

S5LS20206ASGWTMEP

Quality, reliability & packaging data download

Status: ACTIVE

Report date: 08/28/2024



Assembly site: **TI PHILIPPINES A/T**

RoHS	No
REACH	Affected
Device marking	TMS570, S20206ASGWTMEP
Lead finish/Ball material	SNPB
MSL rating/Peak reflow	Level-3-220C-168 HR
Rating	HiRel Enhanced Product

Material content

Component	Substance	CAS Number	Homogeneous Material Level		Component Level		
			Amount (mg)	Percentage %	ppm	Percentage %	ppm
Bond Wire							
Copper and Its Alloys	Iron	7439-89-6	0.000006	0.000200	2	0.000001	0
Magnesium and Its Alloys	Magnesium	7439-95-4	0.000001	0.000033	0	0.000000	0
Other Nonferrous Metals and Alloys	Beryllium	7440-41-7	0.000003	0.000100	1	0.000000	0
Other Nonferrous Metals and Alloys	Calcium	7440-70-2	0.000008	0.000267	3	0.000001	0
Other Nonferrous Metals and Alloys	Yttrium	7440-65-5	0.000021	0.000700	7	0.000003	0
Precious Metals	Gold	7440-57-5	2.999477	99.997600	999976	0.416103	4161
Precious Metals	Silver	7440-22-4	0.000033	0.001100	11	0.000005	0
Sub-total	—	—	2.999549	100	1000000	0.416113	4161
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	10.957809	81.999998	820000	1.520125	15201
Thermoplastics	Epoxy	85954-11-6	2.405373	18.000002	180000	0.333686	3337
Sub-total	—	—	13.363182	100	1000000	1.853811	18538
Mold Compound							
Other Inorganic Materials	Aluminum Nitride	24304-00-5	2.560627	1.000000	10000	0.355224	3552
Other Inorganic Materials	Fused Silica	60676-86-0	217.218001	84.830000	848300	30.133628	301336
Other Nonferrous Metals and Alloys	Metal Oxide	Trade Secret	2.81669	1.100000	11000	0.390746	3907
Other Organic Materials	Bromine	7726-95-6	0.051213	0.020000	200	0.007105	71
Other Organic Materials	Carbon Black	1333-86-4	0.768188	0.300000	3000	0.106567	1066
Other Organic Materials	Chlorine	7782-50-5	0.051213	0.020000	200	0.007105	71
Other Plastics and Rubber	Silicone	218163-11-2	2.048502	0.800000	8000	0.284179	2842
Thermoplastics	Epoxy	85954-11-6	30.548282	11.930000	119300	4.237819	42378
Sub-total	—	—	256.062716	100	1000000	35.522372	355224
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	40.002238	100.000000	1000000	5.549322	55493
Sub-total	—	—	40.002238	100	1000000	5.549322	55493
Solder Ball							
Other Nonferrous Metals and Alloys	Antimony	7440-36-0	0.966106	0.500000	5000	0.134023	1340
Other Nonferrous Metals and Alloys	Lead	7439-92-1	66.642009	34.490000	344900	9.244931	92449
Other Nonferrous Metals and Alloys	Tin	7440-31-5	121.74871	63.010000	630100	16.889624	168896
Precious Metals	Silver	7440-22-4	3.864425	2.000000	20000	0.536093	5361
Sub-total	—	—	193.221250	100	1000000	26.804672	268047
Substrate							
Ceramics / Glass	Woven Glass Fiber	65997-17-3	33.406357	15.523385	155234	4.634306	46343
Copper and Its Alloys	Copper	7440-50-8	100.87995	46.877253	468773	13.994599	139946
Nickel and Its Alloys	Nickel	7440-02-0	4.032202	1.873698	18737	0.559368	5594
Not Categorized	Proprietary Filler	—	0.519923	0.241600	2416	0.072126	721

Other Inorganic Materials	Silica	7631-86-9	26.595277	12.358388	123584	3.689437	36894
Other Inorganic Materials	Silicon Dioxide	7631-86-9	0.103942	0.048300	483	0.014419	144
Other Nonferrous Metals and Alloys	Barium Sulfate	7727-43-7	5.042782	2.343298	23433	0.699561	6996
Other Plastics and Rubber	Other Filler	—	11.662334	5.419295	54193	1.617861	16179
Precious Metals	Gold	7440-57-5	0.524227	0.243600	2436	0.072724	727
Thermoplastics	Epoxy	85954-11-6	32.433222	15.071185	150712	4.499308	44993
Sub-total	—	—	215.200216	100	1000000	29.853710	298537
Total	—	—	720.849151	—	—	100	1000000

MTBF/FIT estimates

MTBF / FIT		MTBF / FIT supporting data							
MTBF	FIT	Usage temp (°C)	Conf level (%)	Activation energy (eV)	Test temp (°C)	Test duration (hours)	Sample size	Fails	Additional comments
1.78058451 × 10 ⁸	5.6	55	60	0.75	125	1000	1536	0	—

Qualification summary

No results found

Ongoing reliability monitoring

FAB process reliability data

Fab Process	Reliability Test	Rolling Year (3Q2023 - 2Q2024) Sample Size	Cumulative Sample Size	Disposition
130nm CMOS	Life test 125C, 1000 Hours or Equivalent JEDEC Condition	77	20205	Pass

Assembly process reliability data

Package Family	Reliability Test	Rolling Year (3Q2023 - 2Q2024) Sample Size	Cumulative Sample Size	Disposition
BGA	Biased HAST 130C/85%RH, 96 Hours or Equivalent JEDEC Condition	3191	63699	Pass
BGA	High temp storage bake 150C, 1000 Hours or Equivalent JEDEC Condition	2750	81155	Pass
BGA	Temperature cycle -65/150C, 500 Hours or Equivalent JEDEC Condition	6757	158716	Pass
BGA	Unbiased HAST 130C/85% RH, 96 Hours or Equivalent JEDEC Condition	3896	111824	Pass

Additional resources

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[Certifications](#)

[Conflict minerals specialized disclosure report](#)

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