



ALLIANCE MEMORY MDS REPORT

| Part Number: | | AS4C128M16D3LB-12BIN | | | | | | | |
|--------------|---------------|----------------------|-------------------|---------------------------------------|--------------|----------------|-----------------|-----------------------|---------|
| Part Weight: | | 224.222mg | | | | | | | |
| No. | Part Name | Material Name | Component wt (mg) | Material Content (Element) | CAS Number | Element wt (%) | Element wt (mg) | wt % of Total unit wt | PPM |
| 1 | Substrate | HL-832NXA / AUS 308 | 55.502 | Cured thermosetting resin | Trade secret | 31.62% | 17.550 | 7.83% | 316200 |
| | | | | Continuous Filament Fiber Glass | 65997-17-3 | 31.62% | 17.550 | 7.83% | 316200 |
| | | | | Talc containing no asbestiform fibers | 14807-96-6 | 0.42% | 0.234 | 0.10% | 4220 |
| | | | | Morpholine derivative | Trade secret | 0.42% | 0.234 | 0.10% | 4220 |
| | | | | Barium sulfate | 7727-43-7 | 4.64% | 2.576 | 1.15% | 46420 |
| | | | | Silica, amorphous | 7631-86-9 | 0.11% | 0.059 | 0.03% | 1055 |
| | | | | Dipropylene glycol monomethyl ether | 34590-94-8 | 2.53% | 1.405 | 0.63% | 25320 |
| | | | | Naphthalene | 91-20-3 | 0.11% | 0.059 | 0.03% | 1055 |
| | | | | Epoxy resin A | Trade secret | 1.37% | 0.761 | 0.34% | 13715 |
| | | | | Epoxy resin B | 85954-11-6 | 0.95% | 0.527 | 0.24% | 9495 |
| | | | | Copper | 7440-50-8 | 24.73% | 13.726 | 6.12% | 247300 |
| | | | | Nickel | 7440-02-0 | 1.15% | 0.638 | 0.28% | 11500 |
| | | | | Gold | 7440-57-5 | 0.33% | 0.183 | 0.08% | 3300 |
| 2 | Mold compound | CEL-9120HF | 111.386 | Epoxy resin | Trade Secret | 5.25% | 5.848 | 2.61% | 52500 |
| | | | | Hardener | Trade Secret | 5.25% | 5.848 | 2.61% | 52500 |
| | | | | Carbon Black | 1333-86-4 | 0.20% | 0.223 | 0.10% | 2000 |
| | | | | Amorphous Silica | 60676-86-0 | 85.04% | 94.723 | 42.25% | 850400 |
| | | | | Crystalline Silica | 14808-60-7 | 4.26% | 4.745 | 2.12% | 42600 |
| 3 | Epoxy | 6202C | 1.826 | 2-(2-Ethoxyethoxy)ethyl acetate | 112-15-2 | 30.00% | 0.548 | 0.24% | 300000 |
| | | | | Modified Epoxy Resin | Trade Secret | 30.00% | 0.548 | 0.24% | 300000 |
| | | | | Silicon dioxide | 7631-86-9 | 10.00% | 0.183 | 0.08% | 100000 |
| | | | | Epoxy resin | Trade Secret | 10.00% | 0.183 | 0.08% | 100000 |
| | | | | Trade secret | Trade Secret | 10.00% | 0.183 | 0.08% | 100000 |
| | | | | Di-ester Resin | Trade Secret | 4.50% | 0.082 | 0.04% | 45000 |
| | | | | Isodecyl alcohol, ethoxylated | Trade Secret | 4.50% | 0.082 | 0.04% | 45000 |
| | | | | Silane | Trade Secret | 1.00% | 0.018 | 0.01% | 10000 |
| 4 | Solder ball | Sn/Ag/Cu | 33.878 | Tin | 7440-31-5 | 96.50% | 32.692 | 14.58% | 965000 |
| | | | | Silver | 7440-22-4 | 3.00% | 1.016 | 0.45% | 30000 |
| | | | | Copper | 7440-50-8 | 0.50% | 0.169 | 0.08% | 5000 |
| | | | | Gold | 7440-57-5 | 99.99% | 0.265 | 0.12% | 999900 |
| 5 | Gold wire | Au | 0.265 | Others | Trade Secret | 0.01% | 0.000 | 0.00% | 100 |
| 6 | Die | Chip | 21.365 | Silicon | 7440-21-3 | 100.00% | 21.365 | 9.53% | 1000000 |
| | | | 224.222 | | | 600.00% | 224.222 | 100.00% | 6000000 |