



Material declaration form

| General information | | | |
|---------------------|---------------------------|----------------|-----|
| IPC | 1752 | Version | 2 |
| Form type* | Distribute | | |
| Sectionals* | Material information | Subsectionals* | A-D |
| | Manufacturing information | | |

| Supplier information | | | |
|----------------------------|--|-----------------------|-----------------------------------|
| Company name* | STMicroelectronics | Response date* | 2022-07-29 |
| Authorized representative* | Yves Hallez | Representative title | IMG Material Declaration Champion |
| Representative phone* | Refer to Supplier Comment section | Representative email* | Refer to Supplier Comment section |
| Supplier comment | Online Technical Support - STMicroelectronics : http://www.st.com/web/en/support/support.html | | |

Uncertainty statement

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Legal statement

| Supplier acceptance * | true | Legal declaration* | Standard |
|---|------|--------------------|----------|
| Supplier certifies that it gathered the provided information and such information is true and correct to the best of its knowledge and belief, as of the date that Supplier completes this form. Supplier acknowledges that Company will rely on this certification in determining the compliance of its products. Company acknowledges that Supplier may have relied on information provided by others in completing this form, and that Supplier may not have independently verified such information. However, in situations where Supplier has not independently verified information provided by others, Supplier agrees that, at a minimum, its suppliers have provided certifications regarding their contributions to the part(s), and those certifications are at least as comprehensive as the certification in this paragraph. If the Company and the Supplier enter into a written agreement with respect to the identified part(s), the terms and conditions of that agreement, including any warranty rights and/or remedies provided as part of that agreement, will be the sole and exclusive source of the Supplier's liability and the Company's remedies for issues that arise regarding information the Supplier provides in this form. | | | |



| Product | | | | |
|---------------------------|-------------------------|-----------------|--------------------|------------------|
| Manufacturing item number | Manufacturing item name | Version | Manufacturing site | Date |
| VB56G4AEGK | E3GK-6G4JGAD | A | AMKOR | 2022-07-29 |
| | Amount | Unit of measure | Unit type | ST ECOPACK grade |
| | 145.0 | mg | Each | ECOPACK® 2 |

| Manufacturing information | | | |
|----------------------------|------------------------------|-------------------------|----------------------|
| J-STD-020 MSL rating | Classification temperature | Number of reflow cycles | |
| 3 | 260 | 3 | |
| Bulk solder termination | Terminal plating | Terminal base alloy | Comment |
| Tin/Silver/Copper (SAC305) | Tin/Silver/Copper (Sn/Ag/Cu) | Copper Alloy | DM00895841/ 1F144217 |



| QueryList : RoHS Directive 2011/65/EU- 8 June 2011 – Annex II amended by Delegated Directive 2015/863 - 31 March 2015 | Response |
|--|----------|
| 1 - Product(s) meets EU RoHS requirement without any exemptions | TRUE |
| 2 - Product(s) meets EU RoHS requirements except lead in solder and this usage may qualify under the lead in solder '7b' exemption (other selected exemptions may apply) | FALSE |

| QueryList : ELV directive : 2000/53/EC amended 2020/363_ March 2020 | Response |
|---|----------|
| 1 - Product(s) meets EU ELV requirement without any exemptions | true |

| QueryList : California Prop65 list, dated 25th Feb 2022 | Response |
|--|----------|
| 1 - The product does not contain identified substance from California Prop 65 List, no exposure to consumers is foreseen | false |
| 2 - The product is containing below substance(s) from California Prop 65 List, no exposure to consumers is foreseen | false |

| Substance | amount in product (mg) | Application | ppm in product |
|-----------|------------------------|------------------------|----------------|
| Nickel | 9.398 | Substrate metalization | 64814 |

| QueryList : Chinese RoHS , references : SJT 11364 – 2014 and GBT 26572 – 2014 | Response |
|---|----------|
| 1 - Product(s) requires marking for the presence of restricted substances and must be marked with an Environmental Protection Use Period under China's Measures for Administration of the control of pollution by Electronic Information Products | false |
| 2 - Product(s) is eligible for marking with the e code under China's Measures for Administration of the control of pollution by Electronic Information Products | false |

| QueryList : REACH-10th June 2022 | Response |
|--|----------|
| 1 - Product(s) does not contain REACH Substances Of Very High Concern above the limits per the definition within REACH | true |
| 2 - Product(s) does not contain REACH Substances Of Very High Concern in any Homogeneous Material above the limits per the definition within REACH | true |

| QueryList : Korea Chemical Control Act_ 27 Dec 2017 update | Response |
|--|----------|
| The Product does contain at least one of the substances listed in Chemical Control Act | false |

| QueryList : Responsible metals sourcing | Response |
|---|--|
| The component is containing at least one of the following metals : Cobalt , Gold , Tantalum , Tin , Tungsten. | true |
| The following metals are present is the component : | Cobalt, Gold, Tantalum, Tin, Tungsten, |
| This product is in the scope of the responsible metals sourcing, its compliance is covered by our company processes . | |

| QueryList : China GB 33372-2020 Limit standard for volatile organic compounds content in adhesives - 4 March 2020 application date 1st December 2020 | Response |
|--|----------|
| The product contains adhesives identified under GB 33372 | false |

| QueryList:Stockholm Convention Persistent Organic Pollutants | Response |
|--|-----------------|
| QUERY | Response |
| Product is compliant with Stockholm Convention Persistent Organic Pollutants Annex I | true |



| Material composition declaration : note : Substance present with less 0.001mg will not be declared in this document | | | | | | Manufacturing Item name | E3GK-6G4JGAD | | 145.0000 | | 9000000.0 | 1000000 | | | | |
|--|---------------------------------|------------------|-----------------|---------------|-------------------------|--------------------------------------|--------------|----------|-------------------|--------------------------|---|--------------------------------|-------|----|--------|-------|
| Homogeneous material | Material group | Mass | Unit of measure | Level | Substance category | Substance | CAS | Exempt | Mass | Unit of measure | Concentration in homogeneous material (ppm) | Concentration in product (ppm) | | | | |
| Dies | M-011 Other inorganic materials | 8.371 | mg | supplier | die | Silicon(Si) | 7440-21-3 | | 7.370 | mg | 880420 | 50828 | | | | |
| | | | | supplier | metallisation | Aluminium(Al) | 7429-90-5 | | 0.079 | mg | 9437 | 545 | | | | |
| | | | | supplier | metallisation | Copper(Cu) | 7440-50-8 | | 0.293 | mg | 35002 | 2021 | | | | |
| | | | | supplier | metallisation | Cobalt(Co) | 7440-48-4 | | 0.001 | mg | 119 | 7 | | | | |
| | | | | supplier | metallisation | Nickel(Ni) | 7440-02-0 | | 0.001 | mg | 119 | 7 | | | | |
| | | | | supplier | metallisation | Tantalum(Ta) | 7440-25-7 | | 0.055 | mg | 6570 | 379 | | | | |
| | | | | supplier | metallisation | Titanium(Ti) | 7440-32-6 | | 0.014 | mg | 1672 | 97 | | | | |
| | | | | supplier | metallisation | Tungsten(W) | 7440-33-7 | | 0.002 | mg | 239 | 14 | | | | |
| | | | | supplier | Passivation | Silicon Nitride (SiN) | 12033-89-5 | | 0.044 | mg | 5256 | 303 | | | | |
| | | | | supplier | passivation | Silicon Oxide | 7631-86-9 | | 0.486 | mg | 58058 | 3352 | | | | |
| | | | | supplier | polymer coating | Polymer resist (color, planar,µlens) | proprietary | | 0.026 | mg | 3106 | 179 | | | | |
| | | | | Mold Compound | Other Organic Materials | 18.058 | mg | Supplier | Mold Compound | Epoxy Resin | Proprietary | | 0.903 | mg | 50000 | 6227 |
| | | | | | | | | Supplier | Mold Compound | Phenol Resin | Proprietary | | 0.424 | mg | 23500 | 2927 |
| Supplier | Mold Compound | Phenol Novolac | 9003-35-4 | | | | | | 0.424 | mg | 23500 | 2927 | | | | |
| Supplier | Mold Compound | Metal Hydroxide | Proprietary | | | | | | 0.903 | mg | 50000 | 6227 | | | | |
| Supplier | Mold Compound | Carbon Black | 1333-86-4 | | | | | | 0.054 | mg | 3000 | 374 | | | | |
| Supplier | Mold Compound | Silica, vitreous | 60676-86-0 | | | | | | 15.349 | mg | 850000 | 105857 | | | | |
| Substrate | Other Organic Materials | 57.106 | mg | | | | | Supplier | Core(HL832NS) | Glass, oxide | 65997-17-3 | | 6.786 | mg | 118833 | 46801 |
| | | | | Supplier | Core(HL832NS) | Silicon dioxide | 7631-86-9 | | 3.222 | mg | 56415 | 22219 | | | | |
| | | | | Supplier | Core(HL832NS) | Bismaleimide-Triazine resin | Proprietary | | 1.659 | mg | 29048 | 11440 | | | | |
| | | | | Supplier | Core(HL832NS) | Epoxy resin | Proprietary | | 1.152 | mg | 20166 | 7942 | | | | |
| | | | | Supplier | Core(HL832NS) | Other substances | Proprietary | | 0.891 | mg | 15604 | 6146 | | | | |
| | | | | Supplier | Solder Mask(AUS320) | Cured Resin | Proprietary | | 9.483 | mg | 166063 | 65402 | | | | |
| | | | | Supplier | Solder Mask(AUS320) | Phthalocyanine blue | 147-14-8 | | 0.025 | mg | 440 | 173 | | | | |
| | | | | Supplier | Solder Mask(AUS320) | Organic pigment | Proprietary | | 0.025 | mg | 440 | 173 | | | | |
| | | | | Supplier | Solder Mask(AUS320) | Silica | Proprietary | | 0.063 | mg | 1100 | 433 | | | | |
| | | | | Supplier | Solder Mask(AUS320) | Barium sulfate | 7727-43-7 | | 2.613 | mg | 45750 | 18018 | | | | |
| | | | | Supplier | Solder Mask(AUS320) | Talc | 14807-96-6 | | 0.264 | mg | 4619 | 1819 | | | | |
| | | | | Supplier | Solder Mask(AUS320) | Antifoamer and Leveling agent | Proprietary | | 0.088 | mg | 1540 | 606 | | | | |
| | | | | Supplier | Copper Foil | Copper | 7440-50-8 | | 20.555 | mg | 359934 | 141755 | | | | |
| | | | | Supplier | Plating | Nickel | 7440-02-0 | | 9.397 | mg | 164551 | 64806 | | | | |
| | | | | Supplier | Plating | Gold | 7440-57-5 | | 0.885 | mg | 15499 | 6104 | | | | |
| | | | | Die attach | Other Organic Materials | 0.370 | mg | Supplier | Die attach(2025D) | Silica, amorphous, fused | 60676-86-0 | | 0.179 | mg | 485000 | 1236 |
| | | | | | | | | Supplier | Die attach(2025D) | Bismaleimide monomer | Proprietary | | 0.124 | mg | 335000 | 854 |
| Supplier | Die attach(2025D) | Acrylate monomer | Proprietary | | | | | | 0.028 | mg | 75000 | 191 | | | | |
| Supplier | Die attach(2025D) | Epoxy resin | Proprietary | | | | | | 0.028 | mg | 75000 | 191 | | | | |
| Supplier | Die attach(2025D) | Acrylic resin | Proprietary | | | | | | 0.011 | mg | 30000 | 76 | | | | |
| Wire | Other Organic Materials | 5.493 | mg | Supplier | Wire(2N) | Gold | 7440-57-5 | | 5.438 | mg | 990000 | 37503 | | | | |
| | | | | Supplier | Wire(2N) | Palladium | 7440-05-3 | | 0.055 | mg | 10000 | 379 | | | | |
| | | | | Supplier | Solder Ball | Tin | 7440-31-5 | | 9.024 | mg | 965000 | 62232 | | | | |
| Solder Ball (Sn96.5 / Ag3 / Cu0.5) | Solder | 9.351 | mg | Supplier | Solder Ball | Silver | 7440-22-4 | | 0.281 | mg | 30000 | 1935 | | | | |
| | | | | Supplier | Solder Ball | Copper | 7440-50-8 | | 0.047 | mg | 5000 | 322 | | | | |
| | | | | Supplier | Glass | Borosilicate | 65997-17-3 | | 27.464 | mg | 992018 | 189406 | | | | |
| Glass | Other inorganic materials | 27.685 | mg | Supplier | Coating agent 1 | SiO2 | 14808-60-7 | | 0.110 | mg | 3991 | 762 | | | | |
| | | | | Supplier | Coating agent 2 | TiO2 | 12065-65-5 | | 0.110 | mg | 3991 | 762 | | | | |
| | | | | Supplier | Glass Attach | PUR | Proprietary | | 4.199 | mg | 555000 | 28961 | | | | |
| Glass Attach | Other Organic Materials | 7.566 | mg | Supplier | Glass Attach | White mineral oil (petroleum) | 8042-47-5 | | 1.324 | mg | 175000 | 9132 | | | | |
| | | | | Supplier | Glass Attach | Silica, vitreous | 60676-86-0 | | 1.135 | mg | 150000 | 7827 | | | | |
| | | | | Supplier | Glass Attach | Silica, amorphous | 67762-90-7 | | 0.416 | mg | 55000 | 2870 | | | | |
| | | | | Supplier | Glass Attach | Titanium dioxide | 13463-67-7 | | 0.076 | mg | 10000 | 522 | | | | |
| | | | | Supplier | Glass Attach | Additives | Proprietary | | 0.416 | mg | 55000 | 2870 | | | | |
| Liner | | 11.000 | mg | supplier | PI | Polymide film | 25038-81-7 | | 9.291 | mg | 844636.4 | 64076 | | | | |
| | | | | supplier | adhesive | Silicon resin | Proprietary | | 1.709 | mg | 155363.6 | 11786 | | | | |