

Caddock Resistor Products and the Recast EU RoHS Directive

Effective January 1, 2013 the “Recast” RoHS Directive, 2011/65/EU, replaced the original RoHS Directive, 2002/95/EU. This document describes the Compliance of Caddock High Performance Film Resistors to the EU RoHS Directive, 2011/65/EU. The scope of the EU RoHS Directive is generally focused on “personal use” electronics (the type of electronics equipment that can be found in the home and office and includes portable tools). This “personal use” electronics, with its short life cycle, is the largest contributor to the electronics equipment waste stream.

“RoHS Compliant” Caddock Resistor Products are those which comply with the European Union’s (RoHS) “Restriction on the Use of Hazardous Substances in Electrical and Electronic Equipment”, Directive 2011/65/EU, which means that either:

- 1) the levels of Restricted Substances listed in Annex II of 2011/65/EU in the resistor product are below the maximum concentration values as described by 2011/65/EU, or
- 2) an “Application Exemption” described in Annex III of 2011/65/EU applies to the use of the material in the resistor.

The following Caddock Catalog Resistor products, are “RoHS Compliant” per the EU RoHS Directive 2011/65/EU:

- Type CC Resistors
- Type CHR Resistors
- Type HVD Voltage Dividers
- Type MG Resistors
- Model MP2060 (Date Code 0612 and later)
- Models: MP820, MP821 (Date Code 0801 and later)
- Models: MP825, MP850
- Models: MP915, MP916, MP925, MP930, MP9100
- Type MS Resistors
- Type MV Resistors
- Type TF Resistors
- Type TG Resistors
- Type THV Voltage Dividers
- Type USF Resistors
- Type USG Resistors
- Type USVD Voltage Dividers
- Type T912 and T914 Resistor Networks
- Type 1776 Decade Voltage Dividers
- Type 1787 Resistor Networks
- Type T1794 Resistor Networks

Notes on Terminal Finish and Soldering:

For the Standard Catalog Terminal finish and compatibility with Lead(Pb)-Free Soldering Processes, please see the Caddock Applications Engineering Note AEN-0104.

Some Caddock Resistor products are supplied to specific customers (using a custom Caddock ordering part number) with a non-standard Sn/Pb Hot Solder Dipped Lead Finish, based on customer requirements. Parts supplied with this non-standard Sn/Pb Hot Solder Dip Lead Finish are not compliant with the EU RoHS Directive.

Some Caddock Resistor Products are intended for use in Applications that are outside the scope of the RoHS Directive.

The following products are either not compliant with the EU RoHS Directive, or are not compatible with the common High Temperature “Lead-Free” soldering processes. These resistor products are to be used in the equipment categories not covered by the EU RoHS Directive 2011/65/EU described in Article 2 (Scope), Para. 4: Large-Scale Industrial Tools Large-Scale Fixed Installations, Transportation Equipment (including Trains, Subways, Streetcars, Commercial Aircraft, etc.), Photovoltaic Installations, Industrial R&D Equipment. High Voltage Equipment designed for use above 1000 Volts ACrms, or 1500 Volts DC is also specifically exempted by Article 3, para. 1.

- Type MK Resistors*
- Type ML Resistors* (Can be replaced with Type MS)
- Type MM Resistors* (Can be replaced with Type MS)
- Type TK Resistors*
- Type TN Resistors*
- Type MX Resistors** (Can be replaced with Type MG)
- Type CD***
- Type LC***
- Model MP725***
- Type SR***

* These products use a molding material with a Lead (Pb) catalyst in a concentration higher than 0.10% (it is less than 1%), and are not EU RoHS compliant.

** The Type MX resistors have a Sn/Pb terminal finish

***These resistors are RoHS Compliant, but are not compatible with high temperature lead-free soldering processes. The bodies of these resistors must not exceed 219°C.

Additional Caddock Documents:

- AEN-0104 “Terminal Finish and Solder Process Information for Caddock Resistor Products”
- AEN-0106 “Customer Applications that are outside the Scope of the RoHS Directive”
- AEN-0107 “Caddock REACH Compliance Statement”

IMPORTANT NOTE: The EU RoHS Directive and Legislation are subject to change. If there are any changes in the legislation that affect any Caddock resistor products, Caddock will provide timely notification on the Caddock website: www.caddock.com