

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: 06/08/2022

Details for "TL28L92FR"

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)*
TL28L92FR	SN	Level-3-220C-168HRS	Ext-Mfg	FR 44	10x10x1.95	494.3

*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	0.000003	0.000274	3	0.000001	0
Copper and Its Alloys	Iron	7439-89-6	0.000002	0.000183	2	0	0
Other inorganic Materials	Silicon	7440-21-3	0.000001	0.000091	1	0	0
Other Nonferrous Metals and Alloys	Beryllium	7440-41-7	0.000001	0.000091	1	0	0
Other Nonferrous Metals and Alloys	Lead	7439-92-1	0.000003	0.000274	3	0.000001	0
Precious Metals	Gold	7440-57-5	1.093314	99.997988	999980	0.221202	2212
Precious Metals	Silver	7440-22-4	0.000012	0.001098	11	0.000002	0
Sub-Total			1.093336	100	1000000	0.221206	2212
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.634764	69.999978	700000	0.128427	1284
Thermoplastics	Epoxy	85954-11-6	0.272042	30.000022	300000	0.05504	550
Sub-Total			0.906806	100	1000000	0.183467	1835
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	118.736697	92.999814	929998	24.023088	240231
Copper and Its Alloys	Iron	7439-89-6	2.8905	2.263967	22640	0.584813	5848
Copper and Its Alloys	Phosphorus	7723-14-0	0.0369	0.028902	289	0.007466	75
Magnesium and Its Alloys	Magnesium	7439-95-4	0.1845	0.144509	1445	0.037328	373
Nickel and Its Alloys	Nickel	7440-02-0	3.69	2.890171	28902	0.746569	7466
Other inorganic Materials	Silicon	7440-21-3	0.7995	0.626204	6262	0.161757	1618
Precious Metals	Silver	7440-22-4	1.188426	0.930828	9308	0.240445	2404
Zinc and Its Alloys	Zinc	7440-66-6	0.1476	0.115607	1156	0.029863	299
Sub-Total			127.674123	100	1000000	25.831329	258313
Lead Frame Plating							
Other Nonferrous Metals and Alloys	Tin	7440-31-5	10	100	1000000	2.023224	20232
Sub-Total			10	100	1000000	2.023224	20232
Mold Compound							
Other inorganic Materials	Fused Silica	60676-86-0	298.810585	85	850000	60.45606	604561
Thermoplastics	Epoxy	85954-11-6	52.73128	15	150000	10.668717	106687
Sub-Total			351.541865	100	1000000	71.124777	711248
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	3.044633	100	1000000	0.615997	6160
Sub-Total			3.044633	100	1000000	0.615997	6160
Total			494.260763			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 (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 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
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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.