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MKS RoHS Position Statement

Revision K – October 2018

Directive Background:

The European Union has adopted a Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (the **RoHS Directive** or **Directive**), requiring EU Member States to ensure that certain electrical and electronic equipment (**EEE**), including certain cables and spare parts, placed on the market does not contain higher than specified levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE). Specific applications are exempted, *inter alia* with respect to medical devices and monitoring and control instruments.

The RoHS Directive was first adopted in 2002 and updated in 2011. The update of the Directive – commonly referred to as the “recast” – concerns, *inter alia*, the scope of equipment covered. Unlike the 2002 version of the Directive, the current RoHS Directive is, in principle, based on an open scope and not limited to specific product categories. However, the substance restrictions referred to above are only gradually extended to those product categories that were out of scope of the 2002 version of the Directive. Also, several product groups remain excluded from the RoHS Directive’s scope. These include exclusions that refer to “large-scale stationary industrial tools” and “large-scale fixed installations”.

The Commission has adopted an expansion of the number of banned substances under the RoHS Directive to also cover Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP). The expansion will, in principle, apply from 22 July 2019 onwards, but medical devices and monitoring and control instruments will not be captured until 22 July 2021 (see further details below). We are closely monitoring this issue and will continue to adapt our compliance strategy to applicable requirements.

MKS RoHS Product Compliance:

MKS has been working with suppliers and customers for years and has invested significant resources to ensure compliance with applicable requirements. MKS maintains a comprehensive RoHS compliance program and continues to closely monitor and adapt to developments in this area. Aspects of our compliance program about which we frequently receive inquiries are described below. This is not, however, intended to be an exhaustive discussion of all requirements that may affect us or an assessment of any individual products or product lines.

OEM Products

Some MKS product lines are delivered to OEM customers to be included as part of semiconductor manufacturing or medical diagnostic equipment.

- **Semiconductor Market** - Based on internal assessments, discussions with key customers and confirmation with outside regulatory attorneys, we believe that most of our semiconductor customers' equipment should be considered to be “large-scale stationary industrial tools” and/or “large-scale fixed installations” under the RoHS Directive. Accordingly, MKS products that are specifically designed and installed as part of such large-scale industrial tools, large-scale fixed installations or other exempt equipment, are also likely to fall outside the scope of the RoHS Directive. It is unclear, however, how certain RoHS Directive revisions will be interpreted by EU Member States, including relevant enforcement and judicial authorities. We are closely monitoring this issue and will continue to adapt our compliance strategy to applicable requirements.
- **Medical Equipment Market** - Based on internal assessments, discussions with key customers and confirmation with outside regulatory attorneys, we believe that most of our medical market customers' equipment falls into the category defined as “medical devices”. In principle, medical devices must comply with requirements under the RoHS Directive as of 22 July 2014. However, based on said assessments, discussions and confirmation, we also believe that most of our medical equipment customers' equipment should be considered to be “large-scale fixed installations” under the RoHS Directive. Accordingly, MKS



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products that are specifically designed and installed as part of such large-scale fixed installations (and other exempt equipment), are likely to fall outside the scope of the RoHS Directive. We are closely monitoring this issue and will continue to adapt our compliance strategy to applicable requirements.

Stand-alone Products

Some MKS product lines are sold as "stand-alone" products that are not incorporated into OEM equipment. Based on internal assessments and confirmation with outside regulatory attorneys, we believe that most of these other product lines fall into the category defined as "monitoring and control instruments". Unless another exemption applies, industrial monitoring and control instruments must comply with requirements under the RoHS Directive as of 22 July 2017. We are closely monitoring this issue and will continue to adapt our compliance strategy to applicable requirements.

Expansion of RoHS banned substances

For completeness sake we note that the restriction of DEHP, BBP, DBP and DIBP apply to (industrial) control instruments (and medical devices) from 22 July 2021. Based on internal assessments and confirmation with outside regulatory attorneys, we believe that most of our product lines fall into this category, and are thus not captured until said date. We are closely monitoring this issue and will continue to adapt our compliance strategy to applicable requirements..

Risks Beyond MKS' Control:

1. Directives are addressed towards the EU Member States, requiring implementation into their national laws (that are binding towards companies). Even where we or our products are not directly subject to obligations under the Member States' implementing laws pursuant to the RoHS Directive, certain of our EU customers or business partners may be, depending on their specific operations and products. This position statement does not address all of the RoHS compliance considerations that may be relevant to such parties in light of their particular circumstances and is not intended as compliance advice. Furthermore, the RoHS Directive is implemented and enforced through local laws and regulations in each EU Member State; affected parties must therefore ensure compliance with the local requirements of each relevant jurisdiction.

2. Any EU Member State or any other enforcement or regulatory authority may disagree with our assessments. Because the RoHS Directive, as updated by the "recast", is relatively new, subject to further revision, may be enforced inconsistently within and among EU Member States and for other reasons, it is impossible to predict with certainty all requirements under the RoHS Directive.

3. It is possible that certain parts, components or process materials may become unavailable as a result of RoHS related developments in the supply chain. If MKS needs to make process or design changes due to such unavailability, then there may be an impact on our products and/or delays in shipment. We intend to continue to serve the EU and other markets in compliance with applicable laws and expect our suppliers and customers to be partners in that effort.

DISCLAIMER:

THIS POSITION STATEMENT IS FOR INFORMATIONAL PURPOSES ONLY, DOES NOT CONSTITUTE A LEGAL REPRESENTATION AND DOES NOT CREATE OR CONFIRM THE EXISTENCE OF ANY RIGHTS, LIABILITIES OR OBLIGATIONS OF MKS, ITS AFFILIATES OR ANY OF THEIR RESPECTIVE CUSTOMERS OR ANY OTHER PERSON. THE SALE OF MKS PRODUCTS SHALL BE GOVERNED EXCLUSIVELY BY THE TERMS AND CONDITIONS SET FORTH IN THE APPLICABLE MKS SALE AGREEMENT.



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MKS' assessments contained in this position statement are solely MKS' opinion. MKS does not guarantee the accuracy or completeness of its evaluation and neither MKS' customers nor any other party may rely on this position statement. The information contained herein is based upon information MKS has obtained as of the date indicated at the top of this position statement. MKS does not have any obligation to update this position statement. Any MKS customer or other person needing information or guidance about the RoHS Directive should seek advice of legal counsel.