

SPECIFICATION AND PERFORMANCE FOR APPROVAL

P/N: E421C-5000G1

2003/12/15 REV.0 16 of 37

● Mechanical Performance:

1. Twist Life(For Specification 3.1): STD: 500 cycles min.

The housing after test shall be not functional damage.

	Initial	After Twist life
Sample 1	OK	OK
Sample 2	OK	OK
Sample 3	OK	OK
Sample 4	OK	OK
Sample 5	OK	OK

2. Tensile of Coaxial Cable(For Specification 3.4): STD: load 1Kgf / 1 minute.

No fall of Coaxial cable.

	Initial	After Twist life
Sample 1	OK	OK
Sample 2	OK	OK
Sample 3	OK	OK
Sample 4	OK	OK
Sample 5	OK	OK

3. Tensile-Housing (For Specification 3.2): STD: 5 kgf. cm / 3 second

No loosen of resin tube.

	Initial	After Twist life	OVER 10 kgf
Sample 1	OK	OK	OK
Sample 2	OK	OK	OK
Sample 3	OK	OK	OK
Sample 4	OK	OK	OK
Sample 5	OK	OK	OK

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4.Vibration (For Specification 3.3):

(Frequency:10-55-10HZ/min)

(Amplitude:1.52mm)

(Period:2 hours for each X, Y and Z axis directions ; in total:6 hours)

Test Result: (V.S.W.R: ≤ 2.0)

Frequency		2.4 GHz	2.45 GHz	2.5 GHz
1	Before Vibration Test	1.631	1.228	1.574
	After Vibration Test	1.662	1.216	1.582
2	Before Vibration Test	1.623	1.302	1.667
	After Vibration Test	1.611	1.344	1.647
3	Before Vibration Test	1.539	1.324	1.737
	After Vibration Test	1.511	1.394	1.762
4	Before Vibration Test	1.429	1.294	1.797
	After Vibration Test	1.465	1.368	1.728
5	Before Vibration Test	1.614	1.283	1.584
	After Vibration Test	1.645	1.386	1.600

Test Result: Return Loss: ≤ -10 dB

Frequency		2.4 GHz	2.45 GHz	2.5 GHz
1	Before Vibration Test	-12.47 dB	-20.36 dB	-13.06 dB
	After Vibration Test	-11.71 dB	-20.02 dB	-12.62 dB
2	Before Vibration Test	-12.52 dB	-17.81 dB	-12.08 dB
	After Vibration Test	-12.42 dB	-16.01 dB	-12.11 dB
3	Before Vibration Test	-13.31 dB	-17.02 dB	-11.29 dB
	After Vibration Test	-13.06 dB	-16.07 dB	-11.02 dB
4	Before Vibration Test	-12.49 dB	-17.96 dB	-12.82 dB
	After Vibration Test	-12.21 dB	-16.11 dB	-12.64 dB
5	Before Vibration Test	-11.67 dB	-17.38 dB	-12.53 dB
	After Vibration Test	-11.06 dB	-17.26 dB	-12.03 dB

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● Environmental Performance:

1. Temperature Life (For Specification 5.1): 96 hours at 60±2°C

Test Result: (V.S.W.R: ≤ 2.0)

Frequency		2.4 GHz	2.45 GHz	2.5 GHz
1	Before Temperature Life Test	1.632	1.225	1.576
	After Temperature Life Test	1.691	1.233	1.589
2	Before Temperature Life Test	1.625	1.300	1.661
	After Temperature Life Test	1.662	1.341	1.681
3	Before Temperature Life Test	1.538	1.324	1.732
	After Temperature Life Test	1.525	1.366	1.766
4	Before Temperature Life Test	1.426	1.298	1.796
	After Temperature Life Test	1.452	1.281	1.781
5	Before Temperature Life Test	1.613	1.287	1.581
	After Temperature Life Test	1.691	1.286	1.627

Test Result: Return Loss: ≤ -10 dB

Frequency		2.4 GHz	2.45 GHz	2.5 GHz
1	Before Temperature Life Test	-12.49 dB	-20.32 dB	-13.02 dB
	After Temperature Life Test	-11.76 dB	-20.29 dB	-13.29 dB
2	Before Temperature Life Test	-12.53 dB	-17.86 dB	-12.09 dB
	After Temperature Life Test	-11.61 dB	-17.51 dB	-11.24 dB
3	Before Temperature Life Test	-13.30 dB	-17.05 dB	-11.27 dB
	After Temperature Life Test	-13.09 dB	-16.75 dB	-11.31 dB
4	Before Temperature Life Test	-12.44 dB	-17.94 dB	-12.86 dB
	After Temperature Life Test	-12.40 dB	-17.20 dB	-12.60 dB
5	Before Temperature Life Test	-11.65 dB	-17.36 dB	-12.55 dB
	After Temperature Life Test	-11.16 dB	-17.11 dB	-12.16 dB

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2. Cold(For Specification 5.2):96 hours at $-10 \pm 2^{\circ}\text{C}$

Test Result: (V.S.W.R: ≤ 2.0)

Frequency		2.4 GHz	2.45 GHz	2.5 GHz
1	Before Cold Test	1.630	1.222	1.573
	After Cold Test	1.696	1.234	1.580
2	Before Cold Test	1.622	1.305	1.661
	After Cold Test	1.620	1.352	1.689
3	Before Cold Test	1.537	1.328	1.739
	After Cold Test	1.590	1.372	1.785
4	Before Cold Test	1.428	1.299	1.798
	After Cold Test	1.459	1.351	1.721
5	Before Cold Test	1.613	1.285	1.585
	After Cold Test	1.677	1.289	1.516

Test Result: Return Loss: ≤ -10 dB

Frequency		2.4 GHz	2.45 GHz	2.5 GHz
1	Before Cold Test	-12.48 dB	-20.35 dB	-13.05 dB
	After Cold Test	-12.70 dB	-20.36 dB	-16.02 dB
2	Before Cold Test	-12.53 dB	-17.82 dB	-12.07 dB
	After Cold Test	-11.61 dB	-17.94 dB	-12.18 dB
3	Before Cold Test	-13.30 dB	-17.03 dB	-11.27 dB
	After Cold Test	-13.01 dB	-17.66 dB	-11.28 dB
4	Before Cold Test	-12.48 dB	-17.97 dB	-12.84 dB
	After Cold Test	-11.92 dB	-16.01 dB	-11.57 dB
5	Before Cold Test	-16.72 dB	-18.08 dB	-15.32 dB
	After Cold Test	-15.67 dB	-17.38 dB	-15.53 dB

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3.Humidity(For Specification 5.3): 96 hours at $40 \pm 2^{\circ}\text{C}$, 90 ~ 95 % RH

Test Result: (V.S.W.R: ≤ 2.0)

Frequency		2.4 GHz	2.45 GHz	2.5 GHz
1	Before Humidity Test	1.661	1.238	1.564
	After Humidity Test	1.665	1.247	1.580
2	Before Humidity Test	1.633	1.322	1.657
	After Humidity Test	1.631	1.354	1.646
3	Before Humidity Test	1.549	1.314	1.757
	After Humidity Test	1.556	1.354	1.794
4	Before Humidity Test	1.419	1.284	1.787
	After Humidity Test	1.449	1.348	1.718
5	Before Humidity Test	1.604	1.263	1.574
	After Humidity Test	1.670	1.297	1.608

Test Result: Return Loss: ≤ -10 dB

Frequency		2.4 GHz	2.45 GHz	2.5 GHz
1	Before Humidity Test	-12.57 dB	-20.26 dB	-13.16 dB
	After Humidity Test	-11.71 dB	-20.39 dB	-13.25 dB
2	Before Humidity Test	-12.62 dB	-17.91 dB	-12.18 dB
	After Humidity Test	-11.61 dB	-17.56 dB	-12.20 dB
3	Before Humidity Test	-13.21 dB	-17.22 dB	-11.39 dB
	After Humidity Test	-13.03 dB	-16.62 dB	-11.05 dB
4	Before Humidity Test	-12.69 dB	-17.86 dB	-12.92 dB
	After Humidity Test	-11.82 dB	-17.08 dB	-12.51 dB
5	Before Humidity Test	-11.57 dB	-17.28 dB	-12.23 dB
	After Humidity Test	-11.23 dB	-17.11 dB	-12.17 dB

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4. Thermal Shock(For Specification 5.4): The following conditions for 10cycles.

A. $-20 \pm 2^{\circ}\text{C}$ 1hours

B. $+60 \pm 2^{\circ}\text{C}$ 1hours (Transit time shall be within 3minutes.)

Test Result: (V.S.W.R: ≤ 2.0)

Frequency		2.4 GHz	2.45 GHz	2.5 GHz
1	Before Thermal Shock Test	1.641	1.218	1.554
	After Thermal Shock Test	1.689	1.237	1.588
2	Before Thermal Shock Test	1.633	1.312	1.617
	After Thermal Shock Test	1.721	1.346	1.632
3	Before Thermal Shock Test	1.559	1.344	1.727
	After Thermal Shock Test	1.602	1.368	1.778
4	Before Thermal Shock Test	1.419	1.254	1.747
	After Thermal Shock Test	1.503	1.360	1.726
5	Before Thermal Shock Test	1.664	1.273	1.564
	After Thermal Shock Test	1.677	1.290	1.619

Test Result: Return Loss: ≤ -10 dB

Frequency		2.4 GHz	2.45 GHz	2.5 GHz
1	Before Thermal Shock Test	-12.27 dB	-20.66 dB	-13.16 dB
	After Thermal Shock Test	-11.72 dB	-20.32 dB	-12.26 dB
2	Before Thermal Shock Test	-12.42 dB	-17.51 dB	-12.18 dB
	After Thermal Shock Test	-12.69 dB	-17.56 dB	-12.29 dB
3	Before Thermal Shock Test	-12.39 dB	-17.66 dB	-12.62 dB
	After Thermal Shock Test	-12.10 dB	-16.58 dB	-12.29 dB
4	Before Thermal Shock Test	-12.69 dB	-17.26 dB	-12.72 dB
	After Thermal Shock Test	-11.85 dB	-16.10 dB	-12.66 dB
5	Before Thermal Shock Test	-11.57 dB	-17.28 dB	-12.33 dB
	After Thermal Shock Test	-11.19 dB	-17.06 dB	-12.15 dB

SPECIFICATION FOR APPROVAL

DOCUMENT: A30178B001

STYLE : 200°C 30V
RG-178B/U

SIZE: 7/0.102 SCCS

RECOGNIZED:

WONDERFUL HI-TECH CO.,LTD

OFFICE : 72WU KONG 6TH ROAD,
WU KU IND. DISTRICT
TAIPEI HSIEN,TAIWAN

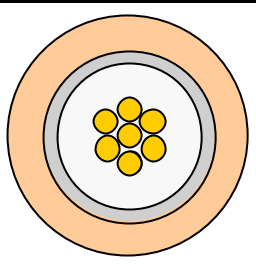
TEL : (02)22988033
FAX : (02)22988031-2

FACTORY : 17 PEI YUAN ROAD,
CHUNG-LI IND. PARK
TAIWAN, R.O.C.

TEL : (03)4527777
FAX : (03)4517214

WONDERFUL HI-TECH CO., LTD

SPECIFICATION

STYLE	200°C 30V COAXIAL	DOCUMENT NO :	A30178B001
SIZE	RG-178B/U	ESTABLISHED DATE:	2003/02/13
STANDARD : MIL-C-17			
Conductor	Size	AWG	30
	Material	----	Silver-Coated Copper Clad Steel
	Conductors No.	----	7
	Conductors Size	mm	0.102
	O.D.	mm	0.30
Insulation	Average Thickness	mm	0.28
	Diameter	mm	0.86
	Material	----	FEP
	Color	----	Clear
Braid	Material	----	Silver-Coated Copper
	Construction	mm	16 / 3 / 0.10
	Coverage	%	95
Jacket	Average Thickness	mm	0.25
	Diameter	mm	1.80 $\pm$ 0.05
	Material	----	FEP
	Color	----	Brown
Marking			
Drawing			

AK001/210X297/1.0

PAGE : 1

EDITION : 1.1

REVISED DATE :

MAKER : C.Y.CHEN

CONFIRM : S.N.WONG

APPROVAL : W.J.WANG

WONDERFUL HI-TECH CO., LTD

SPECIFICATION

Electrical & Physical Properties							
Item				RG-178B/U			
Rating Temp Voltage				200°C 30V			
Conductor Resistance				838 OHM/KM/20°C MAX.			
Insulation Resistance				3000 MEGA OHM/KM MIN.			
Dielectric Strength				AC 1.0 KV/Minute			
Spark Test				2.0 KV			
Insulation	Unaged	Tensile Strength		2500 PSI MIN.(1.76 Kg / mm ²)			
		Elongation		200% MIN.			
	Aged	Tensile Strength		UNAGED MIN 75%(168HRS×232°C)			
		Elongation		UNAGED MIN 75%(168HRS×232°C)			
Jacket	Unaged	Tensile Strength		2500 PSI MIN.(1.76 Kg / mm ²)			
		Elongation		200% MIN.			
	Aged	Tensile Strength		UNAGED MIN.75%(168HRS×232°C)			
		Elongation		UNAGED MIN.75%(168HRS×232°C)			
Nom. Impedance				50 Ohms			
Nom. Capacitance				95.8 pF/m			
Nom. Vel. of Prop.				69.5%			
VSWR (0 – 6 GHZ)				UNDER 1.3			
Attenuation (dB/100m)	100MHz	1GHz	1.8GHz	2.4GHz	5.2GHz	6GHz	
	46	155	295	340	505	550	

From = 安泰弘

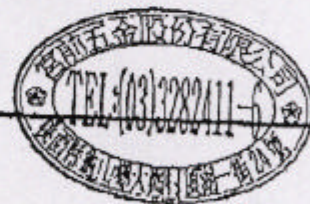
宮前五金股份有限公司

Fr. 128

檢驗報告表

編號: 891207

客 戶		ELITE ELECTRONICS CO., LTD.		
品 名		FREE CUTTING BRASS ROD		
規 格		JIS H3250 C3604 BD		
項 目	數 據	標 準 值	實 測 值	備 註
化 學 成 份 %	Cu	57.0 - 61.0	58.98	六角11.0m/m 六角8.0m/m
	Pb	1.8 - 3.7	3.40	六角12.7m/m
	Fe	< 0.5	-----	四角11.0m/m 四角9.5m/m
	Sn+Fe	< 1.2	0.74	丸 21.0m/m 丸 19.0m/m
	Zn	REMAINDER	REMAINDER	丸 11.0m/m 丸 9.0m/m
其 它				丸 6.35m/m



桃園縣龜山鄉頂湖一街 24 號 TEL: (03) 3283068-70

Tef.

APPENDIX (技術仕様)

LEO ME PTFE Rod is manufactured with virgin PTFE powder by ram extrusion or compression molding and is conformed to meet the requirement of ASTM

TABLE 1 Detail Specification for PTFE Rod

ITEM	PROPERTY	ASTM TEST METHOD	VALUE
1	Specific gravity	D792	2.15-2.2
2	Tensile strength	D638	280-350 kg/cm ²
3	Elongation	D638	200-400%
4	Dielectric strength	D149	30KV/mm
5	Deformation under load. 6.9Mpa, 50C, %	D621	3.5 - 6
6	Dissipation factor 1 KHz	D150	Less than .0.0005
7	Dielectric constant 1 KHz	D150	2.0 - 2.1
8	Volume resistivity	D257	> 10 ¹⁶
9	Surface resistivity	D257	10 ¹⁷
10	Flexural modulus	D790	430-500Mpa
11	Compressibility	D1147	16-20%
12	Hardness, durometer	D2240	D53 - D60
13	Impact strength	D256	16kg-cm/cm
14	Coefficient of linear thermal expansion, per C. 30C to 80C, 10 ⁻⁵ C	D696	12.3 to 11.6

浩裕興業有限公司

台北縣新莊市復興路三段 87 號

TEL:(02)29907903

FAX:(02)29978644

數據組編號: 1

n =	1	Au =	5.47 μ"
n =	2	Au =	6.38 μ"
n =	3	Au =	4.56 μ"
n =	4	Au =	4.37 μ"
n =	5	Au =	4.12 μ"

XRAY XDL

數據組編號: 1

產品名稱: Au

數據組結果
(Flash 3 μ")

校正標準片

Au

平均值	X:	4.982 μ"
標準差	S:	0.9328 μ"
讀值數量	n:	5
最小值	:	4.122 μ"
最大值	:	6.382 μ"

886 2 29898188

FUN JAN CO LTD

01#04月11日 14:00 01/01

BC 000178 鋼 92.5 下 7 頂

SHYANG RWEV. INDUSTRIAL CO. LTD. FAX NO. : 886282511746

APR. 11 2001 02:26PM P. 1

BRUSHWELLMAN

ENGINEERED MATERIALS

Reading Plant
Shoemakersville Road
READING PA 19555
USA
Phone: (216) 486-4200
Fax:

Brush Wellman Singapore (S) Pte.
Ltd.
110 Paya Lebar Road, #02-01
409009 SINGAPORE
SINGAPORE

SR0057 2.5

Material Certificate				
Date	07/19/2000			
Purchase order item/date	S80751 / 03/13/2000			
Delivery item/date	60095259 000010 / 07/24/2000			
Order item/date	53625 000030 / 03/14/2000			
Customer nbr	Customer part nbr			
11817				
Customer spec				
Rev	Type	Comp	Class	Grade

Our Material: K575850200 ROD CD M25 H .09840 X

Brush Wellman testing for chemical composition (by Optical Emission Spectrometry), is conducted at our Simore, OH Laboratories. Testing of mechanical or physical properties is conducted at Laboratories which are accredited by American Association for Laboratory Accreditation.

This material was inspected and tested for conformity as required in accordance with the noted part specification, and revision number. The quantitative test data obtained from these tests are available for review by the buyer.

Batch 0000175447 / Quantity 1,195.000 LBS

Characteristic	Unit	Value	Specification Lower	Limits Upper
CDP (UNS) Alloy	-	CD7300		
ASTM Temper	-	1004		
Brush Spec Nbr.	-	BWT-RW5.00-2		
<u>Dimensional Attributes</u>				
Diameter	-	0.09840		0.00197
Diameter Plus	-	0.00197		
Diameter Minus	-	SP-42525		
Length	-	0.25000		
Length Plus	-	0.00000		
Length Minus	-			

Mechanical/Physical Properties

Grain Size	mm	0.024			0.050
Tensile	kgf	25.8	63.0		88.0
Yield	kgf	61.0	52.0		74.0
Elongation	%	12.0	10.0		
Hardness Scale		HV			
Hardness Value		254.0	200.0		270.0

The material supplied with this certification has not been heat treated. The properties were achieved in Brush Wellman's laboratory. They represent what the material would achieve using the time and temperatures

CERTIFIED TRUE COPY



辰吉電化股份有限公司
Chen Chi Electro Chemical Co., Ltd

分光分析檢驗報告表

Vacuum Emission Spectrometer Analysis Report

委託者: 辰吉電化股份有限公司
Sample: 鋼
Job Description: 材料分析

Sample Received: 97.6.13
Date Issued: 97.6.13

分析結果 ANALYTIC RESULT:

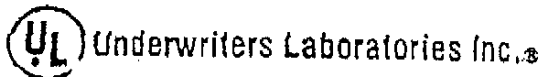
NO	CONT	AO-NO	SR-NO	Sn	Pb	Zn	Al	Fe	Mn
N=1	08.841		02881	0.0197	33.07		0.0849	0.0127	0.0771
N=2	86.730		02811	0.0671	33.19		0.0816	0.0129	0.0738
AVE	86.785		02881	0.0884	33.13		0.0732	0.0141	0.0755
N=1	00230		Sb	As					
N=2	00159		0.0633	0.0163					
AVE	00199		0.0603	0.0083					

附註: 本報告僅對送檢樣品負責。
Remarks: This report is responsible for designated samples only.



保長
Division Chief:

檢驗員: 許永興
Inspector:



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Metville, New York • (516) 271-6200
Santa Clara, California • (408) 985-2400
Research Triangle Park,
North Carolina • (919) 549-1400
Camas, Washington • (360) 617-5500

GREAT HOLDING INDUSTRIAL CO LTD
MR H WANG
516-13 CHUNG-CHENG RD
SHIN-CHUANG
TAIPEI HSIEN TAIWAN



Your most recent listing is shown below. Please review this information and report any inaccuracies to the UL Engineering staff member who handled your UL project.

YOPU2
Component - Extruded Tubing, Electrical

GREAT HOLDING INDUSTRIAL CO LTD
516-13 CHUNG-CHENG RD SHIN-CHUANG, TAIPEI HSIEN
TAIWAN

E156256 (S)
(A card)

Cat. No.	Max Voltage	Max Temp, C	Col Recognized	Max Temp Rated Oil Resistance*, °C	VW-1 Rated #
Polytetrafluoroethylene (PTFE).					
TFL	150	200	BL,NAT	—	Yes
TFT	300	200	BL,NAT	—	Yes
TFS	600	200	BL,NAT	—	Yes

*- Tubing is considered to comply with the optional or/resistant requirements only if so marked.
#- Tubing is considered to comply with the optional VW-1 flammability requirements only if so marked.

Report: January 25, 1994.

915930001

H3085

Underwriters Laboratories Inc.®

(Cont. on B card)
011/0247451
213

For information on placing an order for UL Listing Cards in a 3 x 5 inch card format, please refer to the enclosed ordering information.

UNDERWRITERS LABORATORIES INC.

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dedicated to public safety and
committed to quality service

Material Safety Data Sheet

I. Identification of the Substance / Preparation And Company :

Product Information : Thermoplastic Elastomer (Thermoplastic Olefins)
Product Number : T-BLEND® 9094N-DV
Information on Product / Supplier Name、Address、Phone : TSRC Corporation / 2,Hsing Kung Road ,Ta-She, Kaohsiung ,Taiwan 815, R.O.C.
Emergency Phone / Fax : 886-7-3520073 / 886-7-3520060

II. Composition / Information on Ingredients :

Single :

English Name : Thermoplastic Olefins (Thermoplastic Vulcanization Rubber)
Synonyms : T-BLEND® 9094N-DV
Chemical Abstracts Number (CAS No.) : 9003-55-8
(Percentage for Chemical Ingredient) : Non

Mixing :

Chemical Character : Stable		
Hazardous Components Name	Concentration / Percentage	Hazard Symbols
None	None	None
None	None	None

III. Hazard Identification :

Major Hazard Effect	Hazard Warnings for Health : Non hazardous
	Hazard Warnings for Environment : Avoiding spreading of the material. If spread, surface of water shall be cleaned by skimming, wasting according to the natural and local waste regulations.
	Physical And Chemical Dangerous : Flammable
	Special Harm : None
Major State : None	
Hazard Category : None	

IV. First Aid Measures :

Emergency And First Aid Procedures :
Inhalation : None
Skin Contact : None
Eye Contact : None.
Ingestion : Swallowing of small quantity is harmless. Swallowing of larger quantities will cause stomachache and diarrhoea.
Major Disease And Harm Effect : None
First-Aid Personal Protection : None
Prompt to Doctor : None

V. Fire Fighting Measure :

Suitable Extinguishing Media : Water, CO ₂ , or Powder.
Special Exposure Hazards : None
Special Extinguishing Procedure : Take away flammable material out of dangerous zone.
Special Protection Equipment : The fire brigade should be equipped with suitable overalls and self-contained breathing apparatus.

VI. Accidental Release Measures :

Personal Protection : Spilled pellets can cause accident by slipping. Pick up spilled pellets and waste it properly.
Environmental Protection : Avoiding spreading of the material. If spread, surface of water shall be cleaned by skimming, wasting according to the natural and local waste regulations.
Methods For Cleaning Up : None

VII. Handling And Storage :

Handling : It shall not be stored near to flammable materials and high temperature area for prolonged period.
Storage : Electrostatic charge should be avoided. Material shall be stored in dry and well-ventilated air.

VIII. Exposure Control / Personal Protection :

Engineering Control : None
Control Factor : • TWA / STEL / CEILING : None • Biotic Index : None
Personal Protection Equipment : • Respiratory Protection : None • Hand Protection : In case of contact with hot material, heat resistant gloves, safety glasses or face shield is required. • Eye Protection : In case of danger of contacting of material, safety glasses is required. • Skin & Body Protection : Non skidding safety shoes are required at those places, where materials possibly leak.
Hygiene Procedures : Wash thoroughly after handling.

IX. Physical And Chemical Properties / Characteristic :

Appearance : Solid	Form : Pellet
Color : Natural	Odor : Almost odorless
pH value : --	Boiling Point / Boiling Range : --
Decomposition Temperature : --	Flash Point : -- °C °F Test Method : ☐ Open Cup ☐ Close Cup
Spontaneous Temperature : --	Exposure Limits : Non
Vapor Pressure : --	Vapor Density : --
Specific Gravity : 0.93 (g/cm ³)	Solubility in Water : Not soluble

X. Stability And Reactivity :

Stability : Stable under normal conditions.
Special Conditions of Hazardous Reaction : Non
Condition to Avoid : Avoid naked flame and other ignition source.
Incompatibility : None
Hazardous Decomposition Products : CO ₂ , H ₂ O, CO, carbon, hydrocarbon.

XI. Toxicological Information :

Acute Toxicity : Not information available
Local Effects : None
Sensitive : None

Chronic : None

Exceptional Effect : None

XII. Ecological Information :

Possibility of Environmental Impact / Move : Never dump or discharge this substance into ocean or any other places to protect marine life or birds.

XIII. Disposal Information :

Disposal Information : According to local authorities' regulations .This product can be burned in permissible equipment.

XIV. Transport Information :

International Transport Regulation : It is not subject to the regulations of dangerous goods for street transportation.

The United National Number (Un-No) : None

Internal Transport Regulation : None

Special Transport Way And Note : None

XV. Regulation Information :

Apply Regulation : None

XVI. Other Information :

Reference :	None	
Make Unit :	Name : TSRC Corporation / 2,Hsing Kung Road ,Ta-She, Kaohsiung ,Taiwan 815, R.O.C.	
	Addresses / Phone : 886-7-3520073 / 886-7-3520060	
Make People :	Professional Post : Admiuistrator	Name (Sign) : Darcy Lee
Make Date :	2003/8/25	

T-BLEND[®] 9094N-DV

Thermoplastic Elastomer Technical Document

T-BLEND[®]9094N-DV is a pre-formulated and palletized general-purpose thermoplastic elastomer compound based on TPV Raw material.

It is designed for the over-molding of soft-touch elastomer components onto hard olefin thermoplastics such as PP resins. This material exhibits excellent flow properties and offers molded articles with fine texture, dry surface and excellent rubbery feeling. And it gets the matt surface similar to the TPV product.

Being a thermoplastic elastomer, T-BLEND[®]9094N-DV can be easily processed with general processing equipment and tools designed for thermoplastics and yet possess elastomeric properties at ambient temperatures.

Properties

Characteristics	Methods	Typical values
Product Form	NA	Pellets
Colour	NA	Natural
Specific Gravity	ASTM D 792	0.9
Hardness (Injection Test Piece)	ASTM D 2240	90 $\pm$ 3
Tensile Strength at Break (kg/cm ²)	ASTM D 412	97.4
Elongation at Break (%)	ASTM D 412	397
300% Modulus (kg/cm ²)	ASTM D 412	91.2
Melt Flow Index 5 kg @ 180°C	ASTM D 1238	52
Tear strength (kg/cm)	ASTM D 624	70
Rebound (%)	ASTM D1054	40.4
Akron (c.c)	B.S 903	0.09
Compression set (%) 70°C*22hrs		42

Processing Guide

T-BLEND[®]9094N-DV rubber is a versatile material and can be processed by using high shear rate injection molding methods. Stability of T-BLEND[®]9094N-DV is excellent at normal processing temperature. However should inadvertent loss of temperature control lead to decomposition the degradation products are non-corrosive. Generally, it reacts the same as other easy molding thermoplastics, such as polystyrenes. The finished parts have sharp and well-defined details.

Typical starting conditions for a reciprocating screw injection-molding machine are listed in the accompanying chart. These values are intended only as guidelines, and the optimum conditions will vary from machine to machine.

All products purchased from or supplied by TSRC CORPORATION are subject to terms and conditions set out in the sales contract, order confirmation and/or bill of lading. TSRC CORPORATION warrants only that its product will meet those specifications designated as such herein or in other publications. All other information supplied by TSRC CORPORATION is considered accurate but is furnished upon the expressed condition that the customer shall make its own assessment to determine the application. TSRC CORPORATION makes no other warranty either expressed or implied. Including the product's suitability for a particular purpose or those regarding such other information, the data upon which the same is based, or the results to be obtained from the use thereof; that any product shall be merchantable or fit for any particular purpose; or that the use of such other information or product will not infringe any patent.

TSRC CORPORATION
2 Hsing Kung Road, Ta-She,
Kaohsiung, Taiwan 815, R.O.C.
Tel : 886-7-352-0073
Fax : 886-7-352-0024
E-mail : darcy@tsrc.com.tw

T-BLEND[®] 9094N-DV

Thermoplastic Elastomer Technical Document

Typical mold shrinkage for T-BLEND[®]9094N-DV is between 0.010-0.020 inch/inch. Short cycle time can be achieved and the scrap is 20% recyclable without loss in properties.

LDPE or EVA colour concentrates can be used to colour T-BLEND[®]9094N-DV.

Suggested Processing Conditions	
Barrel temperature	
Feed	80° C
Rear	170° C
Front	180° C
Nozzle	190° C
Mold temperature	30 - 40° C
Back pressure	50 - 100 psi
Injection rate	Moderate
Cycle time	25 - 50 sec

Precaution in handling and storing

T-BLEND[®]9094N-DV rubber pellets present no unusual handling problems, thus normal procedures for handling solids that might form a dust should be followed.

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TSRC CORPORATION
2 Hsing Kung Road, Ta-She,
Kaohsiung, Taiwan 815, R.O.C.
Tel : 886-7-352-0073
Fax : 886-7-352-0024
E-mail : darcy@tsrc.com.tw



SGS Taiwan Ltd.

208, Chung Hwa 2nd Road, San
Min District Kaohsiung, Taiwan.
Tel: (07)3230920
Fax: (07)3157484

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PAGE NO. 1 OF 2
DATE. 2003/02/27

Test Report

THE FOLLOWING MERCHANDISE WAS (WERE) SUBMITTED AND IDENTIFIED BY THE CLIENT AS :

CLIENT	TSRC CORPORATION.
CARGO	TPR-9094N(B)-DV. (AS ATTACHED SAMPLE CARD).
COLOR	WHITE.
STYLE/ITEM NO.	TPR-9094N(B)-DV.
MATERIAL COMPONENT	TPR.
TESTING DATE	2003/02/20~2003/02/26.
SAMPLE RECEIVED	2003/02/20.
SAMPLE SUBMITTED BY	TSRC CORPORATION.

WE HAVE TESTED THE SAMPLE(S) SUBMITTED AS REQUESTED AND THE FOLLOWING RESULTS WERE OBTAINED.

TEST RESULT:

TEST ITEM(S)	UNIT	METHOD	DETECT. LIMIT	SPEC.	RESULT	CONCLUSION
CADMIUM	ppm	ASTM F963	0.015	<75.0	n.d.	PASS
LEAD	ppm	ASTM F963	0.020	<90.0	n.d.	PASS
MERCURY	ppm	ASTM F963	0.020	<60.0	n.d.	PASS
ARSENIC	ppm	ASTM F963	0.050	<25.0	n.d.	PASS
CHROMIUM	ppm	ASTM F963	0.025	<60.0	n.d.	PASS
BARIUM	ppm	ASTM F963	0.020	<1000	n.d.	PASS
ANTIMONY	ppm	ASTM F963	0.015	<60.0	n.d.	PASS
SELENIUM	ppm	ASTM F963	0.020	<500	n.d.	PASS
TOTAL LEAD	ppm	ASTM F963	0.020	<600	n.d.	PASS

NOTE: n.d. = not detected.

--- 1 ---


George Huang/Supervisor
Sign for and on behalf of
SGS Taiwan Ltd.

"The results shown in this test report refer only to the sample(s) tested unless otherwise stated". The report shall not be reproduced except in full, without the written approval of the laboratory. This report is issued by the Company under its General Conditions for Inspection and Testing Services, printed overleaf. The issuance of this Report does not exonerate buyers or sellers from exercising all their rights and discharging all their liabilities under the Contract of Sale. Stipulations to the contrary are not binding on the Company. The Company's responsibility under this report is limited to proven negligence and will in no case be more than ten times the amount of the fees or commission. Except by special arrangement, samples, if drawn, will not be retained by the Company for more than three months.

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Certificate of Approval

Awarded to

FULL RISE ELECTRONIC CO., LTD.

1. NO. 19-4, KAO SHAN, KAO SHUANG VILLAGE, PING CHEN CITY, TAOYUAN,

2. NO. 26, KAO CHING ROAD, KAO SHAN LI, YANG MEI, TAOYUAN,

TAIWAN, R.O.C.

*Bureau Veritas Quality International certify that the
Quality Management System of the above supplier
has been assessed and found to be in accordance
with the requirements of the quality
standards detailed below*

QUALITY STANDARDS

BS EN ISO 9001:2000

SCOPE OF SUPPLY

DESIGN, MANUFACTURE AND SUPPLY THE FOLLOWING:

- 1. PCB MODULAR JACK AND PLUGS 2. TELECOM ACCESSORIES C3, C4,
C5, C5E, C6 3. PC CONNECTORS, IEEE 1394, USB 4. SMART CARD
CONNECTORS 5. Mobile phone connectors**

Original approval date:

03 March, 1998

*Subject to the continued satisfactory operation of the supplier's
Quality Management System, this Certificate is valid for a period of three years from:*

26 July, 2001

Date: 01 August, 2001

Managing Office:
Bureau Veritas Quality International
Taiwan District
6th Fl., No. 3, Tun Hua S. Rd., Sec. 1
Taipei 105, Taiwan, R.O.C.



008

[Signature]
For Bureau Veritas Quality
International (Holding) S.A.,
2nd Floor, Tower Bridge Court
224-226 Tower Bridge Road
London SE1 2TX

Certificate No: 86005

BVQI (Holding) S.A. using UKAS accreditation covered by the accreditation certificate number 008