




| Product          |               |   |           |                  |
|------------------|---------------|---|-----------|------------------|
| Mfr Item Number  | Mfr Item Name | Version   | Mfr Site  | Date             |
| STM32F412RGY6PTR | T26Y*441XXXC  | A   | 996S      | 2017-10-11       |
|                  | Amount        | UoM   | Unit type | ST ECOPACK Grade |
|                  | 16.78         | mg  | Each      | ECOPACK® 2       |
|                  | Comment       | ECOPACK® 2 is STMicroelectronics trade name for ROHS compliant device without Brominated and Chlorinated compound (900ppm) and without Antimony oxide flame retardant ( in each organic material) |           |                  |

| Manufacturing information           |                     |                      |         |   |
|-------------------------------------|---------------------|----------------------|---------|---|
| J-STD-020 MSL Rating                | Classification Temp | Nbr of Reflow Cycles |         | <br>life.augmented |
| 1                                   | 260                 | 3                    |         |   |
| bulk Solder Termination             | Terminal Plating    | Terminal Base Alloy  | Comment |   |
| Tin/Silver/Copper/Nickel(SACN12505) | NAC                 | NAC                  |         |   |

| Package Designator | Size  | Nbr of instances | Shape   |  |
|--------------------|---|------------------|---------|--|
| WLCSP              | Not Applicable  | 81               | No lead |  |
| Comment            | Package : A02T WLCSP 81L DIE 421 R 9X9 P 0.4 MM 8558988 |                  |         |  |

| QueryList : RoHS Directive 2011/65/EU-July 2011 – Annex II amended by Directive 2015/863-April 2015  |             |
|--|-------------|
| Query  | 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       |
| 3 - Product(s) meets EU RoHS requirements by application of the selected exemption(s)  | FALSE       |
| 4 - Product(s) does not meet EU RoHS requirements and is not under exemptions  | FALSE       |
| Exemption Id.  | Description |
|  |             |

| QueryList : REACH-12th January 2017  |                         |                        |             |                |
|--|-------------------------|------------------------|-------------|----------------|
| Query  |                         |                        |             | Response       |
| 1 - Product(s) does not contain REACH Substances Of Very High Concern above the limits per the definition within REACH |                         |                        |             | TRUE           |
| CategoryLevel_Name   | CategoryLevel_Threshold | amount in product (mg) | Application | ppm in product |
|  |                         |                        |             |                |

| Material Composition Declaration :<br>note : Substance present with less 0.001mg will not be declared in this document |                                 |        |     |          |                    | Mfr Item Name                             | T26Y*441XXC |        |        |     | 8999999.0                                   | 1000071.2                      |
|--|---------------------------------|--------|-----|----------|--------------------|---|-------------|--------|--------|-----|---|--------------------------------|
| Homogeneous Material   | Material Group                  | Mass   | UoM | Level    | Substance Category | Substance                                 | CAS         | Exempt | Mass   | UoM | Concentration in homogeneous material (ppm) | Concentration in product (ppm) |
| Die or dies  | M-011 Other inorganic materials | 11.720 | mg  | supplier | die                | Silicon (Si)                              | 7440-21-3   |        | 11.055 | mg  | 943259                                      | 658820                         |
|  |                                 |        |     | supplier | metallization      | Aluminium (Al)                            | 7429-90-5   |        | 0.047  | mg  | 4010  | 2801                           |
|  |                                 |        |     | supplier | metallization      | Copper (Cu)                               | 7440-50-8   |        | 0.302  | mg  | 25768                                       | 17998                          |
|  |                                 |        |     | supplier | metallization      | Cobalt (Co)                               | 7440-48-4   |        | 0.001  | mg  | 85  | 60                             |
|  |                                 |        |     | supplier | metallization      | Tantalum (Ta)                             | 7440-25-7   |        | 0.042  | mg  | 3584  | 2503                           |
|  |                                 |        |     | supplier | metallization      | Tungsten (W)                              | 7440-33-7   |        | 0.136  | mg  | 11604                                       | 8105                           |
|  |                                 |        |     | supplier | Passivation        | Silicon Nitride                           | 12033-89-5  |        | 0.035  | mg  | 2986  | 2086                           |
| Plating Seed layer 1   | M-011 Other inorganic materials | 0.015  | mg  | supplier | Passivation        | Silicon Oxide                             | 7631-86-9   |        | 0.102  | mg  | 8703  | 6079                           |
|  |                                 |        |     | supplier | Alloy              | Ti  | 7440-32-6   |        | 0.003  | mg  | 200963                                      | 178                            |
|  |                                 |        |     | supplier | Alloy              | Cu  | 7440-50-8   |        | 0.012  | mg  | 799037                                      | 709                            |
| Re-passivatipon layer  | M-011 Other inorganic materials | 0.120  | mg  | supplier | Polymer            | 4-Butyrolactone                           | 96-48-0     |        | 0.108  | mg  | 900000                                      | 6424                           |
|  |                                 |        |     | supplier | Polymer            | 1-Methoxy-2-propyl acetate                | 108-65-6    |        | 0.012  | mg  | 100000                                      | 714                            |
| Redistribution Layer   | M-011 Other inorganic materials | 0.238  | mg  | supplier | Alloy              | Cu  | 7440-50-8   |        | 0.238  | mg  | 1000000                                     | 14181                          |
| Plating Seed layer 2   | M-011 Other inorganic materials | 0.008  | mg  | supplier | Alloy              | Ti  | 7440-32-6   |        | 0.002  | mg  | 200963                                      | 102                            |
|  |                                 |        |     | supplier | Alloy              | Cu  | 7440-50-8   |        | 0.007  | mg  | 799037                                      | 405                            |
| Re-passivatipon layer  | M-011 Other inorganic materials | 0.095  | mg  | supplier | Polymer            | 4-Butyrolactone                           | 96-48-0     |        | 0.086  | mg  | 900000                                      | 5107                           |
|  |                                 |        |     | supplier | Polymer            | 1-Methoxy-2-propyl acetate                | 108-65-6    |        | 0.010  | mg  | 100000                                      | 567                            |
| UBM  | M-011 Other inorganic materials | 0.292  | mg  | supplier | Alloy              | Cu  | 7440-50-8   |        | 0.292  | mg  | 1000000                                     | 17406                          |
| Solder ball  | Solder                          | 3.790  | mg  | supplier | Solder             | Sn  | 7440-31-5   |        | 3.724  | mg  | 982500                                      | 221937                         |
|  |                                 |        |     | supplier | Solder             | Ag  | 7440-22-4   |        | 0.045  | mg  | 12000                                       | 2711                           |
|  |                                 |        |     | supplier | Solder             | Cu  | 7440-50-8   |        | 0.019  | mg  | 5000  | 1129                           |
| Back Side Coating  | M-011 Other inorganic materials | 0.502  | mg  | supplier | Solder             | Ni  | 7440-02-0   |        | 0.002  | mg  | 500   | 113                            |
|  |                                 |        |     | supplier | Polymer            | Polybutylene terephthalate (PBT)          | 25038-59-9  |        | 0.326  | mg  | 650000                                      | 19458                          |
|  |                                 |        |     | supplier | Polymer            | Silica                                    | Proprietary |        | 0.098  | mg  | 195000                                      | 5837                           |
|  |                                 |        |     | supplier | Polymer            | Proprietary Material-Other Epoxy resins   | Proprietary |        | 0.038  | mg  | 75000                                       | 2245                           |
|  |                                 |        |     | supplier | Polymer            | Proprietary Material-Other Acrylic resins | Proprietary |        | 0.038  | mg  | 75000                                       | 2245                           |
|  |                                 |        |     | supplier | Polymer            | Carbon black                              | 1333-86-4   |        | 0.003  | mg  | 5000  | 150                            |