed for use in equipment that is not designed solely for consumer use”*;
  - b. Please provide quantitative data as to application specifications to support your view.
3. Please provide information as to research initiatives which are currently looking into the development of possible alternatives for some or all of the application range of DEHP in rubber parts such as O-rings, seals, vibration dampers, gaskets, hoses, grommets and cap-plugs that are used in engine systems including exhausts and turbochargers that are designed for use in equipment that is not designed solely for consumer use.
  - a. Please explain what part of the application range is of relevance for such initiatives (in what applications substitution may be possible in the future).
  - b. Please provide a roadmap of such on-going research (phases that are to be carried out), detailing the current status as well as the estimated time needed for further stages.

4. Please provide respective information if you support to split the exemption request addressing e.g.
  - a. Specific rubber engine components with different content ranges of DEHP;
  - b. Specific components in relation to different timeframes for expected substitution;
  - c. Relevant application sub-groups in relation to the environmental conditions of component operation and the related performance that substitutes must provide.
5. As part of the evaluation, socio-economic impacts shall also be compiled and evaluated. For this purpose, please provide details in respect of the following:
  - a. EUROMOT estimates the volume of EEE concerned to be around 68.000 engines per year, excluding the “*relatively small number of engines used in equipment that is typically leased to both consumers and professionals.*” Please provide respective information if you do not agree with this estimation.
  - b. Amount of DEHP to be avoided should the exemption not be granted;
  - c. Estimations as to possible additional waste to be generated through a forced phase-out (if relevant);
  - d. Estimations of possible impacts on employment in total, in the EU and outside the EU, should the exemption not be granted. Please detail the main sectors in which possible impacts are expected – relevant engine and equipment manufacturers, supply chain, retail, etc.
  - e. Please estimate additional costs associated with a forced substitution should the exemption not be granted, and how this is divided between various sectors (e.g. private, public, industry: manufacturers, suppliers, retailers).

**In case parts of your contribution are confidential, please provide your contribution in two versions (public /confidential). Please also note, however, that requested exemptions cannot be granted based on confidential information!**

**Finally, please do not forget to provide your contact details (Name, Organisation, e-mail and phone number) so that Oeko-Institut/Fraunhofer IZM can contact you in case there are questions concerning your contribution.**