



MODEL 636 SERIES OSCILLATOR

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		



ELEMENTAL ANALYSIS

MODEL 636 SERIES OSCILLATOR

RoHS/Green Compliant
(6/6)

WEIGHT
(mg)
55.3170

MSL
RATING
1

MAX
REFLOW
260°C



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 ₂ O ₃ (aluminium trioxide)	1344-28-1	0.038240	95.05%	36.3471	65.71%	
Conductors	W (tungsten) [Base]	7440-33-7		4.16%	1.5908	2.88%	
	Ni (nickel) plate [Barrier]	7440-02-0		0.44%	0.1683	0.30%	
	Au (gold) plate [Finish]	7440-57-5		0.35%	0.1338	0.24%	
				100.00%	38.2400		
Seal Ring	Fe (iron) kovar	7439-89-6	0.005690	53.00%	3.0157	5.45%	
	Ni (nickel) Kovar	7440-02-0		29.00%	1.6501	2.98%	
	Co (cobalt) Kovar	7440-48-4		17.00%	0.9673	1.75%	
	Au (gold) plate	7440-57-5		1.00%	0.0569	0.10%	
				100.00%	5.6900		
Sub-Assembly							
Silicon Die (IC)	Si (silicon)	7440-21-3	0.001080	98.50%	1.0638	1.92%	
	Al (aluminium)	7429-90-5		1.50%	0.0162	0.03%	
				100.00%	1.0800		
Die Adhesive	Ag (silver)	7440-22-4	0.000960	75.00%	0.7200	1.30%	
	Bisphenol F Epoxy Resin	54208-63-8		20.00%	0.1920	0.35%	
	1,4 - Butanediol Diglycidyl Ether	2425-79-8		5.00%	0.0480	0.09%	
				100.00%	0.9600		
Die Bond Wire	Au (gold)	7440-57-5	0.000182	100.00%	0.1820	0.33%	
				100.00%	0.1820		
Final Assembly							
Crystal Blank	SiO ₂ (silicon dioxide)	14808-60-7	0.001030	41.38%	0.4262	0.77%	
	Cr plate (chromium)	7440-47-3		21.98%	0.2264	0.41%	
	Ag plate (silver)	7440-22-4		36.64%	0.3774	0.68%	
				100.00%	1.0300		
Blank Adhesive	Ag (silver)	7440-22-4	0.000380	75.00%	0.2850	0.52%	
	Pd (palladium)	7440-05-3		1.00%	0.0038	0.01%	
	Undecane [CH ₃ (CH ₂) ₉ CH ₃]	1120-21-4		10.00%	0.0380	0.07%	
	Dodecane [CH ₃ (CH ₂) ₁₀ CH ₃]	112-40-3		4.00%	0.0152	0.03%	
	Silica [Si(CH ₃) ₄]	7631-86-9 99439-28-8		10.00%	0.0380	0.07%	
					100.00%	0.3800	
Metal Cover	Fe (iron) kovar	7439-89-6	0.007755	53.00%	4.11015	7.43%	
	Ni (nickel) Kovar	7440-02-0		29.00%	2.24895	4.07%	
	Co (cobalt) Kovar	7440-48-4		17.00%	1.31835	2.38%	
	Ni (nickel) plate	7440-02-0		1.00%	0.07755	0.14%	
				100.00%	7.7550		
Totals:			0.055317		55.3170	100.00%	

MATERIALS COMBINED	CAS NUMBER	WEIGHT OF MATERIAL (mg)	% BY WEIGHT OF UNIT
1,4 - Butanediol Diglycidyl Ether	2425-79-8	0.0480	0.09%
Ag (silver)	7440-22-4	1.3824	2.50%
Al (aluminium)	7429-90-5	0.0162	0.03%
Al ₂ O ₃ (aluminium trioxide)	1344-28-1	36.3471	65.71%
Au (gold)	7440-57-5	0.3727	0.67%
Bisphenol F Epoxy Resin	54208-63-8	0.1920	0.35%
Co (cobalt)	7440-48-4	2.2857	4.13%
Cr (chromium)	7440-47-3	0.2264	0.41%
Dodecane [CH ₃ (CH ₂) ₁₀ CH ₃]	112-40-3	0.0152	0.03%
Fe (iron)	7439-89-6	7.1259	12.88%
Ni (nickel)	7440-02-0	4.1449	7.49%
Pd (palladium)	7440-05-3	0.0038	0.01%
Si (silicon)	7440-21-3	1.0638	1.92%
Silica [Si(CH ₃) ₄]	7631-86-9 99439-28-8	0.0380	0.07%
SiO ₂ (silicon dioxide)	14808-60-7	0.4262	0.77%
Undecane [CH ₃ (CH ₂) ₉ CH ₃]	1120-21-4	0.0380	0.07%
W (tungsten)	7440-33-7	1.5908	2.88%