



**Material Composition Declaration**  
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This document is a declaration of the substances within the manufacturer listed item. Note: if the item is an assembly with lower level parts, the declaration encompasses all lower level materials for which the manufacturer has engineering responsibility.

1752-21.1	IPC Web Site for Information on IPC-1752 Standard <a href="http://www.ipc.org/IPC-175x">http://www.ipc.org/IPC-175x</a>	Form Type * Distribute	Declaration Class * Class 6 - RoHS Yes/No, Homogeneous Materials and Mfg Information
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**Supplier Information**

<b>Company name*</b> onsemi	Company unique ID	Unique ID Authority	<b>Response Date*</b> 2023-06-08
<b>Contact Name</b> Product-Env-Stewards	Title - Contact Product Enviro Compliance	<b>Phone - Contact*</b> NA	<b>Email - Contact*</b> Product-Env-Stewards@onsemi.com
<b>Authorized Representative*</b> Product-Env-Stewards	Title - Representative Product Enviro Compliance	<b>Phone - Representative*</b> NA	<b>Email - Representative*</b> Product-Env-Stewards@onsemi.com

Requester Item Number	Mfr Item Number	Mfr Item Name	Effective Date	Version	Manufacturing Site	Weight*	UOM	Unit Type
	STK5FK-CA1D-E	Solar inverter	2023-06-08		VN2	49200.03	mg	Each

**Manufacturing Process Information**

Terminal Plating / Grid Array Material	Terminal Base Alloy	J-STD-020 MSL Rating	Peak Process Body Temperature	Max Time at Peak Temperature	Number of Reflow Cycles
Matte Tin (Sn) - annealed	CU Alloy	NA	0 C	30 seconds	3

Comments

**For more information regarding material composition please refer to page 3**

RoHS Material Composition Declaration		Declaration Type *	Detailed
Directive 2015/863/EU amending RoHS Directive 2011/65/EU	RoHS Definition: Quantity limit of 0.01% by mass (100 PPM) in homogeneous material for Cadmium and quantity limit of 0.1% by mass (1000 PPM) in homogeneous material for: Lead (Pb), Mercury (Hg), Hexavalent Chromium (Cr6+), Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE), and Bis(2-ethylhexyl) phthalate (DEHP), Benzyl-butyl phthalate (BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP).		
<p>Please indicate whether any homogeneous material (as defined by the RoHS Directive, EU 2011/65/EU and implemented by the laws of the European Union member states) of the part identified on this form contains lead, mercury, cadmium, hexavalentchromium, polybrominated biphenyls and/or polybrominated diphenyl ethers (each a "RoHS restricted substance") in excess of the applicable quantity limit identified above. If a homogeneous material within the part contains a RoHS restricted substance in excess of an applicable quantity limit, please indicate below which, if any, RoHS exemption you believe may apply. If the part is an assembly with lower level components, the declaration shall encompass all such components. Supplier certifies that it gathered the information it provides in this form using appropriate methods to ensure its accuracy and that such information is true and correct to the best of its knowledge and belief, as of the date that Supplier completes this form. Supplier acknowledges that Company will rely on this certification in determining the compliance of its products with European Union member state laws that implement the RoHS Directive. Company acknowledges that Supplier may have relied on information provided by others in completing this form, and that Supplier may not have independently verified such information. However, in situations where Supplier has not independently verified information provided by others, Supplier agrees that, at a minimum, its suppliers have provided certifications regarding their contributions to the part, and those certifications are at least as comprehensive as the certification in this paragraph. If the Company and the Supplier enter into a written agreement with respect to the identified part, the terms and conditions of that agreement, including any warranty rights and/or remedies provided as part of that agreement, will be the sole and exclusive source of the Supplier's liability and the Company's remedies for issues that arise regarding information the Supplier provides in this form. In the absence of such written agreement, the warranty rights and/or remedies of Supplier's Standard Terms and Conditions of Sale applicable to such part shall apply.</p>			
RoHS Declaration *	4 - Item(s) does not contain RoHS restricted substances per the definition above except for selected exemptions		Supplier Acceptance * Accepted
<p><b>Exemption: 7a: Lead in high melting temperature type solders (i.e. lead based solder alloys containing 85% by weight or more lead).</b>  <b>Exemption: 7c-I Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.</b></p>			
Exemption List Version	EL-2011/534/EU		
<b>Declaration Signature</b>			
<p><b>Instructions: Complete all of the required fields on all pages of this form. Select the "Accepted" on the Supplier Acceptance drop-down. This will display the signature area. Digitally sign the declaration (if required by the Requester) and click on Submit Form to have the form returned to the Requester.</b></p>			
Supplier Digital Signature	Rastislav Drska		

**Homogeneous Material Composition Declaration for Electronic Products**

SubItem Instructions: The presence of any JIG Level A or B substances must be declared. [1] indicate the subpart in which the substance is located, [2] provide a description of the homogeneous material [3], enter the weight of the homogeneous material.

Substance Instructions: [A] select the Level (JIG A, JIG B, Requester or Supplier) [B] select the substance category (JIG or Requester) or enter a value (Supplier). [C] select the substance (JIG) or enter the substance and CAS (Other). [D] select a RoHS exemption, if applicable [E] enter the weight of the substance or the PPM concentration [F] Optionally enter the positive (+) and negative (-) tolerance in percent (Note: percent tolerance values are expected to cover a 3 sigma range of distribution unless otherwise noted).

Homogeneous Material	Weight	Unit of Measure	Level	Substance	CAS	Exempt	Weight	Unit of Measure			
Ceramic Substrate	12367.3	mg	Supplier	Bisphenol A_Epichlorohydrin Polymer	25068-38-6		154.5912	mg			
			Supplier	Aluminum Trioxide (Al2O3)	1344-28-1		609.7079	mg			
			B	Nickel (Ni)	7440-02-0		21.0244	mg			
			Supplier	Acrylic resins	Proprietary Data		8.6571	mg			
			Supplier	Copper (Cu)	7440-50-8		831.0825	mg			
			Supplier	Barium Sulfate (BaSO4)	7727-43-7		6.1837	mg			
			Supplier	Aluminum (Al)	7429-90-5		10736.0527	mg			
Chip Parts	135.86	mg		Brominated epoxy resin	proprietary data		0.1359	mg			
			Supplier	Silver (Ag)	7440-22-4		2.0515	mg			
			Supplier	Epoxy resins	129915-35-1		3.8584	mg			
			Supplier	Bisphenol A, Epichlorohydrin polymer	25036-25-3, 25068-38-6		0.0272	mg			
			Supplier	Tin (Sn)	7440-31-5		4.6736	mg			
			Supplier	Organic Phosphorus compound	Proprietary Data		0.0136	mg			
			Supplier	Silica Amorphous (SiO2)	7631-86-9		6.3582	mg			
			Supplier	Chromium (Cr)	7440-47-3		0.0136	mg			
			Supplier	Ceramic	12013-47-7, 12047-27-7		46.3147	mg			
			Supplier	Phenolic resins	Proprietary Data		0.0679	mg			
			B	Antimony Trioxide (Sb2O3)	1309-64-4		0.1359	mg			
			Supplier	Silicon (Si)	7440-21-3		0.2717	mg			
			Supplier	Carbon Black (C)	1333-86-4		0.0408	mg			
			Supplier	Aluminum Hydroxide (Al(OH)3)	21645-51-2		1.1548	mg			
			Supplier	Aluminum Trioxide (Al2O3)	1344-28-1		34.9296	mg			
			Supplier	Fused Silica (SiO2)	60676-86-0		6.2767	mg			
			B	Nickel (Ni)	7440-02-0		4.3883	mg			
			Supplier	Gold (Au)	7440-57-5		0.2717	mg			
			A	Lead Oxide (PbO)	1317-36-8	7c	1.0189	mg			
			Supplier	Copper (Cu)	7440-50-8		23.8298	mg			
			Supplier	Silica Crystalline (SiO2)	14808-60-7		0.0272	mg			
			Die	28.49	mg	Supplier	Silicon (Si)	7440-21-3		28.4074	mg
						Supplier	Polyimide	Proprietary Data		0.0826	mg

Die Attach	25.63	mg	Supplier	Silver (Ag)	7440-22-4		1.2815	mg
			Supplier	Other Epoxy resins	Proprietary Data		0.2563	mg
			A	Lead (Pb)	7439-92-1	7a	22.8107	mg
			Supplier	Tin (Sn)	7440-31-5		1.1533	mg
			Supplier	Other Metal Oxide	Proprietary Data		0.1025	mg
			B	Antimony Pentoxide (Sb2O5)	1314-60-9		0.0256	mg
Heat Sink	1821.15	mg	Supplier	Silver (Ag)	7440-22-4		5.0992	mg
			Supplier	Copper (Cu)	7440-50-8		1816.0508	mg
Lead Frame	2330.84	mg	Supplier	Iron (Fe)	7439-89-6		2.3308	mg
			Supplier	Copper (Cu)	7440-50-8		2327.8101	mg
			Supplier	Phosphorus (P)	7723-14-0		0.6993	mg
Mold Compound-Black	31656.3	mg		Brominated epoxy resin	proprietary data		60.147	mg
			Supplier	Phenolic Resin	Proprietary Data		1459.3555	mg
			B	Antimony Trioxide (Sb2O3)	1309-64-4		60.147	mg
			Supplier	Carbon Black (C)	1333-86-4		107.6314	mg
			Supplier	Aluminum Hydroxide (Al(OH)3)	21645-51-2		2048.1626	mg
			Supplier	Aluminum Trioxide (Al2O3)	1344-28-1		5125.1553	mg
			Supplier	Fused Silica (SiO2)	60676-86-0		19493.9512	mg
			Supplier	Ortho-Cresol Novolac Resin	29690-82-2		3118.1458	mg
Supplier	Silica Crystalline (SiO2)	14808-60-7		183.6026	mg			
Plating	62.6	mg	Supplier	Tin (Sn)	7440-31-5		33.2156	mg
			B	Nickel (Ni)	7440-02-0		29.3844	mg
Solder Ball	466.37	mg	Supplier	Silver (Ag)	7440-22-4		14.5974	mg
			Supplier	Tin (Sn)	7440-31-5		448.2748	mg
			B	Antimony (Sb)	7440-36-0		0.0466	mg
			Supplier	Copper (Cu)	7440-50-8		3.4511	mg
Wire Bond - Al	305.49	mg	Supplier	Aluminum (Al)	7429-90-5		305.49	mg