



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 http://www.ipc.org/IPC-175x	Form Type * Distribute	Declaration Class * Class 6 - RoHS Yes/No, Homogeneous Materials and Mfg Information
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Supplier Information

Company name* onsemi	Company unique ID	Unique ID Authority	Response Date* 2023-06-07
Contact Name Product-Env-Stewards	Title - Contact Product Enviro Compliance	Phone - Contact* NA	Email - Contact* Product-Env-Stewards@onsemi.com
Authorized Representative* Product-Env-Stewards	Title - Representative Product Enviro Compliance	Phone - Representative* NA	Email - Representative* Product-Env-Stewards@onsemi.com

Requester Item Number	Mfr Item Number	Mfr Item Name	Effective Date	Version	Manufacturing Site	Weight*	UOM	Unit Type
	AR0820ATSC18XME A0-TPBR	8MP 1/2 CIS SO	2023-06-07		TWU	294.06	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
SnAgCu	CU Alloy	3	260 C	30 seconds	3

Comments
ATTENTION: MSL 3 Rated item requires Bake and Dry Pack (after electrical test)
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 *	1 - Item(s) does not contain RoHS restricted substances per the definition above		Supplier Acceptance * Accepted
Exemption: If the declared item does not contain RoHS restricted substances per the definition above except for defined RoHS exemptions, then select the corresponding response in the RoHS Declaration above and choose all applicable exemptions.			
Exemption List Version	EL-2011/534/EU		
Declaration Signature			
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.			
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
Die	53.38	mg	Supplier	Silicon (Si)	7440-21-3		52.9049	mg
			Supplier	Aluminum (Al)	7429-90-5		0.4751	mg
Die Attach	8.1	mg		Bismaleimide Monomer	proprietary data		3.1185	mg
			Supplier	POLY(ETHYLENE GLYCOL) PHENYL ETHER ACRYLATE	56641-05-5		0.0405	mg
			Supplier	2,2-Bis(4-hydroxyphenyl)propane-epichlorohydrin copolymer acrylate	55818-57-0		0.81	mg
			Supplier	Bis(4-tert-butylcyclohexyl) peroxydicarbonate	15520-11-3		0.0405	mg
			Supplier	2,2-dimethyl-1,3-propanediyl dimethacrylate	1985-51-9		0.81	mg
			Supplier	2-phenoxy ethyl acrylate	48145-04-6		0.81	mg
			Supplier	Bisphenol A_Epichlorohydrin Polymer	25068-38-6		0.0405	mg
			Supplier	Other Additive Agents	Proprietary Data		1.62	mg
			Supplier	Formaldehyde Polymer	9003-36-5		0.81	mg
			Epoxy	12.16	mg	Supplier	Imidazole Addition	68490-66-4
Supplier	Bisphenol A_Epichlorohydrin Polymer	25068-38-6					1.216	mg
Supplier	Zirconium Dioxide (ZrO2)	1314-23-4					1.216	mg
Supplier	Silica Amorphous (SiO2)	7631-86-9					1.216	mg
Supplier	Formaldehyde Polymer	9003-36-5					4.864	mg
Imaging Lens	60.4	mg	Supplier	Sulfur (S)	7704-34-9		0.302	mg
			Supplier	Titanium Dioxide (TiO2)	13463-67-7		3.02	mg
			Supplier	Sodium Monoxide (Na2O)	1313-59-3		3.02	mg
			Supplier	Boron Trioxide (B2O3)	1303-86-2		3.02	mg
			Supplier	Zinc Monoxide (ZnO)	1314-13-2		3.02	mg
			Supplier	Aluminum Trioxide (Al2O3)	1344-28-1		3.02	mg
			Supplier	Potassium Monoxide (K2O)	12136-45-7		3.02	mg
			Supplier	Silica Crystalline (SiO2)	14808-60-7		41.978	mg
Mold Compound	52.25	mg		Epoxy resin	proprietary data		12.958	mg
			Supplier	Other Additive Agents	Proprietary Data		1.672	mg
			Supplier	Silica Amorphous (SiO2)	7631-86-9		5.225	mg
			Supplier	Fused Silica (SiO2)	60676-86-0		30.8275	mg
			Supplier	Silica Crystalline (SiO2)	14808-60-7		1.5675	mg

Plating-2	0.82	mg	B	Nickel (Ni)	7440-02-0		0.82	mg
Solder Ball	59.47	mg	Supplier	Silver (Ag)	7440-22-4		1.7841	mg
			Supplier	Tin (Sn)	7440-31-5		57.3885	mg
			Supplier	Copper (Cu)	7440-50-8		0.2973	mg
Solder Mask	5.15	mg		Epoxy resin	proprietary data		0.618	mg
			Supplier	Acrylate	Proprietary Data		1.9673	mg
			Supplier	Talc	14807-96-6		0.1391	mg
			Supplier	Miscellaneous	Trade Secret		0.1905	mg
			Supplier	Barium Sulfate (BaSO4)	7727-43-7		2.2351	mg
Substrate Copper Foil	3.97	mg	Supplier	Copper (Cu)	7440-50-8		3.97	mg
Substrate - Core Material	19.7	mg		Epoxy resin	proprietary data		4.269	mg
			Supplier	Fiber Glass (SiO2)	65997-17-3		15.431	mg
Substrate Plating-Au	0.34	mg	Supplier	Gold (Au)	7440-57-5		0.34	mg
Substrate Plating-Cu	17.72	mg	Supplier	Copper (Cu)	7440-50-8		17.72	mg
Wire Bond - Au	0.6	mg	Supplier	Gold (Au)	7440-57-5		0.6	mg