Manufacturer Information

Company:	Azoteq(Pty) Ltd 109 Main Road Paarl Western Cape Republic of South Africa

Authorised Representative

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Product Information

Product:	IQS156 z MSR
Package type:	MSOP/10LD
Manufacturing site:	Anst
Weight:	27.09
Unit:	mg

Note: 'z' in the product description refers to a user configuration option

Manufacturing Process Information

Terminal Plating:	Refer to table below
J-STD MSL Rating:	1
Peak Process Body Temp:	260 °C
Max Time at Peak Temp:	25 Sec
Number of Reflow:	3

REACH Declaration in terms of SHVC list published 2015-12-17 (REACH 168)

Azoteq is aware of, and agrees with, the purpose of REACH which is to ensure a high level of protection of human health and the environment. Azoteq is compliant with all applicable requirements of REACH and provides information regarding the chemical composition of our product(s) in this document.

Product manufacturers or importers into Europe are obligated under Article 33 of REACH to inform recipients of any articles that contain chemicals on the Substances of Very High Concern (SVHC) candidate list above 0.1% concentration (by weight per article). The products manufactured and marketed by Azoteq mentioned above do not contain substances indicated in the table below in concentrations greater than 0.1% by weight per article.

Azoteq is an article producer (semiconductor devices) and does not manufacture in Europe. Azoteq is not required to pre-register with REACH

Note: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) that entered into force on June, 2007 applies to this declaration.

Uncertainty Statement:

While Azoteq has endeavored to provide information which is accurate and up to date, this document and its contents are provided on a strict 'as is' and 'as available' basis. Azoteq disclaims all warranties, express or implied related to this document and its contents, including but not limited to implied warranties of completeness, truth, accuracy, merchantability, fitness for a particular purpose and non-infringement. Azoteq shall have no responsibility and assumes no liability for any cost, loss or damage of any kind which could arise, directly or indirectly, from the use or inability to use this document and/or its contents.

The full materials composition information follows:

Material composition for part: IQS156 z MSR based on package: MSOP/10LD with Die: AZQ145							
Composition Part	**Material name**	**Material (weight)**	**Material % (weight)**	**Element name composition**	**CAS No.**	**Element % (weight)**	**Element (weight)**
Die	AZQ145	1.74	6.43%	Si Die	7440-21-3	100.00%	1.74
Die Attach	8290	0.04	0.15%	Amine	commercial secret	4.81%	0.00
				Epoxy Resin	commercial secret	17.18%	0.01
				Gamma Butyrolactone	96-48-0	4.81%	0.00
				Metal Oxide	commercial secret	4.81%	0.00
				Silver	7440-22-4	68.38%	0.03
Encapsulation	EME G600	16.50	60.91%	Carbon Black	1333-86-4	0.50%	0.08
				Epoxy Resin	Trade secret A	5.00%	0.83
				Phenol Resin	Trade secret B	5.00%	0.83
				Silica(Amorphous)	60676-86-0	89.50%	14.77
Lead Frame	C7-SSM 72x96	8.32	30.70%	Ag	7440-22-4	1.29%	0.11
				Cu	7440-50-8	95.75%	7.96
				Mg	7439-95-4	0.10%	0.01
				Ni	7440-02-0	2.21%	0.18
				Si	7440-21-3	0.65%	0.05
Bond Wire	25u	0.14	0.51%	Au	7440-57-5	99.99%	0.14
				Other	N/A	0.01%	0.00
Plating	Sn	0.35	1.29%	Sn	7440-31-5	99.99%	0.35
				Other	N/A	0.01%	0.00

REACH SVHC Chemical Substance List for: IQS156 z MSR				
ECHA SVHC Item	**Substance Name**	**CAS Number**	**Weight of substance**	**w/w in component (%)**
1	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	Not Used	
2	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	Not Used	
3	reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)		Not Used	
4	Cadmium fluoride	7790-79-6	Not Used	
5	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	Not Used	
6	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	Not Used	
7	Cadmium sulphate	10124-36-4"31119-53-6	Not Used	
8	1,2-Benzenedicarboxylic acid, dihexylester, branched and linear	68515-50-4	Not Used	
9	Sodium peroxometaborate	2093666	Not Used	
10	Cadmium chloride	10108-64-2	Not Used	
11	Sodium perborate,perboric acid, sodium salt	15120-21-5	Not Used	
12	Trixylyl phosphate	25155-23-1	Not Used	
13	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	Not Used	
14	Lead di(acetate)	301-04-2	Not Used	
15	Cadmium sulphide	1306-23-6	Not Used	
16	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo] -5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	Not Used	
17	Dihexyl phthalate	84-75-3	Not Used	
18	Imidazolidine-2-thione (2-imidazoline-2-thiol)	96-45-7	Not Used	
19	Cadmium oxide	1306-19-0	Not Used	
20	Pentadecafluorooctanoic acid (PFOA)	335-67-1	Not Used	
21	Dipentyl phthalate (DPP)	131-18-0	Not Used	
22	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	Not Used	

23	4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]		Not Used	
24	Cadmium	7440-43-9	Not Used	
25	Bis(pentabromophenyl) ether (decabromodiphenyl ether) (DecaBDE)	1163-19-5	Not Used	
26	Lead dinitrate	10099-74-8	Not Used	
27	Lead oxide sulfate	12036-76-9	Not Used	
28	Henicosafluoroundecanoic acid	2058-94-8	Not Used	
29	4,4'-oxydianiline and its salts	101-80-4	Not Used	
30	Fatty acids, C16-18, lead salts	91031-62-8	Not Used	
31	Sulfurous acid, lead salt, dibasic	62229-08-7	Not Used	
32	Silicic acid (H₂Si₂O₅), barium salt (1:1), lead-doped [with lead (Pb) content above the applicable generic concentration limit for â€™toxicity for reproductionâ€™ Repr. 1A (CLP) or category 1 (DSD),the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]	68784-75-8	Not Used	
33	4-Aminoazobenzene	22162	Not Used	
34	o-aminoazotoluene	97-56-3	Not Used	
35	Tricosafluorododecanoic acid	307-55-1	Not Used	
36	Trilead bis(carbonate) dihydroxide	1319-46-6	Not Used	
37	Lead cyanamidate	20837-86-9	Not Used	
38	Biphenyl-4-ylamine	92-67-1	Not Used	
39	4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]		Not Used	
40	Pentalead tetraoxide sulphate	12065-90-6	Not Used	

41	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]		Not Used	
42	Lead titanium trioxide	12060-00-3	Not Used	
43	Dioxobis(stearato)trilead	12578-12-0	Not Used	
44	N-pentyl-isopentylphthalate	776297-69-9	Not Used	
45	Acetic acid, lead salt, basic	51404-69-4	Not Used	
46	1-bromopropane (n-propyl bromide)	106-94-5	Not Used	
47	Heptacosafluorotetradecanoic acid	376-06-7	Not Used	
48	Furan	110-00-9	Not Used	
49	1,2-Diethoxyethane	629-14-1	Not Used	
50	N,N-dimethylformamide	25174	Not Used	
51	Methyloxirane (Propylene oxide)	75-56-9	Not Used	
52	Pentacosafluorotridecanoic acid	72629-94-8	Not Used	
53	6-methoxy-m-toluidine (p-cresidine)	120-71-8	Not Used	
54	Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3] [The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry]	85-42-7"13149-00-3"14166-21-3	Not Used	
55	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	Not Used	
56	o-Toluidine	95-53-4	Not Used	
57	Silicic acid, lead salt	11120-22-2	Not Used	
58	Tetralead trioxide sulphate	12202-17-4	Not Used	
59	Trilead dioxide phosphonate	12141-20-7	Not Used	
60	4,4'-methylenedi-o-toluidine	838-88-0	Not Used	
61	Lead titanium zirconium oxide	12626-81-2	Not Used	
62	Tetraethyllead	78-00-2	Not Used	
63	Dimethyl sulphate	77-78-1	Not Used	
64	Diisopentylphthalate	605-50-5	Not Used	
65	Lead monoxide (lead oxide)	1317-36-8	Not Used	
66	[Phthalato(2-)]dioxotrilead	69011-06-9	Not Used	
67	Orange lead (lead tetroxide)	1314-41-6	Not Used	
68	Pyrochlore, antimony lead yellow	8012-00-8	Not Used	
69	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	Not Used	

70	Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [The individual isomers [2], [3] and [4] (including their cis- and trans-stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]	25550-51-0"19438-60-9"48122-14-1"57110-29-9	Not Used	
71	Diethyl sulphate	64-67-5	Not Used	
72	N-methylacetamide	79-16-3	Not Used	
73	Methoxyacetic acid	625-45-6	Not Used	
74	Lead bis(tetrafluoroborate)	13814-96-5	Not Used	
75	Dibutyltin dichloride (DBTC)	683-18-1	Not Used	
76	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	Not Used	
77	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	Not Used	
78	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) (ADCA)	123-77-3	Not Used	
79	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michlerâ€™s base)	101-61-1	Not Used	
80	Î±,Î±-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with â‰¥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	6786-83-0	Not Used	
81	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with â‰¥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	548-62-9	Not Used	
82	4,4'-bis(dimethylamino)benzophenone (Michlerâ€™s ketone)	90-94-8	Not Used	
83	1,2-bis(2-methoxyethoxy)ethane (TEGDME,triglyme)	112-49-2	Not Used	
84	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (Î²-TGIC)	59653-74-6	Not Used	
85	Diboron trioxide	1303-86-2	Not Used	
86	Formamide	27735	Not Used	
87	1,2-dimethoxyethane,ethylene glycol dimethyl ether (EGDME)	110-71-4	Not Used	
88	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	2451-62-9	Not Used	

89	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with â‰¥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	561-41-1	Not Used	
90	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with â‰¥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	2580-56-5	Not Used	
91	Lead(II) bis(methanesulfonate)	17570-76-2	Not Used	
92	Arsenic acid	7778-39-4	Not Used	
93	Lead dipicrate	6477-64-1	Not Used	
94	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	Not Used	
95	N,N-dimethylacetamide	127-19-5	Not Used	
96	Lead diazide, Lead azide	13424-46-9	Not Used	
97	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	Not Used	
98	Potassium hydroxyoctaoxodizincatedichromate	11103-86-9	Not Used	
99	Zirconia Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (Âµm). c) alkaline oxide and alkali earth oxide (Na2O+K2O+CaO+MgO+BaO) content less or equal to 18% by weight		Not Used	
100	Lead styphnate	15245-44-0	Not Used	
101	Phenolphthalein	28376	Not Used	
102	Calcium arsenate	7778-44-1	Not Used	
103	Trilead diarsenate	3687-31-8	Not Used	
104	Dichromium tris(chromate)	24613-89-6	Not Used	

105	Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (Âµm) c) alkaline oxide and alkali earth oxide (Na2O+K2O+CaO+MgO+BaO) content less or equal to 18% by weight		Not Used	
106	1,2-Dichloroethane	107-06-2	Not Used	
107	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	Not Used	
108	Bis(2-methoxyethyl) phthalate	117-82-8	Not Used	
109	Pentazinc chromate octahydroxide	49663-84-5	Not Used	
110	Bis(2-methoxyethyl) ether	111-96-6	Not Used	
111	2-Methoxyaniline,o-Anisidine	90-04-0	Not Used	
112	Cobalt dichloride	7646-79-9	Not Used	
113	Hydrazine	302-01-2"7803-57-8	Not Used	
114	1,2,3-trichloropropane	96-18-4	Not Used	
115	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	Not Used	
116	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	Not Used	
117	Strontium chromate	2151068	Not Used	
118	1-Methyl-2-pyrrolidone (NMP)	872-50-4	Not Used	
119	2-Ethoxyethyl acetate	111-15-9	Not Used	
120	Cobalt(II) dinitrate	10141-05-6	Not Used	
121	2-Ethoxyethanol	110-80-5	Not Used	
122	Cobalt(II) diacetate	71-48-7	Not Used	
123	2-Methoxyethanol	109-86-4	Not Used	
124	Cobalt(II) carbonate	513-79-1	Not Used	
125	Chromium trioxide	1333-82-0	Not Used	
126	Cobalt(II) sulphate	10124-43-3	Not Used	

127	Acids generated from chromium trioxide and their oligomers. Names of the acids and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid.	7738-94-5"13530-68-2	Not Used	
128	Tetraboron disodium heptaoxide, hydrate	12267-73-1	Not Used	
129	Disodium tetraborate, anhydrous	1303-96-4"1330-43-4"12179-04-3	Not Used	
130	Boric acid	10043-35-3"11113-50-1	Not Used	
131	Sodium chromate	2146108	Not Used	
132	Ammonium dichromate	2151163	Not Used	
133	Potassium chromate	7789-00-6	Not Used	
134	Potassium dichromate	7778-50-9	Not Used	
135	Trichloroethylene	28861	Not Used	
136	Acrylamide	29007	Not Used	
137	Diisobutyl phthalate	84-69-5	Not Used	
138	2,4-Dinitrotoluene	121-14-2	Not Used	
139	Anthracene oil	90640-80-5	Not Used	
140	Lead chromate	7758-97-6	Not Used	
141	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	Not Used	
142	Tris(2-chloroethyl)phosphate	115-96-8	Not Used	
143	Anthracene oil, anthracene paste, distn. lights	91995-17-4	Not Used	
144	Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	Not Used	
145	Pitch, coal tar, high temp.	65996-93-2	Not Used	
146	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	Not Used	
147	Anthracene oil, anthracene paste	90640-81-6	Not Used	
148	Anthracene oil, anthracene-low	90640-82-7	Not Used	
149	Triethyl arsenate	15606-95-8	Not Used	
150	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	Not Used	
151	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified: Alpha-hexabromocyclododecane Beta-hexabromocyclododecane Gamma-hexabromocyclododecane	25637-99-4"3194-55-6"134237-50-6"134237-51-7"134237-52-8	Not Used	
152	Benzyl butyl phthalate (BBP)	85-68-7	Not Used	
153	Sodium dichromate	7789-12-0"10588-01-9	Not Used	
154	Diarsenic pentaoxide	1303-28-2	Not Used	
155	Dibutyl phthalate (DBP)	84-74-2	Not Used	
156	Bis(tributyltin) oxide (TBTO)	56-35-9	Not Used	

157	Diarsenic trioxide	1327-53-3	Not Used	
158	5-tert-butyl-2,4,6-trinitro-m-xylene (Musk xylene)	81-15-2	Not Used	
159	4,4'- Diaminodiphenylmethane (MDA)	101-77-9	Not Used	
160	Lead hydrogen arsenate	7784-40-9	Not Used	
161	Anthracene	120-12-7	Not Used	
162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5)	68515-51-5 68648-93-1	Not Used	
163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof]		Not Used	

164	1,3-propanesultone	1120-71-4	Not Used	
165	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	Not Used	
166	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1"21049-39-8"4149-60-4	Not Used	
167	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	Not Used	
168	Nitrobenzene	98-95-3	Not Used	

Temp REACH data for updates in REACH list

Notes:

"Not Used" in the table above indicates that the substance is not present in the product in concentrations greater than 0.1% by weight per article.

Azoteq does not perform management of PFOS and Phthalates. However, since Annex XVII of REACH came into force in 2009, the Directive 2006/122/EC (PFOS) and Directive 2005/84/EC (Phthalates) were replaced by the REACH regulation in the EU and are therefore covered by this declaration.

This declaration is made based on the material composition information of the product as indicated above and information from materials suppliers. No third party test reports are available.

Signed: **Anton Walles**

Position: **Senior Logistics Engineer**

Date: 2016-05-13

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