



**Crane Electronics, Inc.**  
**Power Solutions**  
10301 Willows Road NE  
Redmond, WA 98052  
T: +1 425.595.5038  
F: +1 425.869.7402  
[www.craneae.com/power](http://www.craneae.com/power)

Crane Electronics, Inc.

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**TO:** Our Valued Customers  
**FROM:** Brian Zito, Redmond Quality Systems Manager  
**SUBJECT:** **RoHS, WEEE and REACH Position for Interpoint™ Products**

In response to requests for information regarding materials used in our products, the following outlines our product compliance to Restriction of Hazardous Substances (RoHS), Waste Electrical & Electronic Equipment (WEEE) and Registration, Evaluation and Authorization of Chemicals (REACH) Initiatives. The purpose of this memorandum is to clarify our position with respect to the use of these materials as it relates to Interpoint catalog products (See Table A).

**100% Tin Position:**

100% tin, which is the most common lead-free solderable finish, is not allowed as a component termination for Interpoint MIL-PRF-38534 QML products ("883", class H and class K screening). Reference MIL-PRF-38534 paragraph E.4.2.7 for additional details. 100% tin terminated components are allowed and may be present in Interpoint non-QML products ("ES" or "Standard" screening). Customers who require the exclusion of 100% tin from their products should order QML products.

**BeO Position:**

BeO material is being phased out of Interpoint™ products, however, the following product families still may contain BeO: MTR, MFL and MOR.

**Cadmium Position:**

Our Interpoint Space products do not contain cadmium. Our non-Space products may contain trace amounts of cadmium in our thick-film metallization pastes. All cadmium containing pastes are being phased out of Interpoint products and are being replaced with equivalent RoHS compliant pastes that are cadmium-free.

**Lead-Free Position:**

Interpoint products are not lead-free. Internally, Interpoint products may contain Sn96 solder which is alloyed with 3% silver (Ag), not lead (Pb), for tin whisker mitigation. Our external finishes are lead-free except for the following:

- Solder-sealed cases (lid to header) – (See Table B)
- Customer requested solder-dipped pins
- Gull-wing surface-mount product pins are always tin-lead solder-dipped

**REACH Position:**

The amount of toxic substances in Interpoint catalog products, which may be imported into Europe, are well below the limits imposed by EU Directives. (See Table A)

**Zinc Position:**

Pure zinc is not used in Interpoint Power and Space products, though it might be found as an alloy or compound in some components (i.e. Ferrite magnetics MnZn).

**Table A****Summary of Interpoint Materials**

<b>Material</b>	<b>External Finishes Contain</b>	<b>Internal Elements Contain</b>	<b>EC No</b>	<b>CAS No</b>
Lead	Yes <sup>1</sup>	Yes <sup>2</sup>		
Cadmium	No	Yes <sup>3</sup>		
Mercury	No	No		
Hexavalent chromium	No	No		
2,4-Dinitrotoluene	No	No	204-450-0	121-14-2
4,4'-Diaminodiphenylmethane (MDA)	No	No	202-974-4	101-77-9
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	No	No	201-329-4	81-15-2
Acrylamide			201-173-7	79-06-1
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	No	No	287-476-5	85535-84-8
Aluminosilicate Refractory Ceramic Fibres	No	No		
Anthracene	No	No	204-371-1	120-12-7
Anthracene oil	No	No	292-602-7	90640-80-5
Anthracene oil, anthracene paste	No	No	292-603-2	90640-81-6
Anthracene oil, anthracene paste, anthracene fraction	No	No	295-275-9	91995-15-2
Anthracene oil, anthracene paste, distn. Lights	No	No	295-278-5	91995-17-4
Anthracene oil, anthracene-low	No	No	292-604-8	90640-82-7
Benzyl butyl phthalate (BBP)	No	< 0.1%	201-622-7	85-68-7
Bis(2-ethylhexyl)phthalate (DEHP)	No	No	204-211-0	117-81-7
Bis(tributyltin)oxide (TBTO)	No	No	200-268-0	56-35-9
Cobalt dichloride	No	No	231-589-4	7646-79-9
Diarsenic pentaoxide	No	No	215-116-9	1303-28-2
Diarsenic trioxide	No	No	215-481-4	1327-53-3

<b>Material</b>	<b>External Finishes Contain</b>	<b>Internal Elements Contain</b>	<b>EC No</b>	<b>CAS No</b>
Dibutyl phthalate (DBP)	No	< 0.1%	201-557-4	84-74-2
Diisobutyl phthalate	No	No	201-553-2	84-69-5
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified	No	No	247-148-4 & 221-695-9	25637-99-4 & 3194-55-6
Alpha-hexabromocyclododecane	No	No		134237-50-6
Beta-hexabromocyclododecane	No	No		134237-51-7
Gamma-hexabromocyclododecane	No	No		134237-52-8
Lead chromate	No	No	231-846-0	7758-97-6
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	No	No	235-759-9	12656-85-8
Lead hydrogen arsenate	No	No	232-064-2	7784-40-9
Lead sulfochromate yellow (C.I. Pigment Yellow 34)	No	No	215-693-7	1344-37-2
Pitch, coal tar, high temp.	No	No	266-028-2	65996-93-2
Sodium dichromate	No	No	234-190-3	7789-12-0 & 10588-01-9
Triethyl arsenate	No	No	427-700-2	15606-95-8
Tris(2-chloroethyl)phosphate	No	No	204-118-5	115-96-8
Zirconia Aluminosilicate Refractory Ceramic Fibres	No	No		
Cobalt(II) diacetate	No	No	200-755-8	71-48-7
Trichloroethylene	No	No	201-167-4	79-01-6
1,2,3-Trichloropropane	No	No	202-486-1	96-18-4
2-Ethoxyethanol	No	No	203-804-1	110-80-5
2-Ethoxyethyl acetate	No	No	203-839-2	111-15-9
Hydrazine	No	No	206-114-9	302-01-2 7803-57-8
Cobalt(II) carbonate	No	No	208-169-4	513-79-1
1-Methyl-2-pyrrolidone	No	No	212-828-1	872-50-4

<b>Material</b>	<b>External Finishes Contain</b>	<b>Internal Elements Contain</b>	<b>EC No</b>	<b>CAS No</b>
Disodium tetraborate, anhydrous	No	No	215-540-4	1303-96-4 1330-43-4 12179-04-3
Chromium trioxide	No	No	215-607-8	1333-82-0
Chromic acid	No	No	231-801-5	7738-94-5
Sodium chromate	No	No	231-889-5	7775-11-3
Potassium dichromate	No	No	231-906-6	7778-50-9
Potassium chromate	No	No	232-140-5	7789-00-6
Strontium chromate	No	No	232-142-6	7789-06-2
Ammonium dichromate	No	No	232-143-1	7789-09-5
Boric acid	No	No	233-139-2 234-343-4	10043-35-3 11113-50-1
Cobalt(II) sulphate	No	No	233-334-2	10124-43-3
Cobalt(II) dinitrate	No	No	233-402-1	10141-05-6
Tetraboron disodium heptaoxide, hydrate	No	No	235-541-3	12267-73-1
Dichromic acid	No	No	236-881-5	13530-68-2
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	No	No	271-084-6	68515-42-4
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	No	No	276-158-1	71888-89-6

## Notes:

- 1) Products with solder-sealed cases and solder-dipped pins contain lead.
- 2) Products may contain solder with lead (Pb) content.
- 3) Our Interpoint Space products do not contain cadmium. Trace amounts of cadmium may be detected in the thick film metallization used on our standard power, non-Space, products. The cadmium in these pastes acts as a bonding agent and is in the form of cadmium oxide which, once fired, will not sublime or decompose into its elemental constituents. All cadmium containing pastes are being phased out of Interpoint products and are being replaced with equivalent RoHS compliant pastes that are cadmium-free.

**Table B**

**Summary of Pure Tin**

All MIL-PRF-38534 compliant products (Class H and K) are free of 100% tin on any element finish, internal or external. Product series FMD, MFW, MTW, MHE, MTO, FM, FMA, FMB, HR700, HR300 and HR150, as well as the non-QML MTR duals, have 100% fused-tin finish on the product case and pins. This is a 100% matte tin finish which has been hot dipped into oil during the package and cover manufacturing process.

Products Containing Pure Tin

Model	Screening Level		
	/883	/ES	/STD
MTR	Free of 100% of tin	Duals only Tin Case	Duals only Tin Case
FMD	Not available	Tin Case	Tin Case
Model	/ES	/STD	
MFW	Tin Case	Tin Case	
MTW	Tin Case	Tin Case	
MHE	Tin Case	Tin Case	
MTO	Tin Case	Tin Case	
FM	Tin Case	Tin Case	
FMA	Tin Case	Tin Case	
FMB	Tin Case	Tin Case	
Model	/HR		
HR700	Tin Case		
HR300	Tin Case		
HR150	Tin Case		
HR120	Tin Case		

Sincerely,



Brian Zito  
 Quality Systems Manager, Redmond  
 brian.zito@crane-eg.com