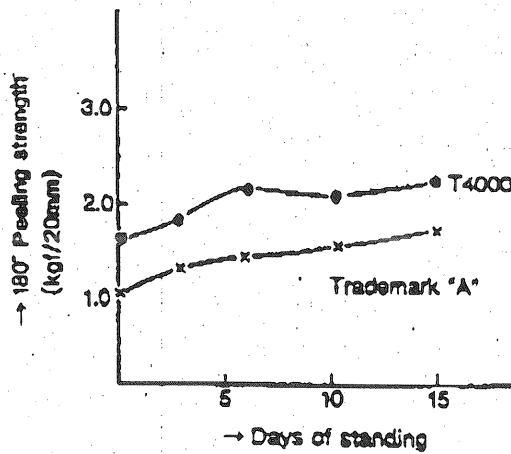


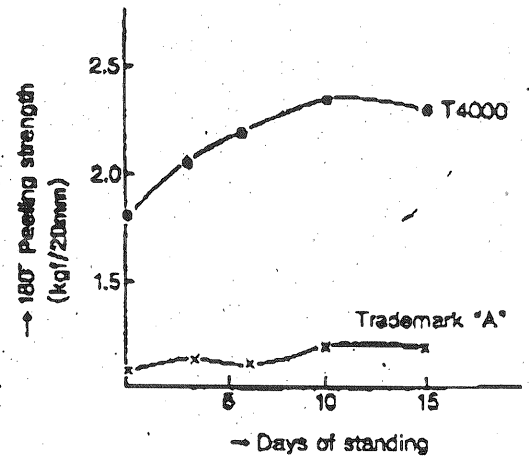
● THERMAL AGING

Standing test in the atmosphere



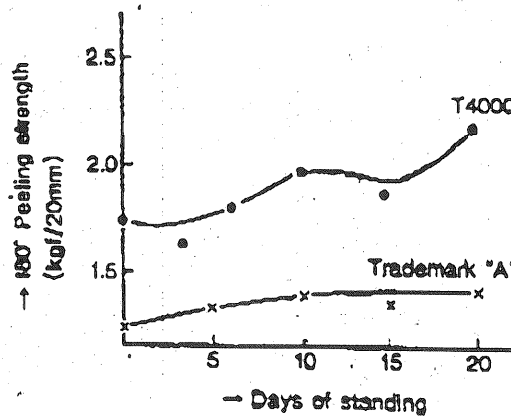
● MOISTURE RESISTANCE

Standing test in the atmosphere of 50°C and relative humidity of 90 %



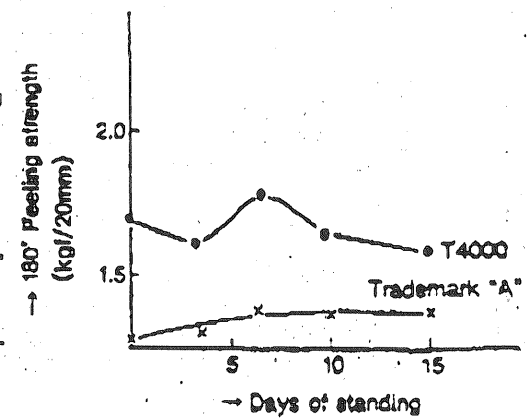
● WATER RESISTANCE

standing test in water at 40°C

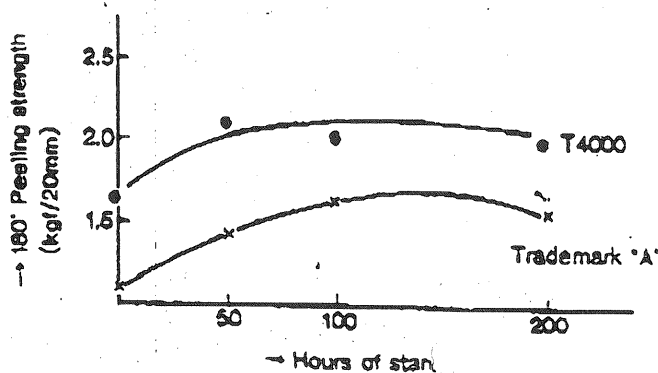


● OIL RESISTANCE

Standing test in machine oil at 40°C



● WEATHERING

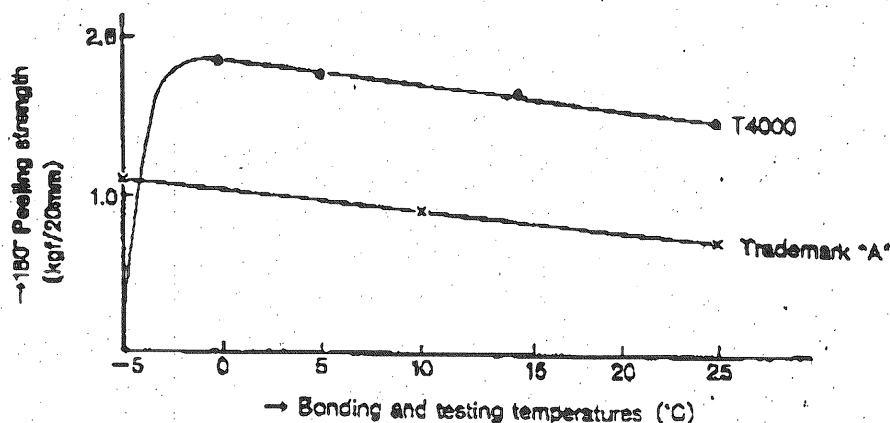


# Industrial Adhesive Tape T4000

## WORKABILITY

### Low-temperature adhesion

T4000 provides high adhesion even in the bonding work at low temperatures.



CAUTION: While this report is based on our company's reliable testing, this does not imply that the effects noted herein are guaranteed. The user is requested to use this product at his own risk after thorough study of the purposes for which the product is designed and the conditions under which it is used.

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Printed 1997.3

PGGU2

August 10, 1995

Component - Marking and Labeling System Materials - Component

SONY CHEMICALS CORP

MH15431 (M)

(B-cont from A-card)

T3500, T3500S, T3500SW, T3500W. For bonding aluminum (thickness .007 to 0.020 in), polycarbonate (thickness .019 to .079 in) and acrylic (thickness .019 to .079 in) to acrylonitrile butadiene styrene (ABS) plastic, maximum surface temperature 80 C (176 F), minimum temperature -40 C (-40 F). Suitable where exposed indoors to high humidity and occasional exposure to water.

T4000, T4000W. For bonding aluminum (thickness .007 to 0.020 in), polycarbonate (thickness .019 to .079 in) and acrylic (thickness .019 to .079 in) to acrylonitrile butadiene styrene (ABS) plastic, maximum surface temperature 80 C (176 F), minimum temperature -40 C (-40 F). Suitable where exposed indoors to high humidity and occasional exposure to water.

Reports: January 13, 1988; January 13, 1988.

Replaces MH15431B dated March 4, 1994.

663476001

Underwriters Laboratories Inc.®

[Cont on C card]

011/0226605

109

SA 規格書 1/5

# SUMITOMO ELECTRIC FINE POLYMER, INC.

910, Oaza Noda, Kumatori-cho, Sennan-gun, Osaka, 590-0451 JAPAN

Date: Dec. 24, 1999

No.: RE4-0180C

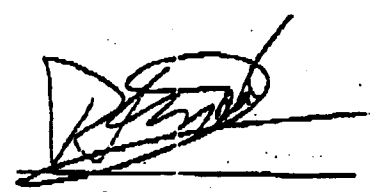
Request: SUMIPAC CORPORATION

## SPECIFICATION

FOR

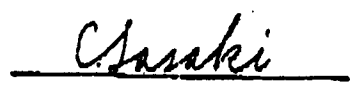
SUMITUBE A

Authorized by



J. Kishimoto  
Senior Engineer,  
Irradiated Products Group  
Engineering Department

Prepared by



C. Sasaki  
Engineer,  
Irradiated Products Group  
Engineering Department



SA規格書 2/5

RE4-0180C

SUMITUBE A SPECIFICATION1. Scope

This specification covers SUMITUBE A.

2. Feature

This product is irradiated cross-linked, thermally-stabilized, flexible polyolefin heat-shrinkable tubing.

3. Colors

Black, Brown, Red, Orange, Yellow, Green, Blue, Gray, White and Clear Colors conform to SUMITOMO's standard.

4. Sizes

Sizes are specified in Table 1.

5. Properties

Properties are specified in Table 2.

6. Test method6-1. Inside diameter

Inside diameter shall be measured by using a gage rod or a taper gage.

In case of using a gage rod---- Read the value of the maximum gage rod which passes freely into the tubing without expanding the wall of tubing.

In case of using a taper gage-- Read the value on the gage when tubing isn't expanded by insertion and there is no visible space between the end of tubing and the taper gage.

6-2. Wall thickness

Wall thickness shall be measured by a pin-dial gage or a micrometer at several points.

6-3. Shrinkable condition

Tubing shall be fully recovered at 125°C for 1 minute in an oil bath.



SA 規格書 3/5

RE4-0180C

6-4. Longitudinal change

Tubing shall be cut into about 100 mm lengths and measured.  
After full recovery, the length shall be remeasured and the  
longitudinal change shall be calculated from the following formula:

$$\text{Longitudinal change(\%)} = \frac{\text{Length after full recovery} - \text{Initial length}}{\text{Initial length}} \times 100$$

6-5. Properties

Test methods conform to JIS-C-2133.

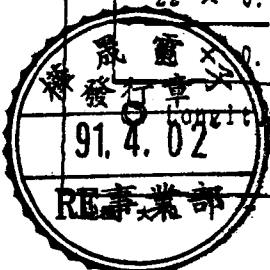


RE4-0180C

Table 1. Sizes

Trade Size [mm]	As supplied [mm]		After recovered [mm]		Standard length [m] (Min.)	
	Inside diameter	Wall thickness (Nom.)	Inside diameter (Max.)	Wall thickness	Cuts	Spool
1.5 × 1.2	2.10 ± 0.30	0.2	0.8	0.4 ± 0.1	1	200
2 × 1.2	2.60 ± 0.30	0.2	1.3	0.4 ± 0.1	1	200
2.5 × 1.2	3.10 ± 0.30	0.2	1.5	0.4 ± 0.1	1	200
3 × 1.2	3.60 ± 0.30	0.2	1.8	0.4 ± 0.1	1	200
3.5 × 1.2	4.10 ± 0.30	0.2	2.0	0.4 ± 0.1	1	100
4 × 1.2	4.60 ± 0.30	0.2	2.3	0.4 ± 0.1	1	100
5 × 1.2	5.60 ± 0.30	0.2	2.9	0.4 ± 0.1	1	50
6 × 0.25	6.5 ± 0.3	0.25	3.5	0.5 ± 0.1	1	50
7 × 0.25	7.5 ± 0.3	0.25	4.2	0.5 ± 0.1	1	50
8 × 0.25	8.5 ± 0.3	0.25	4.7	0.5 ± 0.1	1	50
9 × 0.25	9.6 ± 0.3	0.25	5.4	0.5 ± 0.1	1	50
10 × 0.25	10.5 ± 0.4	0.25	6.0	0.5 ± 0.1	1	50
11 × 0.25	11.5 ± 0.4	0.25	7.0	0.5 ± 0.1	1	50
12 × 0.3	12.4 ± 0.3	0.3	7.6	0.6 ± 0.1	1	50
13 × 0.3	13.4 ± 0.3	0.3	8.0	0.6 ± 0.1	1	50
14 × 0.3	14.4 ± 0.3	0.3	9.0	0.6 ± 0.1	1	50
15 × 0.3	15.4 ± 0.3	0.3	10.0	0.6 ± 0.1	1	50
16 × 0.3	16.4 ± 0.3	0.3	10.5	0.6 ± 0.1	1	50
18 × 0.3	18.4 ± 0.3	0.3	11.5	0.6 ± 0.1	1	50
20 × 0.3	20.4 ± 0.3	0.3	13.0	0.6 ± 0.1	1	50
22 × 0.3	22.4 ± 0.4	0.3	14.0	0.6 ± 0.1	1	50
25 × 0.3	25.5 ± 0.5	0.3	15.0	0.6 ± 0.1	1	50

Longitudinal change : -15% min.



RE4-0180C

Table. 2 Properties

Properties	Unit	Requirement
Operation Temperature range	°C	-55 ~ 105
Shrinkage Beginning temperature	°C	75
Shrinkage Finishing temperature	°C	115
Longitudinal change	%	-15 . MIN.
Dielectric Voltage Withstand	V	No break down (A.C. 2.5kV × 1 minute)
Volume resistivity	Ω·cm	10 <sup>10</sup> . MIN.
Tensile strength	MPa(kg/cm <sup>2</sup> )	10.8(1.05) . MIN.
Ultimate elongation	%	200 . MIN.

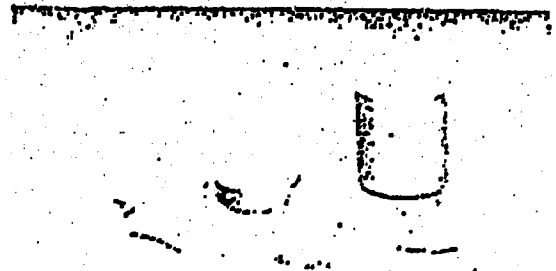
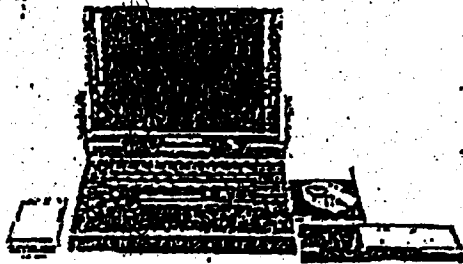




# E-FLEX CONDUCTIVE TAPE

我我我

我



The unique E-FLEX conductive Tape combines highly conductive copper and corrosion resistant nickel technology to achieve a light weight, strong, flexible, and high-tack conductive adhesive tape.

E-FLEX tape is smooth, soft-edged and non-cracking. It also provides total uniform coverage, even on uneven surfaces.

E-FLEX high quality flexible conductive Nickel/Copper(Ni/Cu) tape offers excellent surface conductivity, shielding effectiveness, and reflectivity for a variety of applications to protect against EMI/RFI.

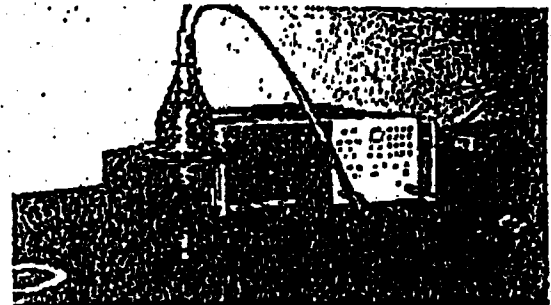
## GENERAL CHARACTERISTICS

- ① Shielding Effectiveness: At Far-field plane wave 30-2000MHz, norm value S.E. = 88dB attenuation
- ② conductivity: Surface resistance  $R_s = 0.08 \Omega / \square$ , applied with 2 kg of vertical force
- ③ Antistatic Property: Highly conductive PET providing electrostatic discharge path
- ④ Weight:  $120 \text{ g/m}^2$ . Plated Cu =  $18 \text{ g/m}^2$ . Plated Ni =  $7 \text{ g/m}^2$
- ⑤ Operating Temperature: 104-122 °F (40-50 °C) in continuous operation. Max. short exposure 401 °F (205 °C) without high-tack adhesive
- ⑥ Substrate / Metal: PET / Cu/Ni
- ⑦ Substrate metal thickness: 0.003 inches, 76.2 microns

## ADHESIVE SYSTEMS

High-tack conductive adhesive permanently bonded after four hours

- Adhesive strength  $\geq 1.1 \text{ kg}/25 \text{ mm}$
- Tensile Strength  $\geq 15 \text{ kg}/25 \text{ mm}$
- Surface resistance =  $0.2 \Omega / \text{in}^2$

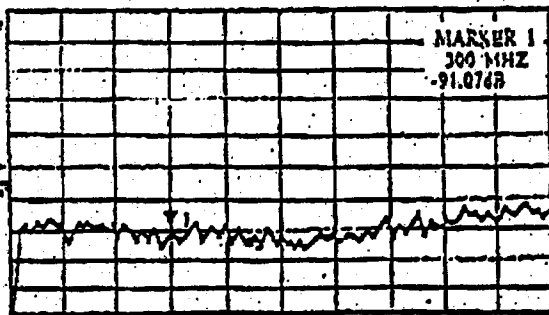


## APPLICATIONS

E-FLEX conductive tape is a direct replacement for sharp, rigid, nonconforming foil tapes. variety of applications included sealing small apertures in frames, chassis, enclosures, cable wrap, gaskets, FCC cables, tapes, curtains, shielding laminates, and grounding.

## SHIELDING EFFECTIVENESS

CHI TEN log MAG 9.95 dB / REF -70.45



START 1,000,000 MHz STOP 1,000,000,000 MHz

## PACKAGING

Material Code = ET-CH-WX-LX

WX=Width dimension by customer spec.  $\pm / \text{mm}$

LX=Length dimension by customer spec.  $\pm / \text{mm}$

含膠厚度:  $0.11 \pm 0.02 \text{ mm}$

\* Tested by UL in compliance with

UL 94 and UL 1950 Flame Test Requirements

P/N: ET-CH-XX 導電布

EE-POWER Tech USA.  
41140 Norwalk Street  
Fremont, CA 91534  
Tel: (510) 883-0100  
Fax: (510) 651-8555

**EE-POWER**  
E-POWER TECH CO. LTD.

翔雲科技有限公司  
E.E-POWER Tech Co., Ltd. TAIWAN  
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Ming Seng E. Rd., Sec. 3  
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Tel: (02) 765-3600  
Fax: (02) 765-1367

# 鉛寶科技有限公司

台北市信義路3段109-7號11F-2

Tel: (02)2702-2060

Fax: (02)2702-2070

## 1. E-FLEX 導電性布膠帶之特性表:

項 目		特 性
抗 張 強 度	kg/25mm	15.0 以上
厚 度 方 向 阻 抗	ohm /sqin	0.2 以下
黏 著 力		
儀 器	器：日本 AIKOH 拉力距	
條 件	件：25mm 寬之背膠導電布,在溫度-5°C~50°C下 施加 2 公斤之力量黏著後,每分鐘 300 mm 的回拉力下實驗,拉回 5mm 可承受之力量。	

時間/公克 材 質	初 期	1 小 時	24 小 時	48 小 時
不 銹 鋼	120 公克	400 公克	800 公克	1 公斤
PC+ 織	150 公克	200 公克	400 公克	600 公克
PVC	150 公克	300 公克	600 公克	800 公克
PET/Cu/Ni	120 公克	200 公克	400 公克	500 公克

## 2. 低溫狀況下之使用條件

膠帶於自然環境低溫狀態下必須使用時,需將膠帶回溫至室溫  
(約 20°C) 3 小時以上再行使用。

## 3. 包裝

膠帶製品以包裝紙或收縮膜包裝完成,並裝於適當之紙箱內。

## 4. 膠帶之保管及品質保證期間

膠帶應放置於陰涼處所,避免高溫高濕或日曬,以妥為保管條件下,  
品質保證期間為製造後 6 個月。

