

Q & A about RoHS Compliance Products

Q-1: Which RoHS exemptions clauses are adopted by NeoPhotonics' products?

A: the below exemption clauses have been conditionally adopted by NeoPhotonics:

6c. Copper alloy containing up to 4% lead by weight.

7a. Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead)

7c1. Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound;

13a. Lead in white glasses used for optical applications

Note: Available RoHS exemption clauses are updated based on the latest EU commission decision amending for RoHS (2015/863/EU) annex exemptions.

Q-2: What is the definition for lead-free product?

A: NeoPhotonics lead-free definition, 2nd level interconnect homogenous materials of Products do not contain lead (Pb) in concentrations greater than 0.1wt%, other materials are RoHS compliant.

Note: The definition of a 2nd level interconnect is the interconnection made by the attachment of a device or component to the printed circuit board.

Q-3: What is RoHS compliance with or without exemption product?

A: NeoPhotonics supplies products which meet these designations according to the definitions shown below.

① RoHS compliance without exemption applied products: These products are RoHS compliant and there is no any exemption clause applied, the component and materials do NOT contain RoHS restricted substances greater than:

a) Quantity limit of 0.1% (1000 PPM) by weight at raw homogenous materials level for: Lead (Pb), Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP) and

b) Quantity limit of 0.01% (100 PPM) for Cadmium

② RoHS compliance with exemption applied products: These products are RoHS compliant with the exception of lead(Pb) which maybe be found for the specific applications listed in the Exemptions Annex of the directive, the components and materials do not contain RoHS restricted substances greater than:

a) Quantity limit of 0.1% (1000 PPM) by weight at raw homogenous materials level for: Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP); and

b) Quantity limit of 0.01% (100 PPM) for Cadmium

Q-4: Which markings, symbols or labels distinguish lead-free products?

A: According to the standard of IPC-1066, all lead-free and RoHS compliant products must have a special lead-free symbol mark on the lowest level shipping package container. If space permits, the

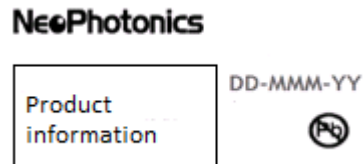
product should be marked with the special lead-free symbol.

For examples of the lead-free symbol and relevant labels please refer to the figures below.

Figures-1: the lead-free symbol



Figures-2: the label attached to the product if space permits.



Figures-3: the label attached to the lowest level shipping package container, e.g. a carton.



Q-5: Which tests have been performed to ensure lead-free/RoHS compliant products reliability?

A: Testing of all NeoPhotonics products is based on the Telcordia standard for reliability assurance of opto-electronic products, GR-468 CORE. Tests include mechanical shock, frequency conversion vibration, temperature cycling, damp heat, accelerated aging life test, and others.