


Product				
Mfr Item Number	Mfr Item Name	Version	Mfr Site	Date
STM32F446MCY6TR	T145*421XXXA	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		 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 :						Mfr Item Name	T145*421XXA				8999999.0	1000071.2
note : Substance present with less 0.001mg will not be declared in this document												
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