MODEL 425 SERIES CRYSTAL

MATERIAL CONTENT DECLARATION REPORT

CTS Electronic Components follows the Joint Industry Guidelines (JIG) industry consortia recommendations as defined in controlling document JIG-101 for "Green Compliance" Level A and Level B material content restrictions and standardized reporting.

RoHS COMPLIANT YES
RoHS EXEMPTIONS NO

Level A – Restricted Material/Substance	Material/Substance Category intentionally added or present (Y/N) above threshold level	If Yes, Material Substance Mass (g/PPM)	If Yes, Detailed Material Substance Information
Asbestos	N		
Azo colorants [1]	N		
Cadmium/Cadmium compounds [2]	N		
Hexavalent Chromium / Hexavalent Chromium Compounds [2]	N		
Lead / Lead Compounds [2]	N		
Mercury / Mercury Compounds [2]	N		
Ozone Depleting Substances (CFCs, HCFCs, HBFCs, carbon tetrachloride, etc)	N		
Polybrominated Biphenyls (PBBs) [2]	N		
Polybrominated Diphenylethers (PBDEs) [2]	N		
Polychlorinated Biphenyls (PCBs)	N		
Polychlorinated Naphthalenes (more than 3 chlorine atoms)	N		
Radioactive Substances	N		
Shortchain Chlorinated Paraffins	N		
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	N		
Tributyl Tin Oxide (TBTO)	N		

(1) Applicable to products and subparts that may come into direct contact with human skin.
(2) Reported substances per EU RoHS Directive 2002/95/EC.

Level B – Reported Material/Substance	Material/Substance Category intentionally added or present (Y/N) above threshold level	If Yes, Material Substance Mass (g/PPM)	If Yes, Detailed Material Substance Information
Antimony/Antimony Compounds	N		
Arsenic/Arsenic Compounds	N		
Beryllium/Beryllium Compounds	N		
Bismuth/ Bismuth Compounds	N		
Brominated Flame Retardants (other than PBBs or PBDEs)	N		
Nickel/Nickel Compounds (external applications only)	N		
Phthalates	N		
Selenium/Selenium Compounds	N		
Polyvinyl Chloride (PVC)	N		

CTS Electronic Components

ELEMENTAL ANALYSIS

MODEL 425 SERIES CRYSTAL

RoHS/Green Compliant (6/6) | WEIGHT (mg) 9.0001 | MSL RATING 1 | MAX REFLOW 260°C | e4

PRODUCT BREAKDOWN	MATERIAL	CAS NUMBER	WEIGHT OF BOM ITEM (g)	% BY WEIGHT (Comp. Item)	mg/UNIT	% BY WEIGHT OF UNIT	REMARKS/SOURCE OF INFORMATION
Package							
Ceramic	Al_2O_3 (aluminium trioxide)	1344-28-1	0.00777865	95.05%	7.3936	82.15%	
Conductors	W (tungsten) [Base]	7440-33-7		4.16%	0.3236	3.60%	
	Ni (nickel) plate [Barrier]	7440-02-0		0.44%	0.0342	0.38%	
	Au (gold) plate [Finish]	7440-57-5		0.35%	0.0272	0.30%	
				100.00%	**7.7787**		
Seal Ring	Fe (iron) kovar	7439-89-6	0.00029215	53.00%	0.1548	1.72%	
	Ni (nickel) Kovar	7440-02-0		29.00%	0.0847	0.94%	
	Co (cobalt) Kovar	7440-48-4		17.00%	0.0497	0.55%	
	Au (gold) plate	7440-57-5		1.00%	0.0029	0.03%	
				100.00%	**0.2922**		
Final Assembly							
Crystal Blank	SiO_2 (silicon dioxide)	14808-60-7	0.00011845	41.38%	0.0490	0.54%	
	Cr plate (chromium)	7440-47-3		21.98%	0.0260	0.29%	
	Ag plate (silver)	7440-22-4		36.64%	0.0434	0.48%	
				100.00%	**0.1185**		
Blank Adhesive	Ag (silver)	7440-22-4	0.00004370	75.00%	0.0328	0.36%	
	Pd (palladium)	7440-05-3		1.00%	0.0004	0.00%	
	Undecane $[CH_3(CH_2)_9CH_3]$	1120-21-4		10.00%	0.0044	0.05%	
	Dodecane $[CH_3(CH_2)_{10}CH_3]$	112-40-3		4.00%	0.0017	0.02%	
	Silica $[Si(CH_3)_4]$	7631-86-9 99439-28-8		10.00%	0.0044	0.05%	
				100.00%	**0.0437**		
Metal Cover	Fe (iron) kovar	7439-89-6	0.00076710	53.00%	0.4066	4.52%	
	Ni (nickel) Kovar	7440-02-0		29.00%	0.2225	2.47%	
	Co (cobalt) Kovar	7440-48-4		17.00%	0.1304	1.45%	
	Ni (nickel) kovar, plate	7440-02-0		1.00%	0.0077	0.09%	
				100.00%	**0.7671**		
		Totals:	**0.0090001**		**9.0001**	**100.00%**	

MATERIALS COMBINED	CAS NUMBER	WEIGHT OF MATERIAL (mg)	% BY WEIGHT OF UNIT
Ag (silver)	7440-22-4	0.0762	0.85%
Al_2O_3 (aluminium trioxide)	1344-28-1	7.3936	82.15%
Au (gold)	7440-57-5	0.0302	0.33%
Co (cobalt)	7440-48-4	0.1801	2.00%
Cr (chromium)	7440-47-3	0.0260	0.29%
Dodecane $[CH_3(CH_2)_{10}CH_3]$	112-40-3	0.0018	0.02%
Fe (iron)	7439-89-6	0.5614	6.24%
Ni (nickel)	7440-02-0	0.3491	3.88%
Pd (palladium)	7440-05-3	0.0004	0.00%
SiO_2 (silicon dioxide)	14808-60-7	0.0490	0.54%
Silica $[Si(CH_3)_4]$	7631-86-9 99439-28-8	0.0044	0.05%
Undecane $[CH_3(CH_2)_9CH_3]$	1120-21-4	0.0044	0.05%
W (tungsten)	7440-33-7	0.3236	3.60%
		9.0001	100.00%