

## Technical Data Sheet

Microwave Absorber : MS-115TK

2020/1/14

Microwave Absorbers Inc.



## 1. Scope

This TDS is applied to the Microwave Absorber MS-115TK

## 2. Materials

Absorber sheet : Carbonyl - Fe and Silicon rubber.

Double layer adhesive: No.500 of Nitto Denko

## 3. Standard Size

Size	Thickness without tape
200×200mm +2 mm	1.6mmt ± 0.1mm

The thickness of Adhesive tape No.500 is 0.17mmt

## 4. Outlook

There should not be impurities, abrasion, and through hole as below chart

Standard	Judgement
1. Size : < 1mm φ Numbers : < 12 pieces / sheet	OK
2. Size : 1 mm φ < < 2mm φ Numbers : < 6 pieces/sheet	
3. Size : 2 mm φ < < 3mm φ Numbers : < 3 pieces/sheet	
4. Size : 3 mm φ <	No good

## 5. Features

Rubber Sheet which absorbs Microwave

## 6. Operation temperature and stock temperature

Operation temperature : From -40 °C to 80 °C

Stock temperature : From -40 °C to 80 °C (after installation)

## 7. Test items

Item	Numbers of test pieces
Absorb Performance	N = 3 / Lot of sheet manufacture*
Gravity	N = 3 / Lot of sheet manufacture
Thickness	N = 13 / Lot of sheet manufacture
Size	N = 13 / Lot of sheet manufacture

\*Lot of Sheet manufacture means the same kind of sheets continuously manufactured by the same material lot and with the same machine.

## 8.Mecanical Data

Item		Unit	Data	Test Method
Hardness (Durometer #A)		—	60 ± 5	JIS K 6253
Gravity		—	2.9 ± 0.1	JIS Z 8807
Absorb Performance (11.5 GHz)		dB	< -15	Free Space NRL arch method
Tape Adhesive Strength		N/10mm	4 <	JIS Z 0237, 1528
Resistivity	Volume	$\Omega \cdot \text{cm}^3$	$10^{10} <$	O-ring method
	Surface	$\Omega$	$10^7 <$	

## 9.Environment Test

## Environment test conditions

Item	Conditions
Heat	100 ° C * 1000 h
Cold	-40 ° C * 1000 h
Humidity	85 ° C , 85% RH * 1000 h
Cycle	-40° C *30 min. , 85 ° C * 30 min. 1000 cycles

## Test item after environment test conditions

Item		Unit	Data	Test methd
Absorb Performance (20 GHz)		dB	< -15	Free Space NRL arch method
Tape Adhesive Strength		N/10mm	4 <	JIS Z 0237, 1528
Resistivity	Volume	$\Omega \cdot \text{cm}^3$	$10^{10} <$	O-ring method
	Surface	$\Omega$	$10^7 <$	

## Test results

Item	Absorb Performance (11.5 GHz)	Volume Resistivity	Surface Resistivity	Tape Adhesive Strength
Unit	dB	$\Omega \cdot \text{cm}^3$	$\Omega$	N/10mm
-	-19.5	$4.85 \times 10^{15}$	Over*	7.1
Heat	-19.8	$3.59 \times 10^{14}$	$3.59 \times 10^{15}$	6.2
Cold	-19.9	$4.87 \times 10^{15}$	Over*	4.1
Humidity	-19.5	$4.21 \times 10^{15}$	Over*	5.6
Cycle	-19.9	$6.61 \times 10^{15}$	Over*	4.8

\* "Over" means over limit measurement =  $10^{15} \Omega <$

#### 10.Storage

- 1) Products should be stored indoors under following conditions ;  
Temperature -10 ° C to + 40 ° C, relative humidity 30 to 70%.,  
refraining from being exposed to direct sunlight, heat, rain, vibration, etc.,  
and also sudden changes in temperature and humidity during storage.
- 2) The storage period shall be 6 months from the date of shipment inspection.  
If it exceeds 6 months, Please check the adhesiveness of tape.

#### 11. Others

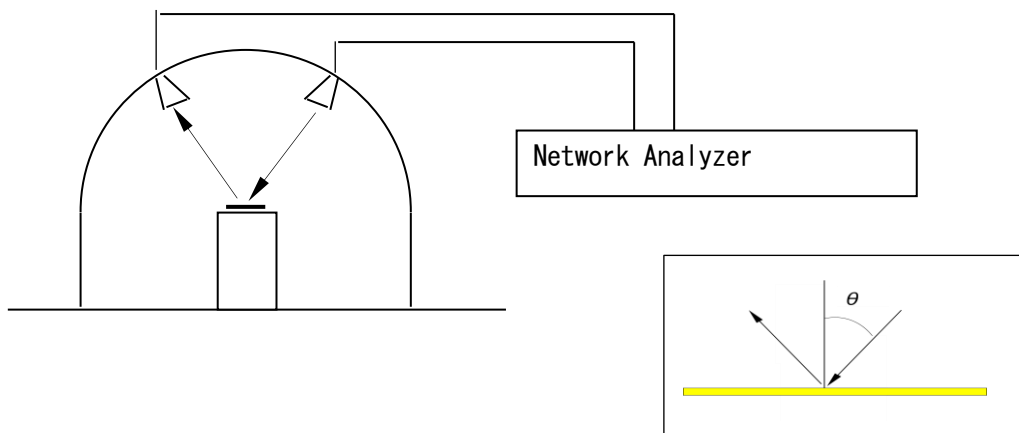
ODS (ozone depleting substance) is not used in the manufacturing process of this product.  
In addition, if a problem occurs, or if the process, specifications, production location, etc. change,  
we will deal with it after mutual consultation.

## Appendix 1: Absorb performance test

## 1) Measurement Method

Location : Anechoic Chamber of National Defense Academy  
Absorber : MS-115TK  
Antenna : Guide Horn Antenna (Horizontal)  
Network Analyzer : WILTRON360  
Method : NRL free space Arch measurement method

## 2) Measurement Chart



## 3) Result : 30°

