



RoHS (Restriction of Hazardous Substances)

Certificate of Compliance

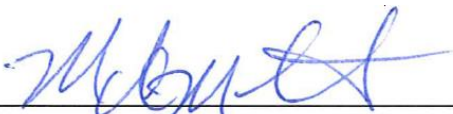
MKS Instruments, Inc. hereby certifies that the products listed in the table below are compliant with the European Union’s RoHS directive 2011/65/EU (effective 22 July 2017) regarding the restriction of the use of certain hazardous substances in electrical and electronic equipment. The products listed below are compliant to RoHS requirements for concentration limitations, by weight of homogeneous material, of the following six substances:

| | |
|---------------------------------------|------------------|
| Lead | <0.1% (1000 PPM) |
| Mercury | <0.1% (1000 PPM) |
| Cadmium | <0.01% (100 PPM) |
| Hexavalent Chromium | <0.1% (1000 PPM) |
| Polybrominated Biphenyls (PBB) | <0.1% (1000 PPM) |
| Polybrominated Diphenyl Ethers (PBDE) | <0.1% (1000 PPM) |

| <u>Product</u> | <u>RoHS Compliant Part Number</u> |
|------------------|-----------------------------------|
| TIE-BAR ASSEMBLY | M-TB-46 |

The above thresholds are not in place for any legally allowable exemptions per Annex III of the aforementioned directive. If such exemptions are in use, they are noted on the attached table. If no exemptions are in use, then no further information is provided.

All information provided in this Certificate of Compliance is accurate to MKS’ knowledge as of the date of this certification. This confirmation is made based our internal engineering risk analysis of the individual items possibly being present along with the best technical information made available to MKS from its material suppliers.

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|  <hr style="border: 0; border-top: 1px solid black;"/> | <hr style="border: 0; border-top: 1px solid black;"/> 6/6/18 Date |
| Mark M. Gitin, Ph.D. Vice-President and General Manager Photonics Business Unit | |

MKS RoHS2 PRODUCT EXEMPTION LISTING

| MKS Product Number | MKS Product Description | Annex III Exemption # | Annex III Exemption Description |
|-----------------------|----------------------------|--------------------------|------------------------------------|
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