

Date: 24. May 2011  
 Revision: 1.6  
 Product Total Mass [mg]: 184 mg

Requestor: VLSI Solution Oy  
 Hermiankatu 8G, 33270 Tampere, Finland  
 Email: quality@vlsi.fi  
 www.vlsi.fi



Product Name: VS1103B/LSR-ROHS (LQFP48 RoHS)

#### References of "Threshold level" columns:

**1) Report the biggest content rate (ppm) of the substance at the homogeneous material level. Optionally also the total weight of the substance in the product.**  
 Weight = total weight of the substance in the product.

Content rate [ppm] = Content rate of the substance in the homogeneous material that has the biggest ppm content of the substance.  
 Example: Lead (Pb) content in lead frame plating [ppm] = weight of lead (Pb) in leadframe [10<sup>-9</sup> g] / weight of the leadframe [mg]

**2) Report the total weight of the substance in the product. Optionally also content rate (ppm) of the substance at the product.**  
 Weight = total weight of the substance in the product.

Content rate [ppm] = Content rate of the substance in the product.

Example: Bismuth weight = Sum of Bismuth weights in each homogeneous material.

**3) Any content = Not contain obviously OR under quantitation limit of accurate analytical method.**

**NA) Not Applicable. cust.A = Customer from Japan cust.B = Customer from USA**

#### JIG-101, Material and Substance Declaration: Detailed Chemical list with CAS-numbers and other details of JIG-101: <http://www.jedec.org/download/>

Substance	R (Regulated) JIG Criteria 1	Threshold Level – cust.A	Threshold Level – cust.B	Above threshold level ?			If yes (Y), detailed information of contained substances		
				Level JIG (Y/N)	Level cust.A (Y/N)	Level cust.B (Y/N)	Weight [mg]	Content rate [ppm]	Additional information on material composition of products
Asbestos	Intentionally added (1)	Any content (1 and 3)	Any content (3)	N	N	N			See JIG-101 for detailed CAS#. Also CAS# 132207-32-0, 132207-33-1.
Certain azocolourants and azodyes (which form certain aromatic amines)	30 ppm by weight of the finished textile/leather product	Intentionally Added or 30 ppm (1)		N	N	N			Must be reported only if it is used for leather/fabric products and those parts where they are likely to result in prolong skin contact. 30 ppm in finished textile or leather articles
Cadmium/Cadmium compounds	100 ppm (1)	20 ppm (resin paint, ink pigment and dyeing) (1)	5 ppm (1)	N	N	N			
		20 ppm lead free soldering (1)		N	N	N			
		75 ppm metals except for lead free soldering (1)		N	N	N			
	5 ppm by weight of battery	Other materials: Any content (1 and 3)		N	N	N			
Hexavalent Chromium / Hexavalent Chromium Compounds	1000 ppm (1)	100 ppm Chromate plating (1)		N	N	N			Hexavalent Chromium = Chromium IV
		Other materials: Any content (1 and 3)	N	N	N				
Arsenic/Arsenic Compounds	see SVHC list	1000 ppm (1)	Any content (3)	N	N	N			JIG: see Diarsenic Pentaoxide and Diarsenic Trioxide in SVHC list.
Fluorinated greenhouse gases	Intentionally added (1)	NA	Any content (3)	N	N	N			HFC and PFC. For JIG also SF6. See JIG-101 for detailed CAS-numbers.
Formaldehyde CAS#50-0-0 (wooden materials and furniture)	Intentionally Added (1) Composite wood products or Components	Aerial concentration: 0.1 ml/m3 (1)	Select 1 of following: concentration in the air OR perforator method OR Desiccators method.	N	N	N			cust.A = DE ChemVerbotsV, AT BGBl. Nr. 194/1990, SE KIFS 1998:8 (9, 20-27 §§) cust.B: Select 1 of following: concentration in the air: 0.1 ppm (EN 717-1:2004), or perforator method: 6.5 mg/100g particleboard, 7.0 mg/100g fiberboard (both average value during 6 months), 8.0 mg particle/fiberboard one time measurement based EN 120:1992. or Desiccators method: average content 0.5 mg/l, Maximum content 0.7 mg/l (use N = 2, JIS A 5905 (Fiberboards, JIS A 5908 Particleboards)
Formaldehyde CAS#50-0-0	75 ppm (2) Textiles			N	N	N			
HBCDD	see SVHC list	see "Brominated Flame Retardants (other than PBBs or PBDEs)"							

Substance	R (Regulated) JIG Criteria 1	Threshold Level – cust.A	Threshold Level – cust.B	Above threshold level ?			If yes (Y), detailed information of contained substances		
				Level JIG (Y/N)	Level cust.A (Y/N)	Level cust.B (Y/N)	Weight [mg]	Content rate [ppm]	Additional information on material composition of products
Lead/Lead Compounds	90 ppm (1) paint or other coating of product for childrens	100 ppm (1) resin paint, ink pigment and dyeing	500 ppm solder (1)	N	N	N			
	300 ppm (2) children's product for children 12 years or younger	1000 ppm for soldering parts of purchasing pwd and components (1)	100 ppm other materials (1)	N	N	N			
	40 ppm by weight of battery	500 ppm lead free soldering except for above (1)		N	N				
		500 ppm other metal materials (1)		N	N				
		800 ppm electroless nickel plating (1)		N	N				
1000 ppm (1) Other	Other materials: Any content (1 and 3)		N	N					
Mercury / Mercury compounds	1000 ppm or Intentionally Added (1)			N	N	N			
	1 ppm by weight of battery			N	N	N			
Nickel / Nickel Compounds	Intentionally added (1), if prolonged skin contact is expected.	1000 ppm (1)	DIN EN1811: During the testing, flaked nickel should not exceed 0.5 ug/cm2/week	N	N	N			Use of nickel or nickel in components and parts designed to be located inside the outer enclosure of a product need not be reported. Cust.B = cust.C.
Ozone Depleting Substances – Class I (CFCs, HBFCs, etc.)	Intentionally added (1)	Any content (1 and 3)	Any content (3)	N	N	N			
Ozone Depleting Substances – Class II (HCFCs)	Intentionally added (1)	1000 ppm (1)	Any content (3)	N	N	N			
Perchlorates	0.006 ppm (2)	NA	NA	N	N	N			US/CA DTSC Rulemaking
Perfluorooctanesulfonic acid (PFOS, see references in the end of this table)	Intentionally added (1)	1 micrograms/m2 in textiles or coated materials. 0.1 weight% (1000ppm) in semi-finished products or articles. 0.005% (50ppm) as substance or constituent of preparations (1)	0.1 wt%, textile or other coated materials 1 micrograms/m*2 of coated materials. (1)	N	N	N			cust. A = EU 76/769/EEC, 30. amendment, Annex I, No. 52 Exemptions of use (only for cust. A and cust. B): a) photoresists or anti reflective coatings for photolithography processes b) photographic coatings applied to films, papers, or printing plates, c) mist suppressants for non-decorative hard chromium (VI) plating and wetting agents for use in controlled electroplating systems.
Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1, 1-dimethylethyl)	Intentionally added (1)	NA	NA	N	N	N			CAS# 3846-71-7
Phthalates	1000 ppm (2)	1000 ppm (1)	Any content (3)	N	N	N			CAS# 117-81-7, CAS# 84-74-2, CAS# 85-68-7
Phthalates	1000 ppm of plasticized material (childrens toy that can be placed in a child's mouth or child care article)	1000 ppm (1)	Any content (3)	N	N	N			CAS# 28553-12-0, CAS# 68515-48-0, CAS# 26761-40-0, CAS# 68515-49-1, CAS# 117-84-0 for cust A. and cust. B also DNHP CAS# 84-75-3
Polybrominated Biphenyls (PBBs)	1000 ppm (1)	Any content (1 and 3)	Any content (3)	N	N	N			Also monobromodiphenyl (C12 H9 Br) included.
Polybrominated Diphenylethers (PBDEs)	1000 ppm (1)	Any content (1 and 3)	Any content (3)	N	N	N			JIG includes also DecaBDE CAS# 1163-19-5, see detailed list in JIG-101.
Deca-Bromodiphenylether (Deca-BDE) (PBDE)	Intentionally added (1) TV and computer housings	NA	NA	N	N	N			JIG: TV and computer housings have lower Deca-BDE threshold level.
Polychlorinated Biphenyls (PCBs) and specific substitutes	Intentionally added (1)	Any content (1 and 3)	Any content (3)	N	N	N			
Polychlorinated Terphenyls (PCTs)	Intentionally added (1)	NA	Any content (3)	N	N	N			
Polychlorinated Naphthalenes (> 3 chlorine atoms)	Intentionally added (1)	Any content (1 and 3)	Any content (3)	N	N	N			
Radioactive Substances	Intentionally added (1)	1000 ppm (1)	Any content (3)	N	N	N			
Shortchain Chlorinated Paraffins (C10 – C13)	1000 ppm (2)	Any content (1 and 3)	Any content (3)	N	N	N			SCCP, CAS# 85535-84-8
Certain Tributyl Tin (TBT) and Triphenyl Tin (TPT) compounds	Intentionally added (1)	Any content (1 and 3)	Any content (3)	N	N	N			Also Tributyl tin bromide (CAS# 1461-23-0), Triphenyl tin (CAS# 668-34-8), Triphenyl tin bromide (C6 H5)3 Sn Br and Mixture of tributyl tin cyclopentanecarboxylate and its analogs (Tributyl tin naphthenate, CAS# 85409-17-12).
Tributyl Tin Oxide (TBTO)	1000 ppm or Intentionally Added (2)	Any content (1 and 3)	NA	N	N	N			

**JIG-101, Material and Substance Declaration: Detailed Chemical list with CAS-numbers and other details of JIG-101: <http://www.jedec.org/download/>**

Substance	Threshold Level – JIG	Threshold Level – cust.A	Threshold Level – cust.B	Above threshold level ?			If yes (Y), detailed information of contained substances		
				Level JIG (Y/N)	Level cust.A (Y/N)	Level cust.B (Y/N)	Weight [mg]	Content rate [ppm]	Additional information on material composition of products
Antimony/Antimony Compounds	NA	1000 ppm (1)	NA	N	N	N			
Beryllium/Beryllium Compounds (JIG: only Beryllium Oxide)	1000 ppm (2) criteria 3 – I (for information only)	1000 ppm (1)	Any content (3)	N	N	N			For JIG: reportable applications: ceramics
Bismuth/Bismuth Compounds	NA	1000 ppm (1)	NA	N	N	N			
Brominated Flame Retardants (other than PBBs or PBDEs)	1000 ppm (2) criteria 3 – I (for information only)	1000 ppm (1)	1000 ppm (1)	N	N	N			cust.B: TBBP-A-bis (CAS# 21850-44-2), JIG: (other than PBBs or PBDEs or Hexabromocyclododecane(HBCDD)) see detailed list in JIG-101.
Selenium/Selenium Compounds	NA	1000 ppm (1)	NA	N	N	N			
Polyvinyl Chloride (PVC)	1000 ppm (2) criteria 3 – I (for information only)	1000 ppm (1)	Any content (3)	N	N	N			
Tris (2-chloroethyl) phosphate (TCEP)	1000 ppm (2) criteria 2 – A (for Assesment only)	NA	NA	N	N	N			CAS# 115-96-8, requirement from ECHA Registry of Intentions

**PFOS substances:**

List of PFOS substances, list may not include all variations:

US EPA Significant New Use Rule 1:

<http://www.epa.gov/EPA-TOX/2002/December/Day-09/t31011.htm>

US EPA Significant New Use Rule 2 (which also include some PFAS molecules):

<http://www.epa.gov/EPA-TOX/2007/October/Day-09/t19828.htm>

JIG-101: Detailed Chemical list with CAS-numbers and other details see JIG-101 at <http://www.jedec.org/download/>

**Additional Material and Substance Declarations:**

Substance	Threshold Level	Threshold Level – cust.B	Above threshold level ?		If yes (Y), detailed information of contained substances		
			Level (Y/N)	Level cust.B (Y/N)	Weight [mg]	Content rate [ppm]	Additional information on material composition of products
Cobalt Chloride	0.01 weight% (100 ppm) (1)	NA	N	N			As for the service parts, the professional products, and the transportation parts, when the content exceeds 100ppm to less than 10000ppm display the text "Restricted to professional user" to the cobalt chloride inclusion quality wrapping. Directives of EU: 2003/34/EC, 98/98/EC and 2004/73/EC.
Phthalate esters	1000 ppm (1)	Any content (3)	N	N			See also "Phthalates" in previous table of this document.
Mirex (Perchlordecone)	Intentionally added (1)	Any content (3)	N	N			CAS# 2385-85-5. Prohibition of Certain Toxic Substances Regulations, 2005 (SOR/SOR/2005-41. Published in Canada Gazette Part II, 2006-11-29 Vol. 140, No. 24
Hydrofluorocarbon (HFC), Perfluorocarbon (PFC)	Any content (3)	Any content (3)	N	N			
Halogen-Bromine (Br)		>900 ppm (1)	N	N			IEC 61249-2-21:2003
Halogen-Chlorine (Cl)		>900 ppm (1)	N	N			IEC 61249-2-21:2003
Total Halogen Br + Cl		>1500 ppm (1)	N	N			IEC 61249-2-21:2003
Halogenated aromatic substances		500 ppm for mono- or 50 ppm for poly-halogenated aromatic substances.	N	N			
Halogenated diphenyl methanes	Any content (3)	Any content (3)	N	N			JIG-101 (PCB+PCT) includes CAS# 76253-60-6, CAS# 99688-47-8 and Ugilec121, Ugilec 21.
Brominated dioxins/furans and Chlorinated dioxins/furans	10 ppb (1)	Any content (3)	N	N			ChemVerbotsV, information source "2008 GADSL Version 2.0"
Specific benzotriazole	Any content (3)	Any content (3)	N	N			Japan, Law Concerning the Examination and Regulation of Manufacture of Chemical Substances, Class I.
Organic tin compounds (excluding TBT, TPT, TBTO)	1000 ppm (1)	NA	N	N			Including Dibutyltin compounds. See also TBT, TPT and TBTO in one of the previous tables of this document.
Certain Glycol Ethers see list in the end of this doc	use in manufacture of semiconductors, 1000 ppm (1)	5 ppm (1)	N	N			EU-D 67/548/EEC, information source "2008 GADSL Version 2.0"
Dimethyl Fumarate (DMF)	Intentionally added (2)	NA	N	N			CAS# 624-49-7. If no intentional use is verified by tracing back through the supply chain, analysis for checking non-use of applicable substances is not required.
Red phosphorous	Intentionally added (1)	1000 ppm (1)	N	N			Red phosphorous CAS 7723-14-0 should not be used to substitute Brominated Flame Retardants due to historical industry experience with reliability concerns.

**Semiconductor industry voluntary banned the use of certain ethylene glycol ethers in manufacture of semiconductors.**

Certain Glycol Ethers	CAS Numbers
2-Ethoxyethanol (or Ethylene glycol monoethyl ether)	110-80-5
2-Ethoxyethyl acetate	111-15-9
2-Methoxyethanol (or Ethylene glycol monomethyl ether)	109-86-4
2-Methoxyethyl acetate	110-49-6
Diethylene glycol dimethyl ether	111-96-6

## List of Substances of Very High Concern (SVHC) – page 1 of 2

http://echa.europa.eu/chem\_data/candidate\_list\_table\_en.asp

Substance	If yes (Y), detailed information of contained substances				
	Category Name	Threshold Level	Above threshold level ? Y / N	Weight [mg] Content rate [ppm]	Additional information on material composition of products
Triethyl arsenate	0.1 % Weight (2)	N			EC Number: 427-700-2, CAS Number: 15606-95-8. Article 57(a) of Regulation (EC) 1907/2006 (REACH).
Anthracene	0.1 % Weight (2)	N			EC Number: 204-371-1 CAS Number: 120-12-7. PBT substance according to Article 57 (d) of Regulation (EC) No 1907/2006 (REACH).
4,4'-Diaminodiphenylmethane (MDA)	0.1 % Weight (2)	N			EC Number: 202-974-4 CAS number: 101-77-9. Article 57(a) of Regulation (EC) 1907/2006 (REACH).
Dibutyl phthalate (DBP)	0.1 % Weight (2)	N			EC Number: 201-557-4 CAS number: 84-74-2. Article 57 (c) of Regulation (EC) 1907/2006 (REACH).
Cobalt dichloride	0.1 % Weight (2)	N			EC number: 231-589-4 CAS number: 7646-79-9. Article 57 (a) of Regulation (EC) No 1907/2006 (REACH).
Diarsenic Pentaoxide	0.1 % Weight (2) (also JIG criteria 1 R)	N			EC Number: 215-116-9 CAS number: 1303-28-2. Article 57 (a) of Regulation (EC) No 1907/2006 (REACH).
Diarsenic Trioxide	0.1 % Weight (2) (also JIG criteria 1 R)	N			EC Number: 215-481-4 CAS number: 1327-53-3. Article 57 (a) of Regulation (EC) No 1907/2006 (REACH).
Sodium dichromate	0.1 % Weight (2)	N			EC number: 234-190-3 CAS number: 10588-01-9 (anhydrous) 7789-12-0 (dihydrate). Article 57(a), (b) and (c) of Regulation (EC) 1907/2006 (REACH).
5-tert-butyl – 2,4,6 – trinitro-m-xylene (musk xylene)	0.1 % Weight (2)	N			EC Number: 201-329-4 CAS number: 81-15-2. Article 57(e) of Regulation (EC) No 1907/2006 (REACH).
Bis(2-ethylhexyl)phthalate (DEHP)	0.1 % Weight (2)	N			EC Number: 204-211-0 CAS number: 117-81-7. Article 57 (c) of Regulation (EC) 1907/2006 (REACH).
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified	0.1 % Weight (2) (also JIG criteria 1 R)	N			EC Number: 221-695-9, 247-148-4 CAS number: 3194-55-6, 25637-99-4 Names of the major diastereoisomers identified: alpha-hexabromocyclododecane CAS No 134237-50-6 beta-hexabromocyclododecane CAS No 134237-51-7 gamma-hexabromocyclododecane CAS No 134237-52-8. Article 57 (d) of Regulation (EC) No 1907/2006 (REACH).
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	0.1 % Weight (2)	N			EC Number: 287-476-5 CAS number: 85535-84-8. Article 57 (d and e) of Regulation (EC) No 1907/2006 (REACH).
Bis(tributyltin) oxide (TBTO)	0.1 % Weight (2)	N			EC Number: 200-268-0 CAS number: 56-35-9. Article 57 (d) of Regulation (EC) No 1907/2006 (REACH).
Lead hydrogen arsenate	0.1 % Weight (2)	N			EC Number: 232-064-2 CAS number: 7784-40-9. Article 57 (a and c) of Regulation (EC) No 1907/2006 (REACH).
Benzyl butyl phthalate (BBP)	0.1 % Weight (2)	N			EC Number: 201-622-7 CAS number: 85-68-7. Article 57 (c) of Regulation (EC) 1907/2006 (REACH).
2,4-Dinitrotoluene	0.1 % Weight (2)	N			EC number: 204-450-0 CAS# 121-14-2, Carcinogenic (article 57a)
Aluminosilicate Refractory Ceramic Fibres	0.1 % Weight (2)	N			Carcinogenic (article 57a). Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 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 two following conditions: a) Al <sub>2</sub> O <sub>3</sub> and SiO <sub>2</sub> are present within the following concentration ranges: a1) Al <sub>2</sub> O <sub>3</sub> : 43.5 – 47 % w/w, and SiO <sub>2</sub> : 49.5 – 53.5 % w/w, OR a2) Al <sub>2</sub> O <sub>3</sub> : 45.5 – 50.5 % w/w, and SiO <sub>2</sub> : 48.5 – 54 % w/w, b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm).
Anthracene oil	0.1 % Weight (2)	N			EC number: 292-602-7 CAS# 90640-80-5. Carcinogenic (see Detail 1) below the table), PBT and vPvB (articles 57a, 57d and 57e).
Anthracene oil, anthracene-low	0.1 % Weight (2)	N			EC number:292-604-8 CAS# 90640-82-7. Carcinogenic (see Detail 2), mutagenic (see Detail 3 below the table), PBT and vPvB (articles 57a, 57b, 57d and 57e)
Anthracene oil, anthracene paste	0.1 % Weight (2)	N			EC number:292-603-2 CAS# 90640-81-6. Carcinogenic (see Detail 2), mutagenic (see Detail 3 below the table), PBT and vPvB (articles 57a, 57b, 57d and 57e)
Anthracene oil, anthracene paste, anthracene fraction	0.1 % Weight (2)	N			EC number: 295-275-9 CAS# 91995-15-2. Carcinogenic (see Detail 2), mutagenic (see Detail 3 below the table), PBT and vPvB (articles 57a, 57b, 57d and 57e)
Anthracene oil, anthracene paste, distn. Lights	0.1 % Weight (2)	N			EC number: 295-278-5 CAS#91995-17-4. Carcinogenic (see Detail 2), mutagenic (see Detail 3 below the table), PBT and vPvB (articles 57a, 57b, 57d and 57e)
Diisobutyl phthalate	0.1 % Weight (2)	N			EC number: 201-553-2 CAS# 84-69-5. Toxic for reproduction (article 57c)
Lead chromate	0.1 % Weight (2)	N			EC number: 231-846-0 CAS# 7758-97-6. Carcinogenic and toxic for reproduction (articles 57a and c)

Detail 1) The substance does not meet the criteria for identification as a carcinogen in situations where it contains less than 0.005 % (w/w) benzo[a]pyrene (EINECS No 200-028-5)

Detail 2) The substance does not meet the criteria for identification as a carcinogen in situations where it contains less than 0.005 % (w/w) benzo[a]pyrene (EINECS No 200-028-5) and less than 0,1 % w/w benzene (EINECS No 200-753-7).

Detail 3) The substance does not meet the criteria for identification as a mutagen in situations where it contains less than 0,1 % w/w benzene (EINECS No 200-753-7).

To be continued on the next page !!

## List of Substances of Very High Concern (SVHC) – page 2 of 2

Substance		If yes (Y), detailed information of contained substances			
Category Name	Threshold Level	Above threshold level ? Y / N	Weight [mg]	Content rate [ppm]	Additional information on material composition of products
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	0.1 % Weight (2)	N			EC number: 235-759-9 CAS# 12656-85-8. Carcinogenic and toxic for reproduction (articles 57a and c)
Lead sulfochromate yellow (C.I. Pigment Yellow 34)	0.1 % Weight (2)	N			EC number: 215-693-7 CAS# 1344-37-2. Carcinogenic and toxic for reproduction (articles 57a and c)
Pitch, coal tar, high temp.	0.1 % Weight (2)	N			EC number: 266-028-2 CAS# 65996-93-2. Carcinogenic, PBT and vPvB (articles 57a, 57d and 57e)
Tris(2-chloroethyl)phosphate	0.1 % Weight (2)	N			EC number: 204-118-5 CAS# 115-96-8. Toxic for reproduction (article 57c)
Zirconia Aluminosilicate Refractory Ceramic Fibres	0.1 % Weight (2)	N			Carcinogenic (article 57a). Zirconia Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 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 two following conditions: a) Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub> and ZrO <sub>2</sub> are present within the following concentration ranges: a1) Al <sub>2</sub> O <sub>3</sub> : 35 – 36 % w/w, and a2) SiO <sub>2</sub> : 47.5 – 50 % w/w, and a3) ZrO <sub>2</sub> : 15 - 17 % w/w, b) fibres have a length weighted geometric mean diameter less than two standard geometric errors of 6 or less micrometres (µm).
Acrylamide	0.1 % Weight (2)	N			EC number: 201-173-7 CAS# 79-06-1. Carcinogenic and mutagenic (articles 57 a and 57 b)
Trichloroethylene	0.1 % Weight (2)	N			EC number: 201-167-4 CAS# 79-01-6. Carcinogenic (article 57 a)
Boric acid	0.1 % Weight (2)	N			EC number: 233-139-2 / 234-343-4 CAS# 10043-35-3 / 11113-50-1. Toxic for reproduction (article 57 c)
Disodium tetraborate, anhydrous	0.1 % Weight (2)	N			EC number: 215-540-4 CAS#1303-96-4/ 1330-43-4/ 12179-04-3. Toxic for reproduction (article 57 c)
Tetraboron disodium heptaoxide, hydrate	0.1 % Weight (2)	N			EC number: 235-541-3 CAS# 12267-73-1. Toxic for reproduction (article 57 c)
Potassium dichromate	0.1 % Weight (2)	N			EC number: 231-906-6 CAS# 7778-50-9. Carcinogenic, mutagenic and toxic for reproduction (articles 57 a, 57 b and 57 c)
Ammonium dichromate	0.1 % Weight (2)	N			EC number: 232-143-1 CAS# 7789-09-5. Carcinogenic, mutagenic and toxic for reproduction (articles 57 a, 57 b and 57 c)
Potassium chromate	0.1 % Weight (2)	N			EC number: 232-140-5 CAS# 7789-00-6. Carcinogenic and mutagenic (articles 57 a and 57 b).
Sodium chromate	0.1 % Weight (2)	N			EC number: 231-889-5 CAS# 7775-11-3. Carcinogenic, mutagenic and toxic for reproduction (articles 57 a, 57 b and 57 c)
Cobalt(II) sulphate	0.1 % Weight (2)	N			EC number: 233-334-2 CAS# 10124-43-3. Carcinogenic and toxic for reproduction (articles 57 a and 57 c)
Cobalt(II) dinitrate	0.1 % Weight (2)	N			EC number: 233-402-1 CAS# 10141-05-6 . Carcinogenic and toxic for reproduction (articles 57 a and 57 c)
Cobalt(II) carbonate	0.1 % Weight (2)	N			EC number: 208-169-4 CAS# 513-79-1. Carcinogenic and toxic for reproduction (articles 57 a and 57 c)
Cobalt(II) diacetate	0.1 % Weight (2)	N			EC number: 200-755-8 CAS# 71-48-7. Carcinogenic and toxic for reproduction (articles 57 a and 57 c)
2-Methoxyethanol	0.1 % Weight (2)	N			EC number: 203-713-7 CAS# 109-86-4. Toxic for reproduction (article 57c)
2-Ethoxyethanol	0.1 % Weight (2)	N			EC number: 203-804-1 CAS# 110-80-5. Toxic for reproduction (article 57c)
Chromium trioxide	0.1 % Weight (2)	N			EC number: 215-607-8 CAS# 1333-82-0. Carcinogenic and mutagenic (articles 57 a and 57 b)
a) Chromic acid, b) Oligomers of chromic acid and dichromic acid, c) Dichromic acid	0.1 % Weight (2)	N			EC number: a) 231-801-5 b) - c) 236-881-5 CAS# a) 7738-94-5 b) – c) 13530-68-2. Carcinogenic (article 57a)

Detail 1) The substance does not meet the criteria for identification as a carcinogen in situations where it contains less than 0.005 % (w/w) benzo[a]pyrene (EINECS No 200-028-5)

Detail 2) The substance does not meet the criteria for identification as a carcinogen in situations where it contains less than 0.005 % (w/w) benzo[a]pyrene (EINECS No 200-028-5) and less than 0,1 % w/w benzene (EINECS No 200-753-7).

Detail 3) The substance does not meet the criteria for identification as a mutagen in situations where it contains less than 0,1 % w/w benzene (EINECS No 200-753-7).

## REVISION HISTORY:

REV:	Date:	Description:
1.4	17.3.2010	<p>A) Changes due to JIG–101 Ed 2.0:</p> <ul style="list-style-type: none"> <li>- LEVEL A and B replaced by criteria 1 – R Regulated (R), criteria 2 – A (for assesment only) and criteria 3 – I (for information only)</li> <li>- Minor changes: JIG Asbestos, threshold level changed from "Any content (2 and 3)" to "Intentionally added". <ul style="list-style-type: none"> <li>JIG: Beryllium and Beryllium compounds, only Beryllium Oxide included. Cust.A and Cust.B requirements include all Beryllium and Beryllium compounds.</li> <li>JIG: Brominated flame retradants exclude Hexabromocyclododecane(HBCDD), because it is separated to SVHC list.</li> <li>JIG: requirement of Arsenic/Arsenic compaunds covers only Diarsenic Pentaoxide and Diarsenic Trioxide</li> <li>JIG: Cadmium threshold level changed from 75ppm to 100ppm, 5ppm threshold level added for battery.</li> <li>JIG: requirements for Formaldehyde added.</li> <li>JIG: new requirements for Lead/lead compounds.</li> <li>JIG: Mercury/mercury compounds, requirement added for battery.</li> <li>JIG: Nickel, threshold level changed form "0.5 micrograms/sq cm/week" to "Intentionally added"</li> <li>JIG: Ozone Depleting Substances, threshold level changed from "Any content (2 and 3)" to " Intentionally added"</li> <li>JIG: requirements for PFOS added.</li> <li>JIG: requirements for Certain Phthalates more detailed (see Phthalates)</li> <li>JIG: extra requirement for Deca-BDE (see PBDE)</li> <li>JIG: Shortchain Chlorinated Paraffins (C10 – C13), threshold level changed from "1000 ppm or Intentionally Added (1)" to "1000 ppm (2)"</li> <li>JIG: Tributyl Tin Oxide (TBTO), threshold level changed from "Intentionally Added (2)" to "1000 ppm or Intentionally Added (2)"</li> <li>JIG: Antimony, Bismuth and Selenium requirements removed from JIG.</li> </ul> </li> <li>- Added new substances: JIG: Fluorinated greenhouse gases <ul style="list-style-type: none"> <li>JIG: Perchlorates</li> <li>JIG: Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1, 1-dimethylethyl) CAS# 3846-71-7</li> <li>JIG: Tris (2-chloroethyl) phosphate (TCEP)</li> </ul> </li> </ul> <p>B) Changes due list of SVHC 13.1.2010: 14 substances added (last 14 on the table)</p> <p>C) No changes to cust.A and cust.B requirements.</p> <p>D) Lead/lead compounds RoHS exemption items removed.</p>
1.5	22.3.2011	<p>A) Changes due to JIG–101: no changes.</p> <p>B) Changes due list of SVHC 15.12.2010: 17 substances added (last 17 on the table)</p> <p>C) No changes to cust.A and cust.B requirements.</p>
1.6	24.5.2011	<p>A) Changes to "Additional Material and Substance Declarations" table:</p> <p>Comment added for Organic tin compounds: "Including Dibutyltin compounds."</p> <p>New regulated substance added "Dimethyl fumarate (DMF)"</p>