

Product				
Mfr Item Number	Mfr Item Name	Version	Mfr Site	Date
STM32L451CEU6	S3MI*462XXXY	A	998Z	2018-11-01
	Amount	UoM	Unit type	ST ECOPACK Grade
	97.87	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	Tin (Sn), matte	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
QFN	7X7X0.55	48	No lead	
Comment	Package : A0B9 UFQFPN 7X7X0.55 48L 0.5 MM PITCH 8202210			

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 : note : Substance present with less 0.001mg will not be declared in this document						Mfr Item Name	S3MI*462XXXY				6000001.0	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	23.038	mg	supplier	die	Silicon (Si)	7440-21-3		22.614	mg	981596	231055
				supplier	metallization	Aluminium (Al)	7429-90-5		0.020	mg	868	204
				supplier	metallization	Copper (Cu)	7440-50-8		0.180	mg	7813	1839
				supplier	metallization	Tantalum (Ta)	7440-25-7		0.058	mg	2518	593
				supplier	metallization	Titanium (Ti)	7440-32-6		0.002	mg	87	20
				supplier	metallization	Tungsten (W)	7440-33-7		0.002	mg	87	20
				supplier	Passivation	Silicon Nitride	12033-89-5		0.046	mg	1997	470
				supplier	Passivation	Silicon Oxide	7631-86-9		0.116	mg	5035	1185
				Supplier	Metals	Silver	7440-22-4		0.672	mg	704535	6869
				Die Attach Epoxy_EPOXY 8290_Henke	M-011 Other inorganic materials	0.954	mg	Supplier	Plastics/polymers	Bisphenol-F, epoxy resin	9003-36-5	
Supplier	Polymers	Fatty acids, polymers with epichlorohydrin	68475-94-5						0.046	mg	48437	472
Supplier	Organic Compounds	Gamma Butyrolactone	96-48-0						0.046	mg	48437	472
Supplier	Epoxy Resin	Epoxy Resin	Proprietary						0.046	mg	48437	472
Supplier	Amines	Poly(Oxy(methyl-1, 2-ethanediyl)	9046-10-0						0.046	mg	48437	472
Supplier	Metallic compounds	Copper Oxide	1317-38-0						0.046	mg	48437	472
Supplier	Organic Compounds	1,4-Bis(2,3-epoxypropoxy) butane	2425-79-8						0.005	mg	4844	47
Mold Compound_EME-G770_Sumitor	M-011 Other inorganic materials	15.883	mg					Supplier	Epoxy Resin	Epoxy Resin A	Proprietary	
				Supplier	Epoxy Resin	Epoxy Resin B	Proprietary		0.702	mg	19837	7177
				Supplier	Phenol Resin	Phenol Resin A	Proprietary		0.702	mg	19837	7177
				Supplier	Phenol Resin	Phenol Resin B	Proprietary		0.702	mg	19837	7177
				Supplier	Glass	Silica (Amorphous) A	60676-86-0		6.409	mg	732452	-934514
				Supplier	Glass	Silica (Amorphous) B	7631-86-9		5.764	mg	162767	58889
				Supplier	Metallic compounds	Metal Hydroxide	Proprietary		0.702	mg	19837	7177
				Supplier	Additives	Carbon Black	1333-86-4		0.198	mg	5595	2024
Bonding wire_WIRE AG 0.8MIL SI TYP	Bonding Wire	0.427	mg	Supplier	Metals	Silver	7440-22-4		0.410	mg	960000	4184
				Supplier	Metals	Others	Proprietary		0.017	mg	40000	174
Anode Ball_Pure Tin_Nuo Nengda	M-011 Other inorganic materials	3.693	mg	Supplier	Metals	Tin	7440-31-5		3.693	mg	1000000	37729
Lead frame_C7+AG_HDS	Copper & its alloys	53.878	mg	Supplier	Metals	Nickel	7440-02-0		1.582	mg	29365	16165
				Supplier	Glass	Silicon	7440-21-3		0.350	mg	6500	3578
				Supplier	Metals	Magnesium	7439-95-4		0.084	mg	1565	862
				Supplier	Metals	Silver	7440-22-4		3.394	mg	63000	34681
				Supplier	Metals	Copper	7440-50-8		48.467	mg	899570	495205