

Current Production Information							
TI Part Number		TLV2765ID		Assembly Site		TI AGUASCALIENTES	
Lead/Ball Finish		CU NIPDAU		Package Type / Pins		D 16	
Planned Lead/Ball Finish				Package Body Size (WxLxH) mm		3.91x9.9x1.58	
MSL / Reflow Ratings		Level-1-260C-UNLIM		Total Device Mass (mg)		141.659979	
Environmental Ratings Information							
Part Number Type		Std		JIG Material Content Compliance		Level A & B	
RoHS & High-Temp Compliant		Y		Green Compliant		Y	
Pb-Free (RoHS) Conversion Date		01-Feb-2005 (DC 0506)		Green Conversion Date		01-Feb-2005 (DC 0506)	
Pb-Free (RoHS) Available Supply Date		24-Nov-2004		Green Available Supply Date		31-Jul-2006	
Component Information							
Component	Substance	CAS Number	Amount (mg)	Homogeneous Material Level		Component Level	
				Percentage %	ppm	Percentage %	ppm
Bond Wire							
Metallurgy	Gold	7440-57-5	0.229977	99.9983	999982	0.1623	1623
Trace Metal	Beryllium	7440-41-7	0.000002	0.0009	8	0	0
Trace Metal	Calcium	7440-70-2	0.000001	0.0004	4	0	0
Trace Metal	Silver	7440-22-4	0.000001	0.0004	4	0	0
Sub-Total			0.229981	100	1000000	0.1623	1623
Die Attach Adhesive							
Conductive Material	Silver	7440-22-4	0.0869	79	790000	0.0613	613
Polymer	Bismaleimide		0.0143	13	130000	0.0101	100
Polymer	Proprietary Resin		0.0066	6	60000	0.0047	46
Reactive Diluent	Proprietary Material		0.0022	2	20000	0.0016	15
Sub-Total			0.11	100	1000000	0.0777	774
Lead Frame							
Base Metal	Copper	7440-50-8	44.099428	97.425	974250	31.1305	311304
Base Metal	Iron	7439-89-6	1.08636	2.4	23999	0.7669	7668
Base Metal	Lead	7439-92-1	0.013579	0.03	299	0.0096	95
Base Metal	Phosphorus	7723-14-0	0.00679	0.015	150	0.0048	47
Base Metal	Tin	7440-31-5	0.013579	0.03	299	0.0096	95
Base Metal	Zinc	7440-66-6	0.045265	0.1	999	0.032	319
Sub-Total			45.265001	100	1000000	31.9533	319528
Lead Frame Plating							
Plating	Gold	7440-57-5	0.001053	0.78	7799	0.0007	7
Plating	Nickel	7440-02-0	0.128412	95.12	951199	0.0906	906
Plating	Palladium	7440-05-3	0.005535	4.1	41000	0.0039	39
Sub-Total			0.135	100	1000000	0.0953	952
Mold Compound							
Coloring	Carbon Black	1333-86-4	0.2859	0.3	3000	0.2018	2018
Filler	Fused Silica	60676-86-0	72.427997	76	759999	51.1281	511280
Flame Retardant Additive	Proprietary Non Halide		3.3355	3.5	35000	2.3546	23545
Hardener	Phenolic Novolac		7.1475	7.5	75000	5.0455	50455
Other additives	Catalyst Mold Release Adhesion Agent		3.5261	3.7	37000	2.4891	24891
Polymer	Cresol Novolac Epoxy		7.1475	7.5	75000	5.0455	50455
Stress Relief Agent	Proprietary		1.4295	1.5	15000	1.0091	10091
Sub-Total			95.299997	100	1000000	67.2738	672735
Semiconductor Device							
Silicon Chip	Doped Silicon	7440-21-3	0.62	100	1000000	0.4377	4376
Sub-Total			0.62	100	1000000	0.4377	4376
Total			141.659979			100	1000000

Important Part Information

There is a remote possibility the Customer Part Number (CPN) your company uses could reference more than one TI part number. This is due to two or more users (EMSI or subcontractors) using the same CPN for different TI part numbers. If this occurs, please check your Customer Part Number and cross reference it with the TI part number seen on this page.

Product Content Methodology

[For an explanation of the methods used to determine material weights. See Product Content Methodology.](#)

Material Declaration Certificate for Semiconductor Products

TI certifies that the material content information provided by TI as of the date of disclosure is representative and accurate. TI semiconductor products designated by TI as "Pb-Free" or "Green" (defined below) do not exceed any of the Joint Industry Guide (JIG) Level-A Substance thresholds and are compliant with the requirements of the European Union's Restriction on Use of Hazardous Substances ("RoHS") Directive, 2002/95/EC.

For TI semiconductor products NOT designated as "Pb-Free" or "Green", these products are RoHS compliant with the exception of Lead (Pb) which may be found in the leadframe plating or solder balls, or in RoHS exempt applications such as high-temperature solder die attach (exemption 7a) and flip-chip solder bumps (exemption 15). This situation is known as RoHS-5 or "5 of 6" compliant.

JIG Level-A Banned Substances	Threshold, Homogeneous Level (1)
Asbestos	Not intentionally added
Azo colorants	Not intentionally added
RoHS - Cadmium/Cadmium Compounds	75 ppm, Not intentionally added (RoHS threshold = 100ppm)
RoHS - Hexavalent Chromium/Hex.Chromium.Compounds	1000 ppm, Not intentionally added
RoHS - Lead/Lead Compounds	1000 ppm, Not intentionally added
RoHS - Mercury/Mercury Compounds	1000 ppm, Not intentionally added
Ozone Depleting Substances	Class I : Not intentionally added Class II : 1000ppm
RoHS - Polybrominated Biphenyls (PBBs)	1000 ppm, Not intentionally added
RoHS - Polybrominated Diphenyl Ethers (PBDEs)	1000 ppm, Not intentionally added
Polychlorinated Biphenyls (PCBs)	1000 ppm, Not intentionally added
Polychlorinated Naphthalenes (>3 Chlorine atoms)	1000 ppm, Not intentionally added
Radioactive Substances	1000 ppm, Not intentionally added
Shortchain Chlorinated Paraffins	1000 ppm, Not intentionally added
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	1000 ppm, Not intentionally added
Tributyl Tin Oxide (TBTO)	1000 ppm, Not intentionally added
(1) Threshold does not apply to applications covered by a RoHS substance exemption.	

Regarding the EU Directive 2004/12/EC concerning Packaging and Packaging Waste, TI's packing materials (boxes, trays, etc) comply with the directive's requirement that the total concentration of the 4 heavy metals (cadmium, hexavalent chromium, lead, and mercury) must not exceed 100 ppm. Material content details for TI's packing materials are available at www.ti.com/eoinfo.

TI bases its material content knowledge on information provided by third parties and has taken and continues to take commercially reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain limited information to be proprietary, and thus CAS numbers and other limited information may not be available for release. TI's standard warranty and limitation of liability provisions of TI's Standard Terms and Conditions (available at <http://www.ti.com/sc/docs/stdterms.htm>) apply to the representations herein unless otherwise provided by a written contract or other agreement signed by the parties.

Signature: [\(click here for signed certificate\)](#)

Name/Title: Cindy Allen, Vice President, Worldwide Quality

Date: September 27, 2006

Pb-Free: TI defines "Pb-Free" or "RoHS Compliant" to mean semiconductor products that are compliant with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials unless exempt. Where designed to be soldered at high temperatures, TI "Pb-Free" and "RoHS Compliant" products are suitable for use in specified lead-free processes.

Green: TI defines "Green" to mean Pb-Free/RoHS Compliant and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material).