# Materials Declaration

| | |
|---|---|
| **Package** | CSP BGA |
| **Body Size** | 10 X 10 |
| **Ball Count** | 100 |
| **Option** | SnAgCu |
| **Ball Size** | 0.45 mm |

## Molding Compound

| Item | % of Compound | Weight (g) | PPM |
|---|---|---|---|
| SiO2 Filler | 86.2 | 9.88 E-02 | 382807 |
| Epoxy resin | 6.0 | 6.88 E-03 | 26646 |
| Phenol Resin | 6.0 | 6.88 E-03 | 26646 |
| Metal Hydroxide | 1.5 | 1.72 E-03 | 6660 |
| Carbon Black | 0.3 | 3.44 E-04 | 1333 |
| Subtotal | | 1.15 E-01 | 444091 |

## Molding Compound

| Item | PPM | Method |
|---|---|---|
| Pb | Not Detected | EPA 3051/3052. ICP-OES |
| Cd | Not Detected | EPA 3051/3052. ICP-OES |
| Hg | Not Detected | EPA 3051/3052. ICP-OES |
| Cr+6 | Not Detected | EPA 3060A & EPA 7196A. UV-VIS. |
| PBB | Not Detected | EPA 3540C/3550C. GC/MS |
| PBDE | Not Detected | EPA 3540C/3550C. GC/MS |

## Laminate

| Item | % of Laminate | Weight (g) | PPM |
|---|---|---|---|
| BT resin | 25.0 | 1.99 E-02 | 76901 |
| Glass fiber | 25.0 | 1.99 E-02 | 76901 |
| Cu | 19.0 | 1.51 E-02 | 58445 |
| Soldermask | 12.2 | 9.69 E-03 | 37528 |
| Ni | 11.0 | 8.73 E-03 | 33836 |
| Au | 7.8 | 6.19 E-03 | 23992 |
| Subtotal | | 7.94 E-02 | 307603 |

## Die Attach Paste

| Item | PPM | Method |
|---|---|---|
| Pb | Not Detected | EPA 3051/3052. ICP-OES |
| Cd | Not Detected | EPA 3051/3052. ICP-OES |
| Hg | Not Detected | EPA 3051/3052. ICP-OES |
| Cr+6 | Not Detected | EPA 3060A & EPA 7196A. UV-VIS. |
| PBB | Not Detected | EPA 3540C/3550C. GC/MS |
| PBDE | Not Detected | EPA 3540C/3550C. GC/MS |

## Solder Ball

| | % of Solder Ball | Weight (g) | PPM |
|---|---|---|---|
| Sn | 96.5 | 3.41 E-02 | 132052 |
| Ag | 3 | 1.06 E-03 | 4107 |
| Cu | 0.5 | 1.77 E-04 | 686 |
| Subtotal | | 3.53 E-02 | 136845 |

## Bond Wires

| | % of Wire | Weight (g) | PPM |
|---|---|---|---|
| Au | 99.99 | 1.15 E-03 | 4467 |

## Chip

| | % of Chip | Weight (g) | PPM |
|---|---|---|---|
| Si | 100 | 2.48 E-02 | 95973 |

## Die Attach

| Item | % of Die Attach | Weight (g) | PPM |
|---|---|---|---|
| Silver | 66.11 | 1.88 E-03 | 7287 |
| Polymeric material | 16.53 | 4.70 E-04 | 1821 |
| Acrylate resin | 6.2 | 1.76 E-04 | 682 |
| Diester resin | 6.2 | 1.76 E-04 | 682 |
| Functionalized urethane resin | 2.48 | 7.10 E-05 | 275 |
| Epoxy resin | 2.48 | 7.10 E-05 | 275 |
| Subtotal | | 2.85 E-03 | 11022 |

## Package Totals

| Weight (g) | PPM |
|---|---|
| **2.58 E-01** | 1000000 |

Note: The information provided in this declaration are true to the best of ADI's knowledge.

ADI derived most of the information listed in this declaration from documents provided by third parties, and assumes no liability to any inaccuracy of such information.

ANALOG DEVICES

ADI Proprietary

# Materials Declaration

| | |
|---|---|
| **Package** | CSP BGA |
| **Body Size** | 10 X 10 |
| **Ball Count** | 100 |
| **Option** | SnPbAg |
| **Ball Size** | 0.45 mm |

### Molding Compound

| Item | % of Compound | Weight (g) | PPM |
|---|---|---|---|
| Silica fused | 75.5 | 8.65 E-02 | 329097 |
| Phenol & Epoxy resin | 20.0 | 2.29 E-02 | 87178 |
| Antimony oxide | 3.0 | 3.44 E-03 | 13077 |
| Carbon black | 1.5 | 1.72 E-03 | 6537 |
| Subtotal | | 1.15 E-01 | 435889 |

### Laminate

| Item | % of Laminate | Weight (g) | PPM |
|---|---|---|---|
| BT resin | 25.0 | 1.99 E-02 | 75481 |
| Glass fiber | 25.0 | 1.99 E-02 | 75481 |
| Cu | 19.0 | 1.51 E-02 | 57366 |
| Soldermask | 12.2 | 9.69 E-03 | 36836 |
| Ni | 11.0 | 8.73 E-03 | 33212 |
| Au | 7.8 | 6.19 E-03 | 23549 |
| Subtotal | | 7.94 E-02 | 301924 |

### Solder Ball

| | % of Solder Ball | Weight (g) | PPM |
|---|---|---|---|
| Sn | 62 | 2.49 E-02 | 94528 |
| Pb | 36 | 1.44 E-02 | 54886 |
| Ag | 2 | 8.02 E-04 | 3050 |
| Subtotal | | 4.01 E-02 | 152464 |

### Bond Wires

| | % of Wire | Weight (g) | PPM |
|---|---|---|---|
| Au | 99.99 | 1.15 E-03 | 4384 |

### Chip

| | % of Chip | Weight (g) | PPM |
|---|---|---|---|
| Si | 100 | 2.48 E-02 | 94201 |

### Die Attach

| Item | % of Die Attach | Weight (g) | PPM |
|---|---|---|---|
| Ag | 70.49 | 2.07 E-03 | 7852 |
| Epoxy resin | 17.62 | 5.16 E-04 | 1962 |
| Silane | 6.61 | 1.94 E-04 | 738 |
| Phenolic resin | 2.64 | 7.70 E-05 | 293 |
| Curing agent & hardner | 2.64 | 7.70 E-05 | 293 |
| Subtotal | | 2.93 E-03 | 11138 |

### Molding Compound

| Item | PPM | Method |
|---|---|---|
| Pb | Not Detected | EPA 3051/3052. ICP-OES |
| Cd | Not Detected | EPA 3051/3052. ICP-OES |
| Hg | Not Detected | EPA 3051/3052. ICP-OES |
| Cr+6 | Not Detected | EPA 3060A & EPA 7196A. UV-VIS. |
| PBB | Not Detected | EPA 3540C/3550C. GC/MS |
| PBDE | Not Detected | EPA 3540C/3550C. GC/MS |

### Die Attach Paste

| Item | PPM | Method |
|---|---|---|
| Pb | Not Detected | EPA 3051/3052. ICP-OES |
| Cd | Not Detected | EPA 3051/3052. ICP-OES |
| Hg | Not Detected | EPA 3051/3052. ICP-OES |
| Cr+6 | Not Detected | EPA 3060A & EPA 7196A. UV-VIS. |
| PBB | Not Detected | EPA 3540C/3550C. GC/MS |
| PBDE | Not Detected | EPA 3540C/3550C. GC/MS |

### Package Totals

| Weight (g) | PPM |
|---|---|
| **2.63 E-01** | 1000000 |

Note: The information provided in this declaration are true to the best of ADI's knowledge.

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ANALOG DEVICES

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