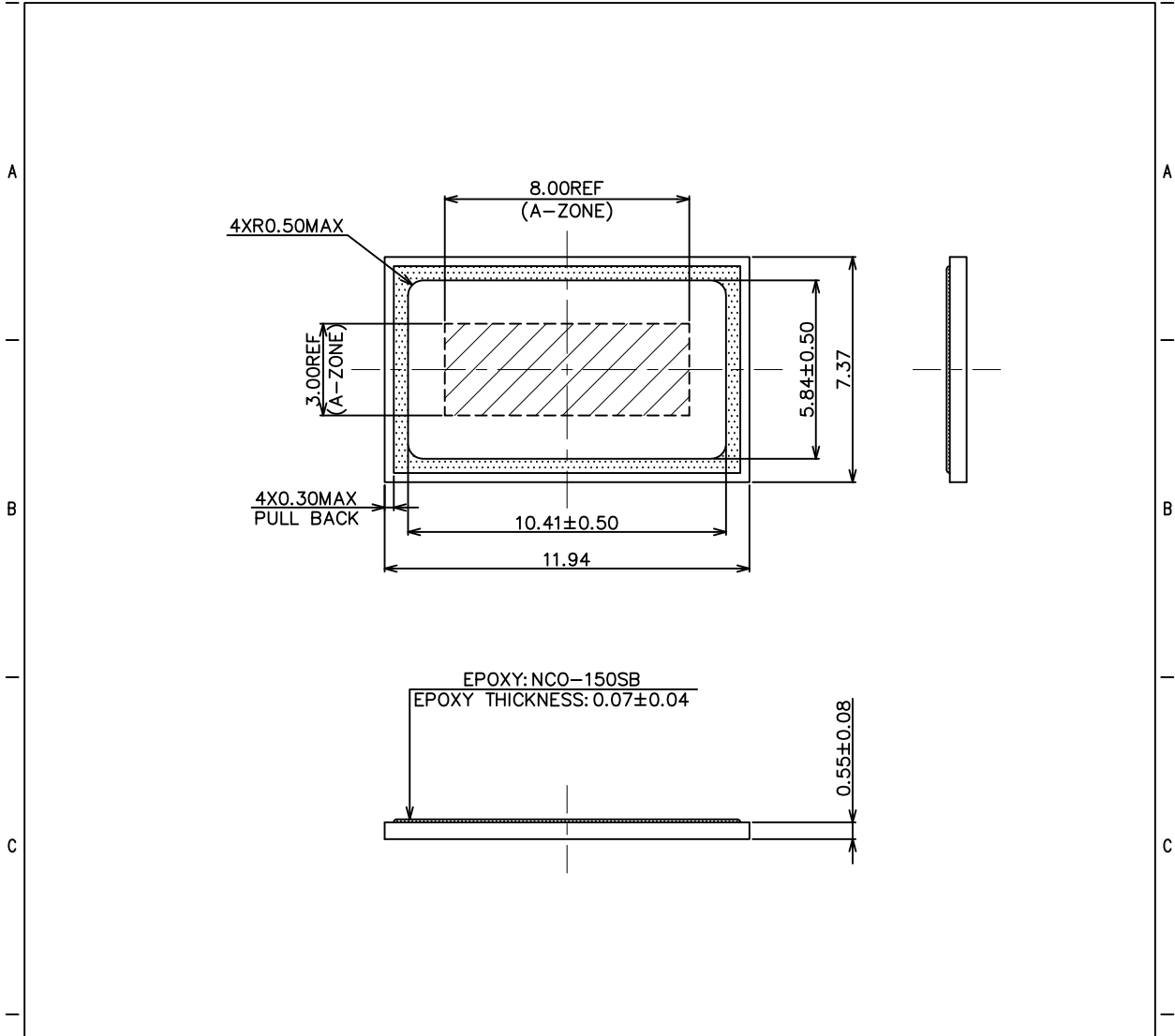


SSM P/N GL472903₂



NOTE

1. DUST AND SCRATCH : 20 μ mMAX (A-ZONE)
(DUST AND CONTAMINATION SHALL BE ACCEPTABLE IF REMOVABLE WITH AIR OR NITROGEN BLOW AT 294kPa)
2. SPEC : KSD-248-0091 (LATEST Rev.)

MODIFICATIONS	-	INITIAL							
	REV	CHANGE	DATE	APPROVED	CHECKED	CHECKED	CHECKED	CHECKED	DRAWN
NAME	11.94x7.37x0.55 GLASS LID		TOLERANCES	SCALE		MATERIAL		1 / 1	
DRAWING NO.	KC-LI0102620		±0.10	5 : 1		D263Teco			
CAUTION	THIS DRAWING CONTAINS THE CLASSIFIED INFORMATION ON KYOCERA CORPORATION. INDICATING TO THE THIRD PARTY OR COPYING ALL OR PART OF THE CONTENT IS STRICTLY PROHIBITED WITHOUT WRITTEN PERMISSION FROM KYOCERA CORPORATION.								

Comparison D 263™ T ^{eco} and D 263™ T				
		D 263™ T eco	D 263™ T	remarks
Mechanical properties				
Density	ρ in g/cm ³	2.51	2.51	annealed at 40°C/h
Stress optical coefficient	C in 1.02×10^{-12} m ² /N	3.4	3.4	
Young`s modulus	E in kN/mm ²	72.9	72.9	
Torsion modulus	G in kN/mm ²	30.1	30.1	
Poisson`s ratio	μ	0.208	0.208	
Knoop hardness (HK 0.1/20)		590	590	
Electrical properties				
Dielectric constant (Permittivity) at 1MHz	ϵ_r at 1 MHz	6.7	6.7	
Dissipation factor at 1 MHz	$\tan \delta$ at 1 MHz	$61 \cdot 10^{-4}$	$61 \cdot 10^{-4}$	
Electric volume resistivity for alternating current 50 Hz	ρ_D in $\Omega \cdot \text{cm}$	$1.6 \cdot 10^8$	$1.6 \cdot 10^8$	$g = 250 \text{ }^\circ\text{C}$
Electric volume resistivity for alternating current 50 Hz	ρ_D in $\Omega \cdot \text{cm}$	$3.5 \cdot 10^6$	$3.5 \cdot 10^6$	$g = 350 \text{ }^\circ\text{C}$
Thermal properties				
	Viscosity	temperature g in $^\circ\text{C}$	temperature g in $^\circ\text{C}$	
Softening point	$\log \eta$ 7.6 dPas	736	736	
Annealing point	$\log \eta$ 13.0 dPas	557	557	
Strain point	$\log \eta$ 14.5 dPas	529	529	
Transformation temperature	in $^\circ\text{C}$	557	557	
Coefficient of mean linear thermal expansion	$\alpha(20 \text{ }^\circ\text{C}; 300 \text{ }^\circ\text{C})$ in 10^{-6} K^{-1}	7.2	7.2	static measurement
Mean specific heat capacity	$c_p(20 \text{ }^\circ\text{C}; 100 \text{ }^\circ\text{C})$ in J/(g·K)	0.75	0.75*	

* revised value, because of new measurement method (in former times=0.82 J/(g.K))

Comparison D 263™ T ^{eco} and D 263™ T					
		D 263™ T ^{eco}	D 263™ T	remarks	
Optical properties					
Refractive index	n_e	1.5255 ± 0.0015	1.5255 ± 0.0015	Pretreatment of samples Condition as supplied ["as drawn"]	
Refractive index	n_D	1.5230	1.5230		
Abbe value	v_e	55	55		
τ (λ) - individual values (thickness = 1.1 mm)	τ_{380} in %	89.8	89.8		
τ (λ) - individual values (thickness = 1.1 mm)	$\tau_{632,8}$ in %	91.8	91.8		
τ (λ) - individual values (thickness = 1.1 mm)	τ_{1064} in %	92.0	92.0		
Edge wavelength ($\tau = 0.46$) (thickness = 1.1 mm)	λ_c in nm	329	329		
Chemical properties					
Hydrolytic resistance acc. to DIN ISO 719	Hydrolytic class	HGB 1	HGB 1		
Acid resistance acc. to DIN 12116	Acid class	S 2	S 2		
Alkali resistance acc. to DIN ISO 695	Class	A 2	A 2		
Hazardous Substances	RoHS Limit in mg/kg	RL in mg/kg	Value in mg/kg	Value in mg/kg	Hazardous Substances EC-directive 2002/95/EC (RoHS-directive)
Cadmium (Cd)	100	1	1.8	< RoHS Limit	
Lead (Pb)	1000	10	< RL	< RoHS Limit	
Mercury (Hg)	1000	0.5	< RL	< RoHS Limit	
Hexavalent Chromium (Cr(VI))	1000	1	< RL	< RoHS Limit	
Polybrominated biphenyls (Sum of PBBs)	1000	500	< RL	< RoHS Limit	
Polybrominated diphenyl ethers (Sum of PBDEs)	1000	500	< RL	< RoHS Limit	
Additional Hazardous Substances					
Antimony (Sb) calculated as Sb ₂ O ₃		50	< RL	-	
Arsenic (As)		50	< RL	-	
Phosphorus (P)		50	< 100	-	

RL= Report Limit

GLASS MATERIAL DATA

■ *Technical Data of Optical Glass(D263,CG-1)*

*Reference Data

- Mechanical properties,Thermal properties,Electrical properties

Code name			D263	CG-1
Material			Borosilicate glass	Borosilicate glass
Item	Unit	Note		
Mechanical properties	Density	g/cm ³	2.51	2.44
	Young's modulus	kN/mm ²	72.9	71.1
	Modulus of rigidity	kN/mm ²	30.1	29.2
	Poisson's ratio	-	0.21	0.22
	Knoop hardness	kN/mm ²	5.78	5.29
Thermal properties	Thermal expansion	x10 ⁻⁷ /deg.C	72	67
			Measured temp(deg.C)	30/300
	Specific heat	J/(g*deg.C)	-	0.745/1.047
			Measured temp(deg.C)	20/200
	Thermal conductivity	W/(m*deg.C)	-	1.13/1.34
			Measured temp(deg.C)	20/200
	Transformation point	deg.C	557	540
	Sag point	deg.C	-	600
	Strain point	deg.C	10 ^{14.5} poise	529
Annealing point	deg.C	10 ¹³ poise	557	
Softening point	deg.C	10 ^{7.6} poise	736	
Electrical properties	Volume resistivity	Ω*cm	1.6x10 ⁸ /3.5x10 ⁶	6.22x10 ¹⁴ /3.02x10 ¹¹ /4.33x10 ⁸
			Measured condition	20deg.C,500V/100deg.C,500V/200deg.C,500V
	Dielectric constant	-	6.7	5.14/5.29/5.63
			Measured condition	20deg.C,1MHz/100deg.C,1MHz/200deg.C,1MHz
Dielectric loss factor	-	tanδ	61x10 ⁻⁴	5.0x10 ⁻³ /5.9x10 ⁻³ /3.1x10 ⁻²
		Measured condition	1MHz	20deg.C,1MHz/100deg.C,1MHz/200deg.C,1MHz

GLASS MATERIAL DATA

■ *Technical Data of Optical Glass(D263,CG-1)*

*Reference Data

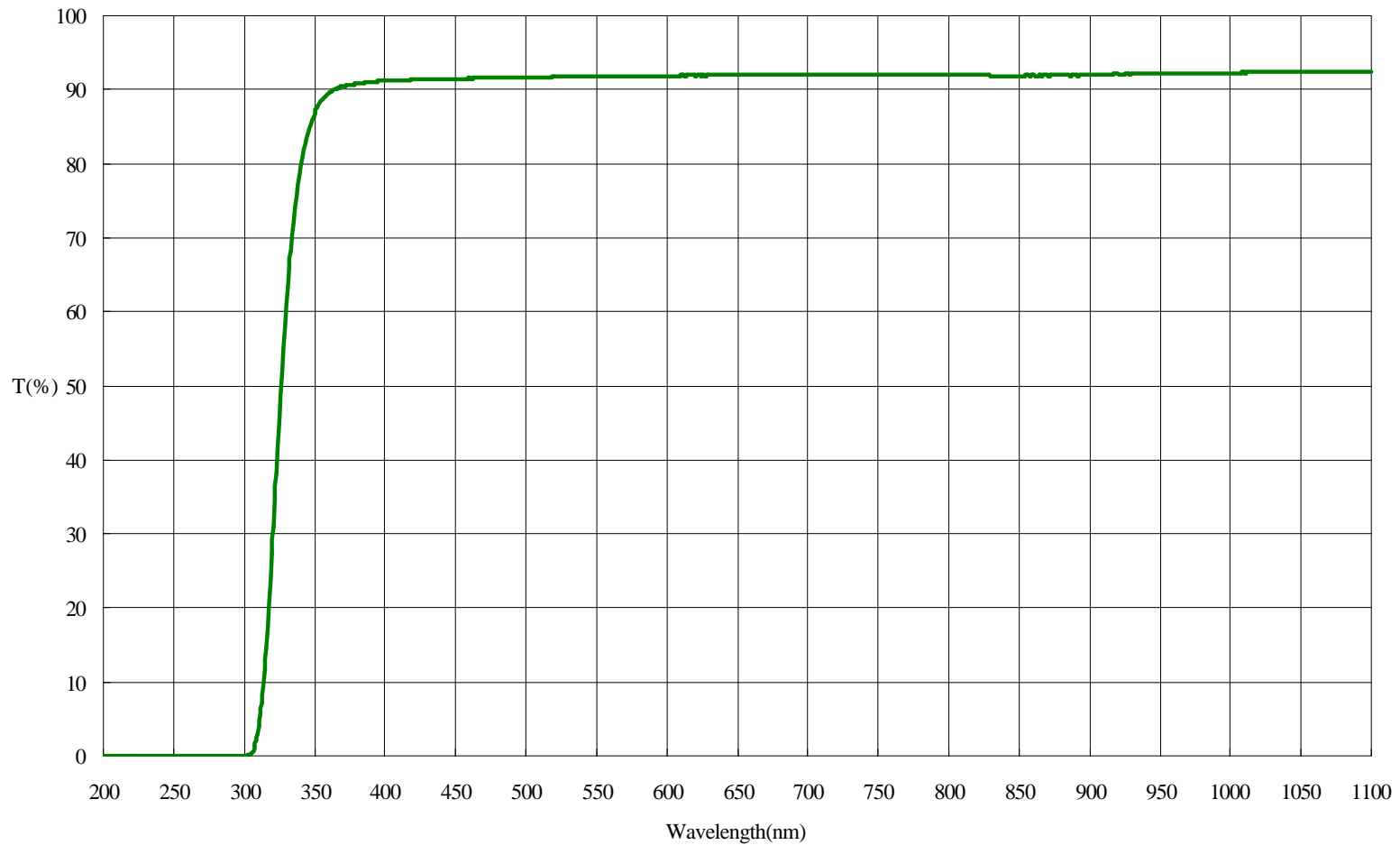
● Optical properties,Others

Code name				D263	CG-1
Material				Borosilicate glass	Borosilicate glass
Item	Unit	Note			
Optical properties	Refractive indices	-	$n_F(\lambda=486.1\text{nm})$	1.5300	-
		-	$n_e(\lambda=546.1\text{nm})$	1.5255	-
		-	$n_d(\lambda=587.6\text{nm})$	1.5231	1.5060
		-	$n_D(\lambda=589.3\text{nm})$	1.5230	-
		-	$n_C(\lambda=656.3\text{nm})$	1.5204	-
	Abbe value	-	$v_e=(n_e-1)(n_F-n_C)$	55	-
		-	$v_d=(n_d-1)(n_F-n_C)$	-	63
		-	$v_D=(n_D-1)(n_F-n_C)$	-	-
	Spectral transmittance	%	200nm	0	0
		%	300nm	0	90.3
		%	400nm	91.2	91.8
		%	500nm	91.7	92.0
		%	600nm	91.9	92.2
		%	700nm	92.0	92.4
		%	800nm	92.0	92.3
%		900nm	92.0	92.2	
%		1000nm	92.3	92.5	
	mm	1100nm	92.5	92.7	
		Measured glass thickness	0.55	0.9	
Others	Glass thickness	mm		0.5/1.0	0.5/2.0

GLASS MATERIAL DATA

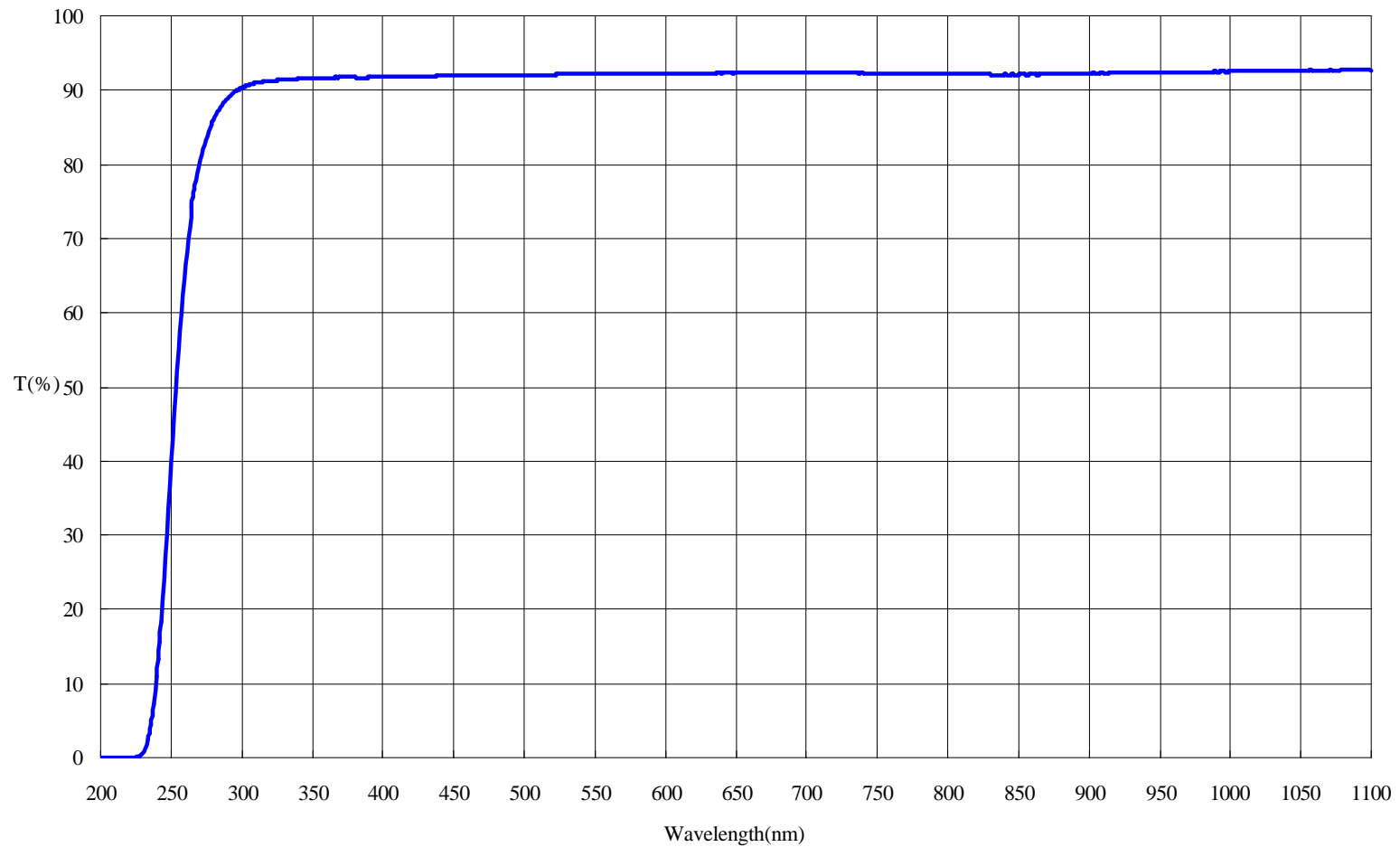
Technical Data of Optical Glass(D263)
*Reference Data (t=0.55)

Transmittance



GLASS MATERIAL DATA

- **Technical Data of Optical Glass(CG-1)**
 - Transmittance
- *Reference Data (t=0.9)



No.	KSD-248-0107-5
-----	----------------

(1/2)

TECHNICAL SHEET
Data Reference

KYOCERA CORPORATION KOKUBU PLANT
SEMICONDUCTOR COMPONENTS DIVISION 3

SEALANT	NCO - 150SB
---------	-------------

1	Physical Property		
	Item	Unit	Data
	Color	-	Black
	Specific Gravity	-	1.8
	Shear Strength(NOTE.1)	MPa	29.42
	Coefficient of Thermal Expansion	1/deg.C x 10E-5	7
	Glass Transition Point	Deg.C	163
	Water Absorption	%	0.75 MAX
	Dielectric Constant	Epsilon(MHz)	7.10
	Loss Factor	Tan delta(1MHz)	0.044
	Thermal Conductivity	W/m*K	0.47
	Surface Resistivity	Ohm	4.1×10E14
Note	(NOTE.1)Curing Sample = Ceramic / Ceramic		

2	Reliability (Judgement =Gloss Leak Test)			
	Test Item	MIL-STD 883E	Condition	Judge(pcs)
	Temperature Cycle	1010-COND C	-65/150deg.C (40Cycles)	0/100
	Thermal Shock	1011-COND A	0/100deg.C (40Cycles)	0/100
	Impact Resistance	2002-COND B	14700m/s ² , 0.5ms, 5Times	0/100
	High Temp Storage	1008-COND C	150deg.C/1000Hr	0/100
	Low Temp Storage	-	-65deg.C/1000Hr	0/100
	High Temp & Humidity	-	85deg.C/85%RH, 1000Hr	0/100
	Pressure Cooker	-	121deg.C, 0.21Mpa, 50Hr	0/100
Note	Ceramic Curing (18.0mm SQ=Sealing Width 1.0mm)			

NCO-150SB

3	Curing Condition
---	------------------

Time t1=20-60 min
t2=10-60 min

*Temp. is at CAP Surface (=Epoxy resin).
 *Please reconfirm the sealing completely done at pilot test.

Recommendable Loading : 98 K

4	Shelf Life(under the packing sealed conditions)			
Temperature	0-5deg.C	6-20deg.C	21-27deg.C	28-35deg.C
Humidity	Less than 60%			
Duration	18 months	12 months	6 months	3 months

Shelf life shall be counted from shipping Date.

Storage Condition:

1. Kyocera recommend to store the product under the unpacking condition at 1-5 deg C (prohibited in freezer)
2. When using of the product,Kyocera recommend baking for removal moisture out by heat Treatment at 80deg.Cx30 minutes.
3. As for the product left over one week after opening,Kyocera recommend to store it at room temperature and humidity of 10% Max.