


Product				
Mfr Item Number	Mfr Item Name	Version	Mfr Site	Date
STM32L451RE16 STM32L451RET6P	S45W*462XXXY	A	998Z	2018-03-04
Amount	UoM	Unit type	ST ECOPACK Grade	
355.83	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	
able; if coating is used or other bulk	Tin (Sn), matte	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
QFP	10X10X1.4	64	L Bend	
Comment	Package : 5W LQFP 64 10x10x1.4 1 0051434			

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 : California Prop65 list, dated 27th January 2017			
Query	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	TRUE		
Substance	amount in product (mg)	Application	ppm in product
Lead	0.004	Impurities	12

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 : note : Substance present with less 0.001mg will not be declared in this document						Mfr Item Name	S45W*462XXXY				6000000.0	0.0
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	18.474	mg	supplier	die	Silicon (Si)	7440-21-3		18.134	mg	981596	50963
				supplier	metallization	Aluminium (Al)	7429-90-5		0.016	mg	866	45
				supplier	metallization	Copper (Cu)	7440-50-8		0.144	mg	7795	405
				supplier	metallization	Tantalum (Ta)	7440-25-7		0.047	mg	2544	132
				supplier	metallization	Titanium (Ti)	7440-32-6		0.002	mg	108	6
				supplier	metallization	Tungsten (W)	7440-33-7		0.001	mg	54	3
				supplier	Passivation	Silicon Nitride	12033-89-5		0.037	mg	2003	104
				supplier	Passivation	Silicon Oxide	7631-86-9		0.093	mg	5034	261
				Supplier	Metals	Silver	7440-22-4		1.076	mg	901000	3024
				Supplier	Plastics/polymers	Highly cross-linked polymer	Proprietary		0.118	mg	99000	332
Mold Compound_EME-G631SHQ_Sur	M-011 Other inorganic materials	236.590	mg	Supplier	Plastics/polymers	Epoxy Resin A	Proprietary		5.172	mg	21000	14535
				Supplier	Plastics/polymers	Epoxy Resin B	Proprietary		5.172	mg	21000	14535
				Supplier	Plastics/polymers	Phenol Resin	Proprietary		13.792	mg	56000	38760
				Supplier	Glass	Silica(Amorphous)A	60676-86-0		182.518	mg	780450	-487066
				Supplier	Glass	Silica(Amorphous)B	7631-86-9		28.402	mg	115320	79818
				Supplier	Non-metals	Carbon Black	1333-86-4		1.534	mg	6230	4312
Wire_AG Si TYPE_MKE	Bonding Wire	0.634	mg	Supplier	Metals	Silver	7440-22-4		0.609	mg	960000	1711
				Supplier	Metals	Others	Proprietary		0.025	mg	40000	71
Plating anode_Pure Tin_Nuo Nengda	M-011 Other inorganic materials	1.438	mg	Supplier	Metals	Tin	7440-31-5		1.438	mg	1000000	4041
Leadframe_C9+Ag_HDS	Copper & its alloys	97.500	mg	Supplier	Metals	Iron	7439-89-6		2.132	mg	21865	5991
				Supplier	Non-metals	Phosphorus	7723-14-0		0.071	mg	730	200
				Supplier	Metals	Zinc	7440-66-6		0.110	mg	1125	308
				Supplier	Metals	Copper	7440-50-8		89.040	mg	913235	250233
				Supplier	Metals	Silver	7440-22-4		6.143	mg	63000	17262
				JIG-R	Metals	Lead	7439-92-1		0.004	mg	45	12