/ Specification for approval

/ CUSTOMER _____

/ CUSTOMER P.N. _____

/TRX P.N. _____

/MODEL NO. Y1

	RoHS	REACH	Halogen

/ prepare	/ customer to confirm (signed)
/ check	
/ approve	/(signed subscription, please also one copy)

TRX 特锐祥 专 注 电 容 器 11 年

SICHUAN TERUIXIANG TECHNOLOGY INTERNATIONAL CO.,LTD

SHENZHEN TERUIXIANG ELECTRONIC CO., LTD

www.trxc.net

Add sc 1

Add sz 91 503

Tel +86-816-61670387/+86-755-27892117

Fax +86-816-6167076/+86-755-27893019

/E.C.LIST

/ Material name	Y1		/TRX P.N.		
/ Model NO.	Y1	/Data number	RD2006022	/Date	2020-06-03

/ Item	/Date	/Edition	/Reason	/Remarks
1	2014-12-08	/ New Version	More detailed content	
2				
3				
4				
5				

/ Modify		/ check		/ approve	

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Tel +86-816-61670387/+86-755-27892117
Fax +86-816-6167076/+86-755-27893019

/ attached sheet

/ Recognized specifications

/CODE	/ CUSTOMER P.	/TRX P.N.	/ MODEL NO.	/ REMARKS
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Y

1000V 100Hz y

About Y AC ceramic fixed capacitor acknowledgement specifications description:

Y1 a.c. ceramic capacitors are used in electrical and electronic equipment and connected an a.c. main with nominal voltage not exceeding 1000va.c, an d with a nominal frequency not exceeding 100Hz.

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1.How to order

Y1	F	222	M	064	X	280	A
Class	Dielectric	Capacitance	Tolerance	Dielectric diameter	Leads spacing	Leads length	Lead Type
2O _	$Bü	•G£	• Â	ŸBü,È X	6îC±	6îKS	é4“2O _

/type Y

/Temperaturecoefficien torcharacteristic Y5P/Y5U/Y5V

/ Nominal capacity

Y5P(/Capacity unit PF)											
/CODE	101	151	221	271	331	391	471	561	681	821	102
/ Nominal capacity	100	150	220	270	330	390	470	560	680	820	1000
Y5U(/Capacity unit PF)											
/CODE	471	102	152	222	272	332	392	472			
/ Nominal capacity	470	1000	1500	2200	2700	3300	3900	4700			
Y5V(/Capacity unit PF)											
/CODE	471	102	152	222	272	332	392	472			
/ Nominal capacity	470	1000	1500	2200	2700	3300	3900	4700			

/Capacity of al lowable error

/ Permissible error	Y5P	Y5U	Y5V
	10%	20%	20%

/Medium diameter

Y5P(mm 1.0)											
	101	151	221	271	331	391	471	561	681	821	102
	6.5	6.5	6.5	6.5	7.5	8.5	8.5	9.5	9.5	10.	11.
Y5U(mm 1.0)											
	471	102	152	222	272	332	392	472			
	6.5	7.5	9.0	11.	12.	12.	13.	15.			
Y5V(mm 1.0)											
	471	102	152	222	272	332	392	472			
	6.5	6.5	7.5	8.5	9.0	10.	11.	11.			

/Pitch 0.8

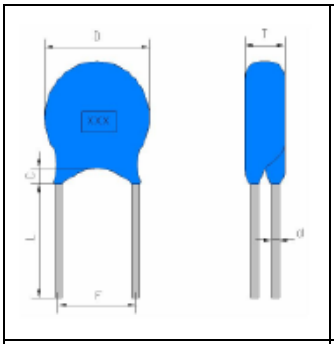
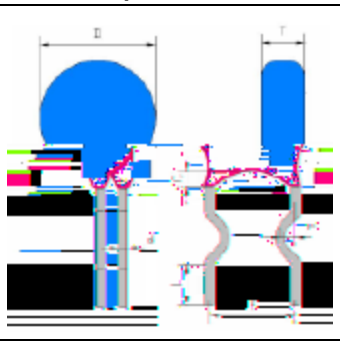
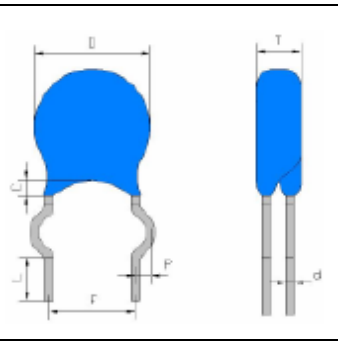
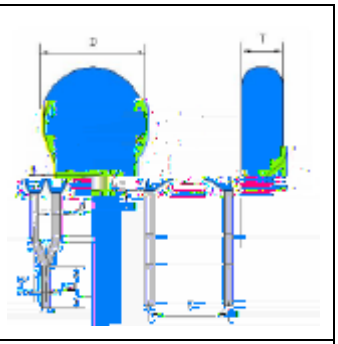
Y1 Y2 10.0mm 7.5mm Y1 10.0mm Y2 7.5mm

/Feet Long

0 ¶ L 28.0

280 28.0 028 2.8

/Pin shape

			
A	B	C	D
/ Straight pin type	K / W ithin the K bending	K / K bending	/ Before and after bending

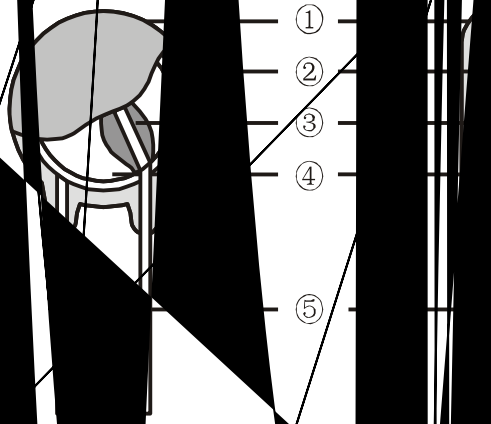
!

/ Various code mentioned above for the company standard application!

2. / Admit size list

/CODE	CUSTOMER P.N	TRX P.N.	D 1.0	T 1.0	Lmin	F 0.8	d 0.5	Bmax2.0
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

3. Produc



Produc

Y1 2K

Example

	/	
	trad mark / brand	
	e/model refer	TY
	d of Dielectr	B(Y5P)/E(Y5U)/F(Y5V)
/	d sub	Y1
	inal capacity	102/471
	ap n of tolerance	M 20% /K(10%)
/ S	certifi n mark	UL
		CQC
		ENEC
		VDE
		K
	K	
		500V~ 500VAC
	of making time	E0410

5. / Performance test

NO	Item		Performance	measuring method
1	4.1Visual examination		No visible damage legible marking lead frame is not oxidation and its surface is without sundries. x	unaided eye or magnifier
2	4.1Dimension		accorder Table	vernier caliper
3	4.1Printing		accorder design	magnifier
4	4.2.1 Voltage proof	Between lead wire	No permanent break-down or flashover during the test period	test voltage: 4000VAC frequency: 50/60Hz duration: 60 seconds leakage current: 5mA max
		Body insulation	No permanent break-down or flashover during the test period	test voltage: 4000VAC frequency: 50/60Hz duration: 60 seconds leakage current: 5mA max
5	4.2.2 Capacitance		Within specified tolerance K: 10% M: 20%	Temperature: 25 3 Humidity: 55 30%RH Voltage: 1.0 0.2V Frequency: 1 0.2KHZ
6	4.2.3 Dissipation factor		Within specified toler ance Y5P: 2.5% Y5U: 5.0% Y5V: 5.0%	Temperature: 25 3 Humidity: 55 30%RH Voltage: 1.0 0.2V Frequency: 1 0.2KHZ
7	4.2.4 Capacitor - temperature characteristic		Y5P: 10% Y5U: +22%~56% Y5V: +22%~82%	Temperature tolerance: 2 ste 1 2 3 4 5 Tem ( ) +20 -25 +20 +85 +20 = $C_x - C_0$ /C_0 C_x capacitor for step2,4 C_0 capacitor for step 3

Continued

NO.	Item	Performance

Continued

NO	Item	Performance		measuring method
12	4.6 Rapid change of temperature	visual examination	No visible damage	upper category temperature +125 3 lower category temperature -25 3 number of cycles :5 duration of exposure at the temperaturelimits 30minutes 30 Capacitor shall be placed at 25 3 for 24 2h before initial measurements. 25 3 24 2
		voltage proof	accorder 4.2.1 4.2.1	
		Capacitance	Y5P: 10% Y5U: 20% Y5V: 20%	
		dissipation factor	Y5P: 2.5% Y5U: 2.5% Y5V: 2.5%	
		Insulation resistance	accorder 4.2.5	
13	4.7 Vibration	Capacitor shall not visible damage		Frequency rangs: 10 55 10Hz swing: 0.75mm, The total duration shall be 6 hours. 6 duration of exposure at X,Y,Z 2hours X Y Z 2
14	4.12 Damp heat (steady state)	visual examination	No visible damage	test temperature: 40 2 humidity: 95 3%RH duration: 500+24/-0hours voltage: 500VAC U_R for one half of the samples. U_R 500V capacitor shall be placed at 25 3 for 24 2hours before measurements. 25 3 24 2
		Capacitance	$=(C_x-C_0)/C_0$: 15%	
		voltage proof	accorder 4.2.1	
		Insulation resistance	3000M $=(R_x-R_0)/R_0$ >50%	

Continued

NO	Item	Performance	measuring method
15	4.13 Impulse voltage	No permanent breakdown or flashover during the test period. If any three successive impulses are shown by the oscilloscope monitor to havehadawaveformindicating thatnoself - healingbreakdow ns or flashovers have taken placeinthecapacitor,then nofurtherimpulsesshallbe applied and the capacitor shallbecountedasconforming . If all 24 impulses have been appliedtothecapacitorand 3 or more of them are of a waveform indicating that no self - healing breakdowns or flash overs have occurred, then the capacitor shall be counted as conforming. 24 3 y If less than three impulses areoftherequiredaveform,th en the capacitor shall be counted as a nonconforming item. y	Peak impulse voltage: 8.0KV Impulses distance : 10seconds Impulses times: 24

Continued

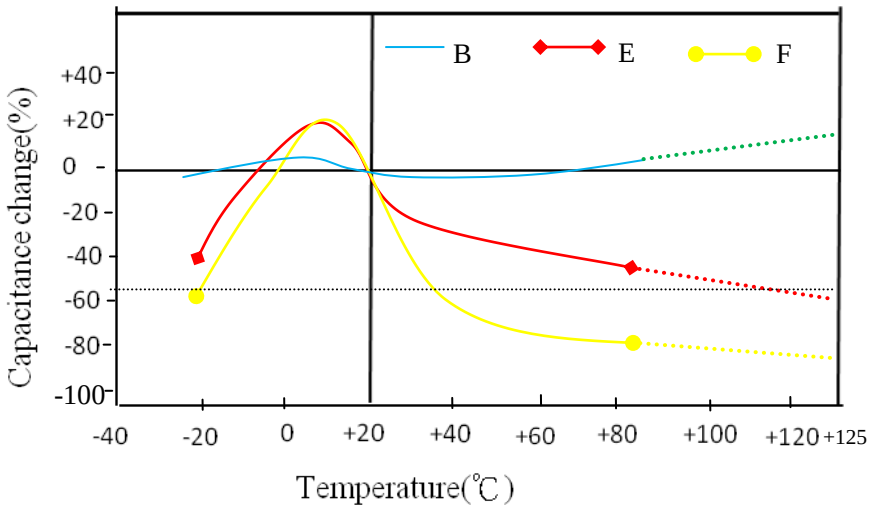
NO	Item	Performance		measuring method
16	4.14 Endurance	visual examination	Novisibl edamage	Test temperature: 125 3 Duration: 1000+24/-0hours test voltage: 850VAC 1.7UR except that once every hour the voltage shall be increased to 1000v r.m.s. for 0.1s. 850VAC UR 1000V 0.1s y Each of these voltage s hall be applied To each capacitor individually through a resistor of 47 5%. 47 5% Capacitor shall be placed at 25 3 for 24 2hours before measurements. 25 3 24 2
		Capacitance	=(C_x-C₀)/C₀ : 20%	
		voltage proof	accorder 4.2.1	
		Insulation resistance	3000M =(R_x-R₀)/R₀ >50%	
17	4.15 Charge and Discharge	Capacitance	= C_x-C₀ /C₀ : 20%	Charge voltage: 707VAC(2U_R) number of cycles: 10000 the rate of approximately: one operation per se cond. Each cycle shall consist of charging and discharging the capacitor. Each capacitor shall be individually charged by applying the test voltage through a resistor with the value $R=\frac{220 \text{ h } 10^{-6}}{C_R}\ \Omega$ Capacitor shall be placed at 25 3 for 24 2hours before measurements. 25 3 24 2
		Insulation resistance	3000M = R_x-R₀ /R₀ >50%	
18	4.17 Passive flammability	category B The burning time of any specimen shall not exceed the time sp ecified. y Burning droplets or glowing parts falling down shall not ignite the tissue paper. y		category B

volume ranges	flame time	Maximum burning time
V<250mm³	5S	30S
250<V 500mm³	10S	30S
500<V 1750mm³	20S	30S
V>1750mm³	30S	30S

Continued

NO	Item	Performance	measuring method
19	4.19 Component solvent Resistanc	No visible damage. Performance accorder 4.2.1~4.2.5 4.2.1 ~ 4.2.5	Solvent to be used: 30 5%isopropyl alcohol and 70 5%fluxional compound 30 5% 70 5% Solvent temperature: 23 5 The capacitor shall be immerged in solvent for 5 0.5seconds. 5 0.5 y Recovery time: 8hours
20	4.20 Solvent resistanc e of the marking	The marking shall be legible	Solvent to be used: 30 5%isopropyl alcohol and 70 5%fluxional compound 30 5% 70 5% Sdvent temperature: 23 5 The capacitor shall be immerged in solvent for 5 0.5seconds and its markshall be wiped with pledget for 10times. 5 0.5 10

6.



7. Climatic category

According to EIA STANDARD RS 198

RS 198

40 / 085/ 21

Category temperature lower limit in days — Upper category temperature — Steady state damp heat test time

1st SET 2nd SET 3rd SET

1st SET Minimum ambient temperature of operation (Cold test)

2nd SET Maximum ambient temperature of operation (Dry heat test)

3rd SET Number of days (Damp heat steady state test)

Category Examples according to IEC 60068 -1 IEC 60068-1
25/085/04
25/085/21
40/085/21
55/125/21
55/125/56

First set Two digits denoting the minimum ambient temperature of operation (Cold test)	
65	-65
55	-55
40	-40
25	-25
10	-10
00	0
05	+5

Second set Three digits denoting the maximum ambient temperature of operation (Dry heat test)	
155	+155
125	+125
110	+110
085	+85
080	+80
075	+75
070	+70

Third set Two digits denoting the number of days(Damp heat steady state test)	
56	56 days
21	21 days
10	10 days
04	4 days
00	The component is not required to be exposed to damp heat.

8.

NO	COUNTR	STANDARD NO.		CLASS TYPE W CC P.F.C	FILE NO.	MARK
1	GERMAN EUROPE	VDE	DIN EN 60384-14 (VDE 0565 Teil 1 -1): 2006-04 EN60384-14:2005-08 IEC 60384-14(ed.3)	Y1 TY AC 400V 25/125/21C	40031733	
2	USA CSA	UL CUL	UL 60384-14 2010 CSA E60384-14 :09	Y1 TY AC400/500V 25/125/21B	E315719	
3	CHINA	CQC	IEC 60384-14:2005	Y1 TY AC500V 25/125/21B	CQC14001107432	
4	KOREA	KC	KC60384-14(2015-09) KC 60384-1(2015-09)	Y1 TY AC500V 25/125/21B	HU03034-17001A	

9.Requirements for concentration limits for certain hazardous substances

RoHS2.0 2011/65/EU

halogen

REACH No190 7/2006

RoHS H.F. REACH

Substances	concentration (unit: ppm)
Cadmium and cadmium compounds	<100
Lead and lead compounds	<1000
Mercury and mercury compounds	<1000
Hexavalent chromium compounds	<1000
Polubrominated biphenyls PBBS	<1000
Polubrominated diphenylethers PBDES	<1000
Cd+Pb+ Hg + Cr^{+6}(packing materials) + + +	<100
Cl	<900
Br	<900
Cl+Br +	<1500
SVHC (155item) REACH 155	<1000

10.Manufacturing date codes (TRX)

code of year				code of month		code of day			
year	code	year	code	month	code	day	code	day	code
		2020	M	1	01	1	01	16	16
		2021	N	2	02	2	02	17	17
2010	A	2022	P	3	03	3	03	18	18
2011	B	2023	R	4	04	4	04	19	19
2012	C	2024	S	5	05	5	05	20	20
2013	D	2025	T	6	06	6	06	21	21
2014	E	2026	U	7	07	7	07	22	22
2015	F	2027	V	8	08	8	08	23	23
2016	H	2028	W	9	09	9	09	24	24
2017	J	2029	X	10	10	10	10	25	25
2018	K			11	11	11	11	26	26
2019	L			12	12	12	12	27	27
						13	13	28	28
						14	14	29	29
						15	15	30	30
								31	31

Note: the year code repeats once every 20 years for a one - week period.
20 y

11. Storage conditions

. The capacitors are must not stored in a corrosive atmosphere, where sulphide or chloride gas,acid,alkali or salt are present. Exposure of the components to moisture, should be avoided.

y

. Capacitors can be stored for short periods at any temperature within the entire range of category temperature.

. 3 y

For long storage periods, however, the following conditions should be observed:

Storage temperature: - 25 to +40
- 25 to +40

Maximum relative humidity 80%,no dew allowed on the capacitor.
80%

Maximum duration 12months.
12

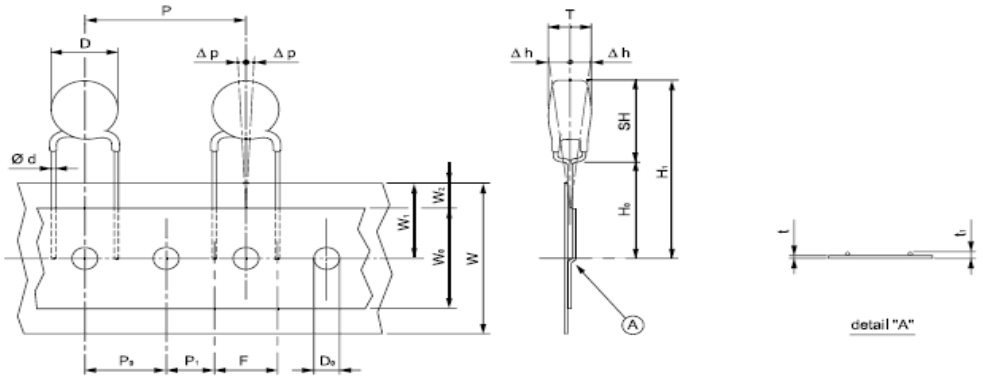
12.Packing

A:bulk

DIMENSION	Lead length	Bag
D<8mm	10mm	1000PCS
	>10mm	500PCS
D 8mm	500PCS	

B: TAPE (1000PCS/BOX)

Capacitors on tape type pitch 7.5mm /10mm



Parameter	Symbol	Taping Specifications (unit: mm)		
		Pitch 7.5	Pitch 10	Tolerance
lead diameter	d	0.55	0.55	0.1
pitch between capacitors	p	12.7	25.4	1.0
feed-hole pitch	P_0	12.7	12.7	0.3
feed-hole centre to lead centre	P_1	8.95	7.62	0.7
lead sp acing	F	7.5	10.0	1.0
component alignment	h	0	0	3.0
deviation along tape, left or right	p	0	0	1.3
tape width	w	18.0	18.0	0.5
hold-down tape width	W_0	12.0	12.0	-
hole position	W_1	9.0	9.0	0.5
hold-down tape position	W_2	3.0	3.0	-
seated height to tape centre	H_0	20.0	20.0	1.0
maximum component height	H_1	37.0	37.0	-
feed-hole diameter	D_0	4.0	4.0	0.2
total tape thickness	t	0.50	0.50	0.2
maximum thickness of tape and wires	t_1	1.0	1.0	-

13. Cautions and warnings

. Attention is drawn to the fact that repetition of the volt age proof test by the user may damage the capacitor.

y

. Do not place the capacitor a PC board whose hole space differs from the specified lead space.
PCB PCB , PCB ,

y

. Avoid any compressive, tensile or flexural stress. y

. Please consult us first if you wish to embed the capacitor in plastic resins.

y

. Do not move the capacitor after it has been soldered to the board.
PCB y

. Do not pick up the PC board by the soldered capacitor.
PCB y

14. Voltage proof test guide

A. Correct Method

Operate explain:

. Set up test voltage , current and time in high voltage instrument.

y

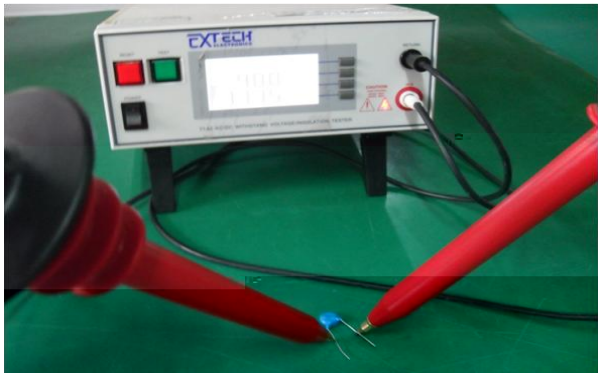
. The two pins of capacitor are nipped in fixture of high voltage instrument.

y

. Give the start button a slight press and the capacitor changed and tested, high voltage instrument sto p output when the time arrived.

y

B. Error Method



Operate explain:

Capacitor was test with high voltage test probe for electriferous touch the two pins of capacitor.

y

Y

16. general knowledge for ceramic Capacitors

. for capacitance and Dissipation factor(tan) :

. Thecapacitoristestedafterbeclampedwiththetesttool,can ttakethecapa citor snoumenonfortestwithhand. Capacitanceanddissipationfactorarenotexactbecause of temperature in hand and test result is not right.

y

y

. The capacitor s capacitance an d Dissipation factor after voltage tested may not test before the capacitor is stored for 24 hours after voltage test.the capacitor must be discharge between leads before test, or else voltage of remainder attaint test apparatus. 24

y

. for Voltage proof:

Charge to capacitor after AC or DC Voltage, value, time and current are seted in test apparatus, clamping capacitor s lead with clamp for test apparatus output. Space between clamps fo r test apparatus output must meet standard or else flashover will be happened between two leads if space is too small. Capacitor s configuration was be destroyed if great current will be happened in capacitor for moment.

y

17.Normative reference s

. IEC 60384-1 2008 Fixed capacitors for use in electronic equipment Part 1: Generic specification

1

. IEC 60384-14 3 rd 2005 Fixed capacitors for use in electronic equipment Part 14 Sectional specification Fixed capacitors for el ectromagnetic interference suppression and connection to the supply mains

14

. GB/T 5169.5-1997 (IDT IEC 60695-2-2:1991) Fire hazard testing for electronic products Part 2: Test methods Section 2: Needle -flame test

2 2

. GB/T 2693-2001 (IDT IEC 60384-1 1999) Fixed capacitors for use in electronic equipment - Part 1: Generic specification

1

. GB/T 2828.1-2003 (IDT ISO 2859-1:1999) Sampling procedures for inspection by attrib utes - Part 1: Sampling schemes indexed by acceptance quality limit(AQL)for lot -blot inspection

1 (AQL)

. GB/T 2471-1995 (IDT IEC 63:1963) Preferred number series for resistors and capacitors

. GB/T 2691-1994 (IDT IEC 62:1992) Marking codes for resistors and capacitors

. SJ/T 11363-2006 Requirements for concentration limits for certain hazardous substances in electronic information products

(1). SJ/T 11364-2006 Marking for control of polluti on caused by electronic information products

(2). SJ/T 11365-2006 Testing methods for hazardous substances in electronic information products

(3). 2011/65/EU (RoHS2.0) The Restriction of the use of certain Hazardous substances i n Electrical and Electronic Equipment

. 2002/96/EC (WEEE) Waste Electrical and Electronic Equipment

. 94/62/EC 2005/20/EC Europe Parliament and Council Directive94/62/EC of 20 December 1994 on Packaging and packaging waste

1994 12 20 94/62/EC

(6). No1907/2006(REACH) Registration,Evaluation,AuthorizationandRestrictionof Chemicals(151item)

x x