



HY11P Series Quality Approval Sheet

HY11P Series

Quality Approval Sheet

Table of Contents

1	Statement	3
2	ISO Certificate	4
3	Reliability Test Introduction	5
3.1	Package Reliability Test Flow	5
3.2	Package Reliability Test Plan	6
3.3	Product Reliability Test Flow	7
3.4	Product Reliability Test Plan	7
4	Product Information.....	8
4.1	Package Reliability Result.....	8
4.2	Product Reliability Result	8
4.3	Product Storage Condition	9
4.4	Reflow Profile Suggestion	10
4.5	Product Label System	11
5	Green Product.....	12
5.1	Hazardous Substances Control Item within test report	12
5.2	Hazardous Substances Control Item within letter.....	13
5.3	Restricted Use of Conflict Minerals	15

HY11P Series

Quality Approval Sheet

1 Statement

HYCON Technology Corporation positions ourselves as a leading manufacturer of high precision integrated circuits in analog and digital signal processing applications.

Our quality system is in full accordance with ISO9000 procedures. Our products are not only innovative and leading-edge from a design perspective, but they are also, based on our reliability data, exceptionally robust and conform to industrial standards resulted from their high stability. HYCON Technology Corporation strives to produce reliable and high-quality products that meet customers' requirements.

Due to the rising environmental and human rights concerns around the world, the need for environmental protection and hazardous (banned) substance elimination in electronic components and systems is receiving increased attention within the semiconductor and electronics industries. HYCON Technology Corporation asserts the concept of sustainable corporate development and social responsibility and respects international human rights therefore we not only have been devoted to the provision of Green products which are in compliance with Restriction of Hazardous Substances (RoHS) Directive (EU) 2016/293, (EU) 2015/863, 2011/65/EU, Halogen Free (IEC 61249-2-21) and REACH 1907/2006(EC) ANNEX XVII and SVHC (Substance of Very High Concern) under REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) current version of restricted substances and prescribed regulations but also all products supplied to customers are of conflict-free minerals.

If necessary, please contact HYCON Technology Corporation's sales/agents for more information, and we will keep on providing our best support and service to you.

Sam Sun 
Senior Manager, QC. Dept.,
Quality Assurance Division.
HYCON TECHNOLOGY CORPORATION

HY11P Series Quality Approval Sheet

2 ISO Certificate

Audited by creditworthy TÜV SÜD Asia Pacific Ltd. TÜV Süddeutschland Group, HYCON Technology Corporation procured the anticipating certificate of ISO 9001 : 2015.

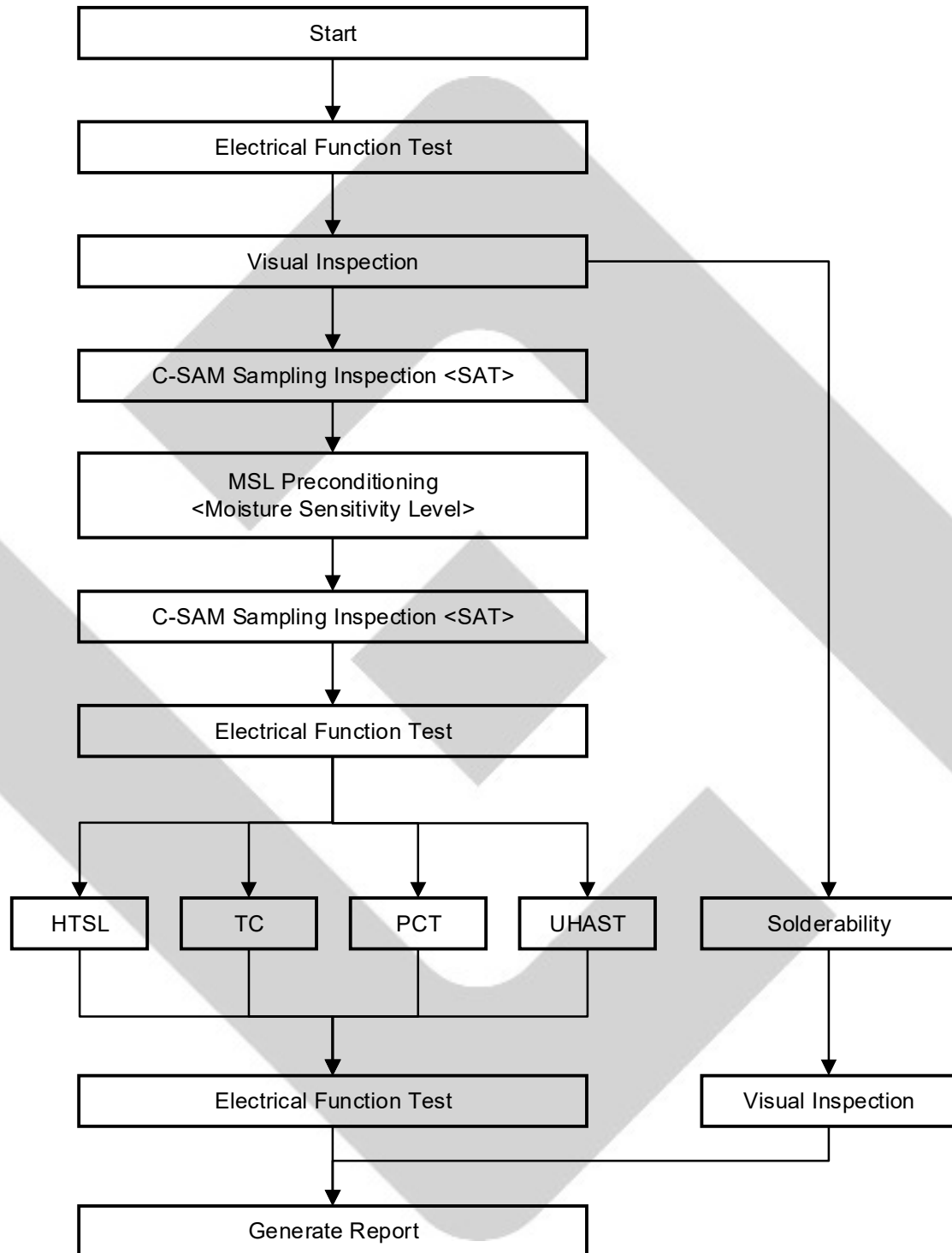
HYCON Technology Corporation is certified in the scope of “Design, Manufacturing, Marketing and Service of Integrated Circuits”.

By fulfilling ISO 9001 : 2015, it is the very first stage of quality management system of HYCON Technology Corporation. We're going to continuously practice quality objective, “Ceaseless Quality Improvement”, “Fearless in Confronting Challenges”, “Innovative Thinking” and “Sticking to Commitment” in every products realization and company evolving activities. HYCON Technology Corporation devotes to provide customers, representatives, suppliers with total satisfaction.



3 Reliability Test Introduction

3.1 Package Reliability Test Flow



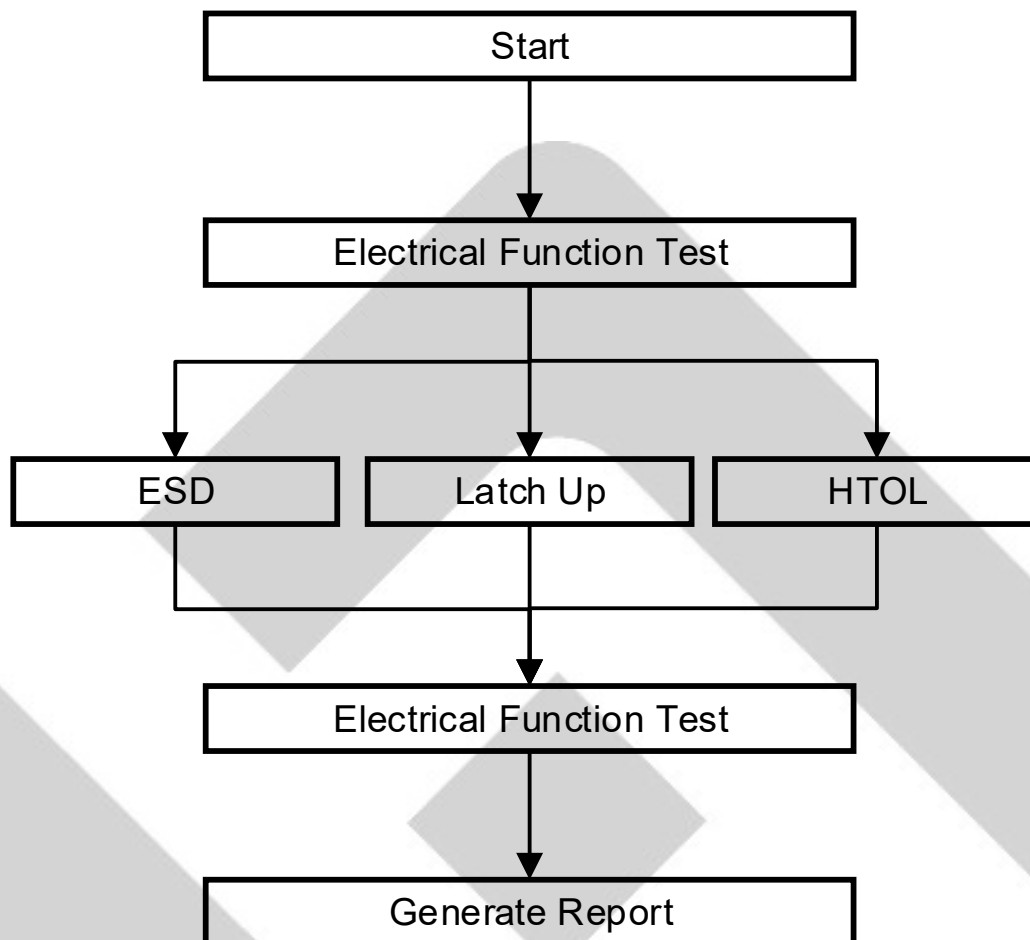
HY11P Series

Quality Approval Sheet

3.2 Package Reliability Test Plan

Test Item	Reference Document	Test Condition and Readout	Sampling Plan	
			SS/Acc.	LTPD
MSL Preconditioning (PC)	JESD22-A113 IPC/JEDEC J-STD-020	<u>Temperature Cycling</u> : -65°C~150°C, 5 cycles <u>Bake</u> : 125°C, 24 hrs. <u>Soaking</u> : (MSL1 or MSL3) MSL1 : 85°C, 85%RH, 168 hrs. MSL3 : 30°C, 60%RH, 192 hrs. <u>Reflow</u> : 3 times @ 260°C Peak	212/6	5%
High Temperature Storage Life (HTSL)	JESD22-A103	150°C, 1000 hrs.	25/0	10%
Temperature Cycling (TC)	MIL-STD-883 Method 1010 JESD22-A104	-65°C~150°C, 500 cycles	25/0	10%
Pressure Cooker Test (PCT)	JESD22-A102	121°C, 100%RH, 2atm, 168hrs.	25/0	10%
High Temperature Accelerated Stress Test (UHAST)	JESD22-A118	130°C, 85%RH, 96 hrs.	25/0	10%
Solderability (SD)	JESD22-B102	5 ± 0.5 sec.	15/0	15%

3.3 Product Reliability Test Flow



3.4 Product Reliability Test Plan

Test Item	Reference Document	Test Condition and Readout	SS/Acc.
ESD-HBM	MIL-STD-883 Method 3015	It is proceeded until condition we can carry out using test equipment.	3/0
ESD-MM	JESD22-A115		3/0
Latch-Up	JESD78		3/0
High Temperature Operating Life (HTOL)	MIL-STD-883 Method 1005 JESD22-A108 JESD85	125°C, 1000 hrs.	77/0 LTPD 3%

HY11P Series

Quality Approval Sheet

4 Product Information

4.1 Package Reliability Result

Model	Type	Pins	Material Composition	Package Reliability					
				MSL	HTSL	TC	PCT	UHAST	SD
HY11PXX-W000	Wafer	-	Green	-	-	-	-	-	-
HY11PXX-D000	Die	-	Green	-	-	-	-	-	-
HY11PXX-E016	SSOP	16	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-E028	SSOP	28	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-L032	LQFP	32	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-L044	LQFP	44	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-L048	LQFP	48	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-L064	LQFP	64	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-LS64	LQFP	64	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-L100	LQFP	100	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-M010	MSOP	10	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-N024	QFN	24	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-N032	QFN	32	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-N048	QFN	48	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-S008	SOP	8	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-SE08	SOP(EP)	8	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-S016	SOP	16	Green	3	PASS	PASS	PASS	PASS	PASS
HY11PXX-T028	TSSOP	28	Green	3	PASS	PASS	PASS	PASS	PASS

4.2 Product Reliability Result

Test Item	Result
ESD-HBM	Pass $\pm$ 4KV
ESD-MM	Pass $\pm$ 400V
Latch-Up	Pass $\pm$ 200mA
High Temperature Operating Life (HTOL)	At 90% Confidence Level λ = 227.15 FIT MTTF = 502 years

HY11P Series

Quality Approval Sheet

4.3 Product Storage Condition

4.3.1 Wafer Product

4.3.1.1 The product should be **vacuum sealed in dry pack** and kept in an environmentally controlled area within 15°C~35°C and ≤ 60%RH, and besides, should be used within 6 months.

4.3.1.2 The package assembly process must be finished within 7 days.

4.3.1.3 To reduce the risk of containment or oxidation, the residual wafer product must be kept in Nitrogen (N₂) purge cabinet within 20°C~30°C or well **vacuum sealed in dry pack** once again.

4.3.2 Dice Product

4.3.2.1 The product should be **vacuum sealed in dry pack** and kept in an environmentally controlled area within 15°C~35°C and ≤ 60%RH, and besides, should be used within 6 months.

4.3.2.2 The package assembly process should be finished within 24 hours.

4.3.2.3 To reduce the risk of containment or oxidation, the residual dices product should be well **vacuum sealed in dry pack**.

4.3.3 Package Product

4.3.3.1 Moisture Classification Level and Floor Life and Baking Condition.(J-STD-033)

Moisture Sensitive Level	Floor Life (out of bag) at Factory Ambient
Level 1	Unlimited at ≤ 30°C/85% RH
Level 2	1 year (≤ 30°C/60% RH)
Level 2a	4 weeks (≤ 30°C/60% RH)
Level 3	168 hours (≤ 30°C/60% RH)
Level 4	72 hours (≤ 30°C/60% RH)
Level 5	48 hours (≤ 30°C/60% RH)
Level 5a	24 hours (≤ 30°C/60% RH)
Level 6	Mandatory bake before use.

Table 4-1 Reference Conditions for Drying Mounted or Unmounted SMD Packages (User Bake: Floor life begins counting at time = 0 after bake)

Package Body	Level	Bake @ 125 °C +10/-0 °C		Bake @ 90 °C +8/-0 °C ≤5% RH		Bake @ 40 °C +5/-0 °C ≤5% RH	
		Exceeding Floor Life by >72 h	Exceeding Floor Life by ≤72 h	Exceeding Floor Life by >72 h	Exceeding Floor Life by ≤72 h	Exceeding Floor Life by >72 h	Exceeding Floor Life by ≤72 h
Thickness ≤1.4 mm	2	5 hours	3 hours	17 hours	11 hours	8 days	5 days
	2a	7 hours	5 hours	23 hours	13 hours	9 days	7 days
	3	9 hours	7 hours	33 hours	23 hours	13 days	9 days
	4	11 hours	7 hours	37 hours	23 hours	15 days	9 days
	5	12 hours	7 hours	41 hours	24 hours	17 days	10 days
	5a	16 hours	10 hours	54 hours	24 hours	22 days	10 days

HY11P Series

Quality Approval Sheet

4.3.3.2 The product should be **vacuum sealed** and kept in an environmentally controlled area at $\leq 30^{\circ}\text{C}/60\% \text{ RH}$, and besides, should be used within 12 months.

4.3.3.3 Floor Life,

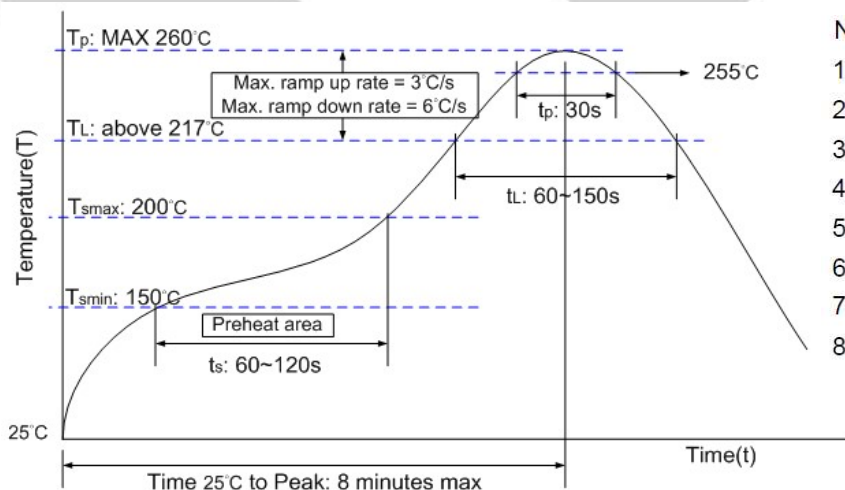
- MSL-1 : Unlimited at $\leq 30^{\circ}\text{C}/85\% \text{ RH}$.
- MSL-3 : The assembly process should be finished within **168 hours**. ($\leq 30^{\circ}\text{C}/60\% \text{ RH}$).

4.3.3.4 After the floor life has expired (e.g., MSL-3 : 168 hours) or other conditions (e.g., Bag Damaged) have occurred to indicate excess moisture exposure, the baking condition as below,

- MSL-1 : No need to bake.
- MSL-3 :
 - Tray packing : $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$, 9 hours.
 - Tape & Reel packing : 40°C @ $\leq 5\% \text{ RH}$ Chamber, 13 days.
 - Tube packing : 25°C @ $\leq 5\% \text{ RH}$ Chamber, 13 days.

4.4 Reflow Profile Suggestion

HYCON products are all green products (Halogen Free, Pb-Free), the reflow profile suggestion refers to J-STD-020 as below :



Note:

1. T_{smin} : Preheat/Soak Temperature Min
2. T_{smax} : Preheat/Soak Temperature Max
3. T_L : Liquidous Temperature
4. T_p : Peak Temperature
5. t_s : Preheat/Soak Time from T_{smin} to T_{smax}
6. t_L : Time maintained above T_L
7. t_p : Time within 5°C of T_p
8. Please refer to J-STD-020 for detail

HY11P Series

Quality Approval Sheet

4.5 Product Label System

In order to improve management and traceability, we upgrade label system and introduce 1D and 2D barcode. The barcode label was launched since 2015 Q4. The change of label shall not affect the product function and specification.

4.5.1 Label Example

Dice Product (Dice Tray)	Dice Product
<div> <div>Model: HY11P14-D000</div> <div>Lot : ABCDE.F</div> <div>Q'ty : 1000</div> <div>Date : 18-01-31</div> <div>Q.C. :</div> <div>Remark :</div> </div> 	<div> <div>HYCON TECHNOLOGY CORPORATION</div> <div> <div>Model : HY11P14-D000</div> <div>Lot : ABCDE.F</div> <div>Q'ty : 180000</div> <div>Date : 18-01-31</div> <div>Remark :</div> </div> <div>  <div>  Pb-Free Green </div> </div> </div>
Wafer Product	Package Product
<div> <div>HYCON TECHNOLOGY CORPORATION</div> <div> <div>Model : HY11P14-W000</div> <div>Lot : ABCDE.F</div> <div>Q'ty : 3</div> <div>Date : 18-01-31</div> <div>ID : #1-3</div> <div>Remark :</div> </div> <div>  <div>  Pb-Free Green </div> </div> </div>	<div> <div>HYCON TECHNOLOGY CORPORATION</div> <div> <div>Model : HY11P14-L064</div> <div>Lot : ABCDE.F</div> <div>Q'ty : 180000</div> <div>Date : 18-01-31</div> <div>Remark :</div> </div> <div> <div>T/C : A123</div> <div>MSL : 3</div> <div>e3/260C</div> <div>  Pb-Free Green </div> </div> </div>

4.5.2 Symbols of Label

- 4.5.2.1 The "Pb-free, Green" mark means it is Green Product that meets RoHS Directive, SVHC under REACH and Halogen free.
- 4.5.2.2 MSL : Moisture Sensitivity Level.
- 4.5.2.3 Plating Spec :
 - e3 : Pure Sn
 - e4 : Precious Metal.
- 4.5.2.4 260C : Peak temperature of IR Reflow.
- 4.5.2.5 "MSL", "Plating SPEC" and "260C" are showed on package product label ONLY.
- 4.5.2.6 Above data refers to IPC/JEDEC Joint Standard J-STD-609.

HY11P Series

Quality Approval Sheet

5 Green Product

5.1 Hazardous Substances Control Item within test report

No.	Material & Substance	Legal Reference	Threshold	M.D.L
1	RoHS2.0 Lead (Pb) and its compounds	EU Directive 2011/65/EU California Proposition 65 EU REACH Regulation 86/677/EEC Norway's PoHS	1000ppm (0.1wt%)	≤2ppm
2	RoHS2.0 Mercury (Hg) and its compounds	EU Directive 2011/65/EU EU REACH Regulation TCO 5.2	1000ppm (0.1wt%)	≤2ppm
3	RoHS2.0 Cadmium (Cd) and its compounds	EU Directive 2011/65/EU EU REACH Regulation Norway's PoHS EU Directive 98/101/EC	100ppm (0.01wt%)	≤2ppm
4	RoHS2.0 Hexavalent chromium (Cr ⁶⁺) compounds	EU Directive 2011/65/EU EU REACH Regulation	1000ppm (0.1wt%)	≤2ppm
5	RoHS2.0 Polybrominated Biphenyls (PBBs)	EU Directive 2011/65/EU EU REACH Regulation	1000ppm (0.1wt%)	≤5ppm
6	RoHS2.0 Polybrominated Diphenyl Ethers (PBDEs) (PBDEs, PBBE, PBDOs, PBBOs, DecaBDE)	EU Directive 2011/65/EU EU REACH Regulation	1000ppm (0.1wt%)	≤5ppm
7	RoHS2.0 Phthalates, e.g. : ● Di (2-ethylhexyl) Phthalate (DEHP) ● Di-n-butyl Phthalate (DBP) ● Butyl Benzyl Phthalate (BBP) ● Diisobutyl Phthalate (DIBP) ● Di-iso-nonyl Phthalate (DINP) ● Diisodecyl phthalate (DIDP) ● Di-n-hexyl Phthalate (DNHP)	(EU) 2015/863/EU, 2011/65/EU JIG-101 Ed 4.1 Canadian Environmental Protection Act OSPAR	1000ppm (0.1wt%)	≤50ppm
8	Halogen Free Bromine (Br)	IEC 61249-2-21 JPCA-ES01 2003	900ppm (0.09 wt%)	≤50ppm
9	Halogen Free Chlorine (Cl)	IEC 61249-2-21 JPCA-ES01 2003	900ppm (0.09 wt%)	≤50ppm
10	Halogen Free Total Halogen Contained (Cl+Br)	IEC 61249-2-21 JPCA-ES01 2003	1500 ppm (0.15wt%)	≤50ppm
11	Perfluorooctyl acid (PFOA) and individual salts and esters of PFOA Perfluorooctane Sulphonate (PFOS) related substances,	2006/122/EC (EU) 757/2010 Norway PoHS Stockholm Convention SONY GP (SS-00259)	10 ppm (0.001wt%)	≤10ppm
12	Halogenated Flame Retardants, e.g.: ● Hexabromocyclododecane (HBCDD) ● TBBP-A	(EU) 2016/293 Stockholm Convention Norway PoHS JIG-101 Ed 4.1 SONY GP (SS-00259)	Forbidden(N.D)	≤5ppm
13	Ozone Depleting Substances : ● Chlorofluorocarbons (CFCs) ● Hydrochlorofluorocarbons (HCFCs) ● Halons ● Bromodifluoromethane and Isomers (HBFCs) ● Hydrofluorocarbon (HFC) and Perfluorocarbons (PFC) ● Other ozone depleting substances	Montreal Protocol Annex A, B, C JIG-101 Ed 4.1	Forbidden(N.D)	≤1ppm

✖ Third-Party Hazardous Substance Test Reports provided by our suppliers and updated **within 14-day prior or post to the expiration date** are available upon customer request.
✖ HYCON Environmental Policy : <http://www.hycontek.com/en/company-en/1781#tab2>

HY11P Series

Quality Approval Sheet

5.2 Hazardous Substances Control Item within letter

No.	Material & Substance	Legal Reference	Threshold	M.D.L																																									
1	Short-chain chlorinated paraffins (SCCP)	ED/67/2008 EU REACH Regulation Norway PoHS	Forbidden(N.D)	≤5ppm																																									
2	Medium-chain chlorinated paraffins (MCCP)		Forbidden(N.D)	≤5ppm																																									
3	Long-chain chlorinated paraffins LCCP		Forbidden(N.D)	≤5ppm																																									
4	Chlorinated Paraffins (CP)		Forbidden(N.D)	≤5ppm																																									
5	Polychlorinated Biphenyls and Derivatives (PCBS)	EU REACH Regulation Stockholm Convention Norway PoHS JIG-101 Ed 4.1	Forbidden(N.D)	≤5ppm																																									
6	Polychlorinated terphenyls and Derivatives (PCT)		Forbidden(N.D)	≤5ppm																																									
7	Polychlorinated Phenols and Derivatives (PCPs), e.g. : ● Pentachlorophenol (CAS No.87-86-5)		Forbidden(N.D)	≤5ppm																																									
8	Polychlorinated Naphthalenes and Derivatives (PCN)		Forbidden(N.D)	≤5ppm																																									
9	Persistent Organic Pollutants (POPs)	Stockholm Convention	Forbidden(N.D)	≤10ppm																																									
10	Polyvinyl Chloride (PVC), Vinyl Chloride and PVC blends	JIG-101 Ed 4.1 Blue Angel (German Eco-label) TCO 5.2 (Swedish Eco-label) SONY GP (SS-00259)	Forbidden(N.D)	≤1ppm																																									
11	Polyaromatic Hydrocarbons (PAHs), e.g. : <table><tr><th>Substance</th><th>CAS No.</th><th>Substance</th><th>CAS No.</th></tr><tr><td>Naphthalene</td><td>91-20-3</td><td>Chrysebe</td><td>218-01-9</td></tr><tr><td>Acenaphthylene</td><td>208-96-8</td><td>Benzo(b)fluoranthene</td><td>205-99-2</td></tr><tr><td>Acenaphthene</td><td>83-32-9</td><td>Benzo(k)fluoranthene</td><td>207-08-9</td></tr><tr><td>Fluorene</td><td>86-73-7</td><td>Benzo(a)pyrene</td><td>50-32-8</td></tr><tr><td>Phenanthrene</td><td>85-01-8</td><td>Indeno(1,2,3-cd)pyrene</td><td>193-39-5</td></tr><tr><td>Anthracene</td><td>120-12-7</td><td>Dibenzo(a,h)anthracene</td><td>53-70-3</td></tr><tr><td>Fluoranthene</td><td>206-44-0</td><td>Benzo(g,h,i)perylene</td><td>191-24-2</td></tr><tr><td>Pyrene</td><td>129-00-0</td><td>Benzo(e)pyren (BeP)</td><td>192-97-2</td></tr><tr><td>Bebzo(a)anthracene</td><td>56-55-3</td><td>Benzo(j)fluoranthere (BjFA)</td><td>205-82-3</td></tr></table>		Substance	CAS No.	Substance	CAS No.	Naphthalene	91-20-3	Chrysebe	218-01-9	Acenaphthylene	208-96-8	Benzo(b)fluoranthene	205-99-2	Acenaphthene	83-32-9	Benzo(k)fluoranthene	207-08-9	Fluorene	86-73-7	Benzo(a)pyrene	50-32-8	Phenanthrene	85-01-8	Indeno(1,2,3-cd)pyrene	193-39-5	Anthracene	120-12-7	Dibenzo(a,h)anthracene	53-70-3	Fluoranthene	206-44-0	Benzo(g,h,i)perylene	191-24-2	Pyrene	129-00-0	Benzo(e)pyren (BeP)	192-97-2	Bebzo(a)anthracene	56-55-3	Benzo(j)fluoranthere (BjFA)	205-82-3	(EU)1272/2013 OSPAR German: LMBG SONY GP (SS-00259)	Forbidden(N.D)	-
	Substance	CAS No.	Substance	CAS No.																																									
	Naphthalene	91-20-3	Chrysebe	218-01-9																																									
	Acenaphthylene	208-96-8	Benzo(b)fluoranthene	205-99-2																																									
	Acenaphthene	83-32-9	Benzo(k)fluoranthene	207-08-9																																									
	Fluorene	86-73-7	Benzo(a)pyrene	50-32-8																																									
	Phenanthrene	85-01-8	Indeno(1,2,3-cd)pyrene	193-39-5																																									
	Anthracene	120-12-7	Dibenzo(a,h)anthracene	53-70-3																																									
	Fluoranthene	206-44-0	Benzo(g,h,i)perylene	191-24-2																																									
	Pyrene	129-00-0	Benzo(e)pyren (BeP)	192-97-2																																									
Bebzo(a)anthracene	56-55-3	Benzo(j)fluoranthere (BjFA)	205-82-3																																										
12	Aliphatic Chlorinated hydrocarbon (CHCs)	94/60/EEC	Forbidden(N.D)	≤1ppm																																									
13	Dimethyl Fumarate (DMF)	2009/251/EC SONY GP (SS-00259)	Forbidden(N.D)	≤0.1ppm																																									
14	Asbestos	EU REACH Regulation JIG-101 Ed 4.1 SONY GP (SS-00259)	Forbidden(N.D)	≤1ppm																																									
15	Azo compounds	EU Directive 76/769/EEC, 2002/61/EEC 2003/03/EEC SONY GP (SS-00259)	Forbidden(N.D)	≤5ppm																																									
16	Red Phosphorus, Yellow Phosphorus	Japan Industrial Safety and Health Law (ISHL) SONY GP (SS-00259)	Forbidden(N.D)	-																																									
17	Arsenic (As) and Arsenic compounds	EU Directive 86/677/EEC Norway's PoHS EU REACH Regulation SONY GP (SS-00259)	300ppm (0.03wt%)	≤2ppm																																									
18	Antimony (Sb) and its compounds	JIG-101 Ed 4.1 Basel Convention	900ppm (0.09wt%)	≤2ppm																																									
19	Selenium (Se) and its compounds	86/677/EEC 76/769/EEC Basel Convention	1000 ppm (0.1wt%)	≤2ppm																																									
20	Nickel (Ni) and its compounds	EU Directive 94/27/EEC EU REACH Regulation	Forbidden(N.D)	≤2ppm																																									
21	Tellurium (Te) and its compounds	Basel Convention	1000 ppm (0.1wt%)	≤2ppm																																									
22	Beryllium (Be) and its compounds (except Beryllium oxide)	Basel Convention Japan Industrial Safety and Health Law (ISHL)	100ppm (0.01wt%)	≤2ppm																																									
23	Beryllium oxide	SONY GP (SS-00259)	Forbidden(N.D)	≤2ppm																																									
24	Formaldehyde and its compounds	JIG-101 Ed 4.1 Germany : ChemVerbots V Denmark : Danish Statutory Order No. 289 SONY GP (SS-00259)	Forbidden(N.D)	≤1ppm																																									
25	Bi- substituted Organic Tin Compounds Tri-substituted Organic Tin Compounds e.g.: Tributyltin (TBT) and Triphenyltin (TPT)	89/677/EEC, 99/51/EEC, 2009/425/EC Japan Chem-sub Law Norway's PoHS SONY GP (SS-00259)	Forbidden(N.D)	≤0.03ppm																																									
26	Bisphenol A, (CAS No. 80-05-7)	JIG-101 Ed 4.1 REACH Annex XVII Norway's PoHS	50ppm (0.005wt%)	-																																									
27	Hexachlorocyclohexaneisomers (HCH)	OSPAR	Forbidden(N.D)	≤1ppm																																									
28	Cyclohexane, (CAS No.110-82-7)	(EU)1907/2006	1000ppm																																										
29	Perchlorate	JIG-101 Ed 4.0 SONY GP (SS-00259)	Forbidden(N.D)	-																																									
30	Triclosan, (CaS No. 3380-34-5)	Norway's PoHS	Forbidden(N.D)	≤10ppm																																									
31	Nonylphenol /ethoxylates (NP/NPEs) and related substances	OSPAR 396/2009 2003/53/EC	Forbidden(N.D)	≤10ppm																																									

HY11P Series

Quality Approval Sheet

32	Hexachlorobutadiene	California Proposition 65 (EC)850/2004 Japan: Chem-sub U.S. EPA	Forbidden(N.D)	≤1ppm
33	Alkylphenols	OSPAR 2003/53/EC	Forbidden(N.D)	≤10ppm
34	Ethylene glycol monomethyl ether acetate ● 2-Methoxyethanol (CAS NO.109-86-4) ● Other ethylene glycol monomethyl ether and acetate	California Proposition 65	Forbidden(N.D)	≤5ppm
35	N-p-phenylenediamine	Japan: Chem-sub Law	Forbidden(N.D)	≤10ppm
36	Cobalt dichloride	EU REACH Regulation SONY GP (SS-00259)	Forbidden(N.D)	≤10ppm
37	Specific Benzotriazole (UV absorber)	SONY GP (SS-00259) Japan: Chem-sub	Forbidden(N.D)	≤10ppm
38	Radioactive Substances Uranium (U), strontium (Pu), strontium (Rn), strontium (Am), thorium (Th), strontium (Cs), strontium (Sr) or other radioactive materials	JIG-101 Ed 4.1 Japan: Nuclear material reactors*3, JGPSSI	Forbidden(N.D)	≤10ppm
39	Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene (BNST)	SONY GP (SS-00259)	1000 ppm (0.1 wt%)	
40	Reaction of di-n-octyl-bis(2-ethylhexyl decyl acetate) tin and mono-octyl-tris(2-ethylhexyl decyl acetate) tin ● 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)	EU REACH Regulation (EC)1907/2006 SONY GP (SS-00259)	1000 ppm (0.1 wt%)	
41	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	EU REACH Regulation SONY GP (SS-00259)	1000 ppm (0.1 wt%)	
42	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	REACH Regulation (EC) No.1907/2006 SONY GP (SS-00259)	1000 ppm (0.1 wt%)	
43	Bis(chloromethyl)ether	Japan: Industrial Safety and Health Law	Forbidden(N.D)	≤1ppm
44	SVHC (Substance of Very High Concern) under REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) latest version of restricted substances and prescribed regulations Refer to http://echa.europa.eu/candidate-list-table	REACH Regulation (EC)	1000 ppm (0.1 wt%)	

※ The SVHC are **not contained** in HYCON Technology Corporation's product based upon the information collected from our supply chain.
The "**not contained**" means equal or less than the defined threshold in the material. The defined threshold is 0.1 % (1,000 ppm) per weight, unless otherwise specified. Our products are in compliance with the SVHC under REACH current version of restricted substances and prescribed regulations.

5.3 Restricted Use of Conflict Minerals

HYCON Technology Corporation hereby declares all products supplied to customers are of conflict-free minerals.

Over the past few years, provoking society and environmental problems generated from manufacturing product raw materials and processes has grabbed the public's attention. Minerals from Democratic Republic of the Congo (DRC) even raised serious armed conflicts. Despite HYCON Technology Corporation does not procure minerals directly ourselves, still asserting the concept of sustainable corporate development and social responsibility and respects international human rights. HYCON Technology Corporation is in support of not using conflict minerals and is committed to fully survey supply chain, taking social and environmental responsibilities together with joint vendors, thus hereby declares :

1. Not to purchase conflict minerals from mines in the conflict regions.
2. Demand joint vendors not to use conflict minerals and to disclose the origin of Tantalum (Ta), Tin (Sn), Gold (Au), Tungsten (W), Cobalt (Co), Palladium (Pd) used in products and to provide restricted use of conflict minerals letter of commitment.
3. Demand joint vendors to formally convey the request of Restricted Use of Conflict Minerals to their upstream suppliers.
4. Conflict-Free Minerals Policy : <http://www.hycontek.com/en/company-en/1781#tab4>