




Product				
Mfr Item Number	Mfr Item Name	Version	Mfr Site	Date
STM32G431RB16	P021*468XXXZ	A	9996	2019-06-03
	Amount	UoM	Unit type	ST ECOPACK Grade
	28.45	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
3	260	3		
bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment	
Not Applicable; if coating is used or other bulk termination	NAC	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
BGA	5x5	81	No lead	
Comment	Package : A019 UFBGA 5X5X0.6 64L P 0.5 MM 8526322			

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-27th June 2018				
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 : note : Substance present with less 0.001mg will not be declared in this document						Mfr Item Name	P021*468XXZ				7000001.0	1000000.0
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	2.081	mg	supplier	die	Silicon (Si)	7440-21-3		1.744	mg	838059	61301
				supplier	metallization	Aluminium (Al)	7429-90-5		0.016	mg	7689	562
				supplier	metallization	Copper (Cu)	7440-50-8		0.143	mg	68717	5026
				supplier	metallization	Tantalum (Ta)	7440-25-7		0.046	mg	22105	1617
				supplier	metallization	Titanium (Ti)	7440-32-6		0.002	mg	961	70
				supplier	metallization	Tungsten (W)	7440-33-7		0.001	mg	481	35
				supplier	Passivation	Silicon Nitride	12033-89-5		0.036	mg	17299	1265
				supplier	Passivation	Silicon Oxide	7631-86-9		0.093	mg	44690	3269
				DIE OR DIES	M-011 Other inorganic materials	1.575	mg	supplier	DIE	Silicon (Si)	7440-21-3	
SUBSTRATE (DS7409HGB)	M-011 Other inorganic materials	11.317	mg	supplier	CORE	Glass Cloth	65997-17-3		0.679	mg	60001	23868
				supplier	CORE	Copper (Cu)	7440-50-8		1.698	mg	150002	59670
				supplier	CORE	Epoxy	28906-96-9		0.238	mg	21000	8354
				supplier	CORE	Flame resistant resin	223769-10-6		0.170	mg	15000	5967
				supplier	CORE	Heat resistant resin	25722-66-1		0.170	mg	15000	5967
				supplier	CORE	Silica filler	7631-86-9		0.306	mg	27000	10741
				supplier	CORE	Metal Hydroxide	Proprietary		0.136	mg	12000	4774
				supplier	SOLDERMASK (AUS320)	Solvent naphtha (petroleum), Heavy arom.	64742-94-5		1.162	mg	102713	40858
				supplier	SOLDERMASK (AUS320)	Naphthalene	91-20-3		0.123	mg	10832	4309
				supplier	SOLDERMASK (AUS320)	Phosphin oxide derivative	Proprietary		0.042	mg	3735	1486
				supplier	SOLDERMASK (AUS320)	Talc containing no asbestiform fibers	14807-96-6		0.317	mg	28013	11143
				supplier	SOLDERMASK (AUS320)	Barium sulfate	7727-43-7		0.528	mg	46688	18572
				supplier	SOLDERMASK (AUS320)	Dipropylene glycol monomethyl ether	34590-94-8		0.317	mg	28013	11143
				supplier	CU FOIL	Copper (Cu)	7440-50-8		3.395	mg	300004	119339
				supplier	NI PLATING	Nickel (Ni)	7440-02-0		1.674	mg	147924	58843
				supplier	AU PLATING	Gold (Au)	7440-57-5		0.363	mg	32076	12760
DIE ATTACH (ATB-130U)	M-011 Other inorganic materials	0.131	mg	supplier	GLUE	Butadiene,acrylonitrile polymer,carboxy-termi	68610-41-3		0.079	mg	600000	2769
				supplier	GLUE	Phenol-formaldehyde polymer	9003-35-4		0.013	mg	100000	462
				supplier	GLUE	Phenol polymer with formaldehyde,glycidyl et	28064-14-4		0.013	mg	100000	462
				supplier	GLUE	Dapsone	80-08-0		0.013	mg	100000	462
				supplier	GLUE	Reaction product bisphenol-A-(epichlorhydrin	25068-38-6		0.001	mg	10000	46
				supplier	GLUE	4,4, isopropylidenediphenol	80-05-7		0.001	mg	10000	46
				supplier	GLUE	Other Substance	Proprietary		0.011	mg	80000	369
BONDING WIRE (Au HP)	M-011 Other inorganic materials	0.005	mg	supplier	BONDING WIRE	Gold (Au)	7440-57-5		0.005	mg	1000000	158
SOLDERBALL (Sn3.5Ag)	M-011 Other inorganic materials	1.712	mg	supplier	SOLDERBALL	Tin (Sn)	7440-31-5		1.652	mg	965000	58056
				supplier	SOLDERBALL	Silver (Ag)	7440-22-4		0.060	mg	35000	2106
ENCAPSULATION (GE-100LFC5)	M-011 Other inorganic materials	11.629	mg	supplier	MOLDING COMPOUND	Solid Epoxy Resin	Proprietary		0.754	mg	55000	26505
				supplier	MOLDING COMPOUND	Hardener	Proprietary		0.411	mg	30000	14457
				supplier	MOLDING COMPOUND	Carbon black	1333-86-4		0.069	mg	5000	2410
				supplier	MOLDING COMPOUND	Metal Hydroxide	Proprietary		0.137	mg	10000	4819
				supplier	MOLDING COMPOUND	Amorphous silica	60676-86-0		10.258	mg	900000	360573