

Supplier Name: Texas Instruments Inc. (DUNS# 00-732-1904)
Contact Info: ti.com/support
Form/Declaration Type: Distribute - RoHS and IEC 62474 DB
Created on: 05/17/2022

Details for "TL16CS54IPN"

Current Product Information

TI part number	Lead finish/Ball material	MSL rating/peak reflow	Assembly site	Package Pins	Package body size (mm)	Total device mass (mg)*
TL16CS54IPN	NIPDAU	Level-3-260C-168 HR	TI TAIWAN A/T	PN 80	12x12x1.4	468.8

*Total Device Mass

The summary mass is a rounded value and will be within approximately +/- 10% of the detailed mass value.

Environmental Ratings Information

RoHS	REACH	Green	IEC 62474 DB
Yes	Yes	Yes	Yes

Component Information

				Homogeneous Material Level		Component Level	
Component	Substance	CAS Number	Amount (mg)	Percentage %	ppm	Percentage %	ppm
Bond Wire							
Copper and Its Alloys	Copper	7440-50-8	0.473596	99.997466	999975	0.101021	1010
Copper and Its Alloys	Iron	7439-89-6	0.000002	0.000422	4	0	0
Nickel and Its Alloys	Nickel	7440-02-0	0.000001	0.000211	2	0	0
Other Inorganic Materials	Sulfur	7704-34-9	0.000001	0.000211	2	0	0
Other Nonferrous Metals and Alloys	Manganese	7439-96-5	0.000001	0.000211	2	0	0
Precious Metals	Silver	7440-22-4	0.000007	0.001478	15	0.000001	0
Sub-Total			0.473608	100	1000000	0.101023	1010
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	4.721265	70.000003	700000	1.007074	10071
Thermoplastics	Epoxy	85954-11-6	2.023399	29.999997	300000	0.431603	4316
Sub-Total			6.744664	100	1000000	1.438677	14387
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	109.19661	97.41	974100	23.292287	232923
Copper and Its Alloys	Iron	7439-89-6	2.6904	2.4	24000	0.573878	5739
Copper and Its Alloys	Phosphorus	7723-14-0	0.03363	0.03	300	0.007173	72
Other Nonferrous Metals and Alloys	Lead	7439-92-1	0.03363	0.03	300	0.007173	72
Other Nonferrous Metals and Alloys	Tin	7440-31-5	0.03363	0.03	300	0.007173	72
Zinc and Its Alloys	Zinc	7440-66-6	0.1121	0.1	1000	0.023912	239
Sub-Total			112.1	100	1000000	23.911597	239116
Lead Frame Plating							
Nickel and Its Alloys	Nickel	7440-02-0	1.919331	95.119982	951200	0.409405	4094
Precious Metals	Gold	7440-57-5	0.015739	0.780008	7800	0.003357	34
Precious Metals	Palladium	7440-05-3	0.08273	4.10001	41000	0.017647	176
Sub-Total			2.0178	100	1000000	0.430409	4304
Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	268.32931	84.34	843400	57.236239	572362
Other Nonferrous Metals and Alloys	Metal Hydroxide	Trade Secret	15.907595	5	50000	3.393185	33932
Other Plastics and Rubber	Carbon Black	1333-86-4	0.540858	0.17	1700	0.115368	1154
Thermoplastics	Epoxy	85954-11-6	33.374134	10.49	104900	7.118901	71189
Sub-Total			318.151897	100	1000000	67.863693	678637
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	29.322202	100	1000000	6.2546	62546
Sub-Total			29.322202	100	1000000	6.2546	62546
Total			468.810171			100	1000000

Important Note

The ppm calculations are at the **homogeneous material** level and are maximum concentration values. The ppm displayed represents the **homogeneous material** with the highest ppm for that substance. The amount (mg) calculations represent the maximum total amount of each substance within the component.
The ppm calculations are at the **component** level and are average concentration values. The amount (mg) calculations represent the average total amount of each substance within the **component**.
[See Glossary of Terms for more details.](#)

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 (EMSIs 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 IC Packaged Products

TI certifies that the material content information provided by TI is representative and accurate to the best of their knowledge based on material information provided by its suppliers and their combination into finished IC packaged products. TI semiconductor products designated to be "Pb-free", "Green" or "RoHS Exempt" fully meets the latest EU RoHS Directive requirements along with other legislation as seen in the former JIG-101 list that has been transferred to the IEC 62474 database.

Important Information/Disclaimer

TI bases its material content information on information provided by third-party suppliers and has taken, and continues to take, reasonably diligent steps to provide any required or available information. TI may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers may consider certain information to be proprietary, and thus certain information may not be available for release by TI. The material content information is provided by TI "as is."
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[Signature: \(click here for a fuller statement with a signed certificate\)](#)

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For further environmental statements, please go to www.ti.com/ecoinfo
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RoHS: Means TI semiconductor products that are compliant with the current RoHS requirement that the maximum concentration values of the ten substances listed in RoHS Annex II do not exceed 0.1 % by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI semiconductor products labeled as "RoHS Compliant" are suitable for use in specified lead-free processes. TI may also reference these types of semiconductor products as "Pb-Free." These TI semiconductor products are also fully compliant with GADSL and the IEC 62474 database for electronic requirements.

RoHS Exempt: Means TI semiconductor products that contain lead (Pb) above the RoHS Annex II threshold, but that fall within one of the specific RoHS exemptions noted above or documented in <http://www.ti.com/lit/pdf/szzq088>

Green: Means the content of Chlorine (Cl) and Bromine (Br)-based flame retardants meet JS709B low halogen requirements of <=1 000ppm threshold; Antimony trioxide (Sb2O3) contained in halogen based flame retardant materials meets the <=1 000ppm threshold requirement; and Beryllium Oxide (BeO) is <=1000ppm.