

ELECTROCONDUCTIVES

DOTITE XO-9053

**Under
Development**

1. Product Introduction

- Magnetic filter paint designed for improving **UHF band (860 ~ 960MHz)** RFID tag readability in environments with **metal or water**.
- By reducing the thickness of the magnetic layer, thinner tags can be made, allowing the use of specialized IC tag encoding label printers, greatly reducing the necessary time and effort for encoding in production.
- Utilizes a special soft magnetic, flake-shaped powder in high concentration which is aligned in resin binder to allow high RFID transmission to be realized.
- Single component - dries at room temperature, making it easy to form magnetic films.
- Can also be supplied as a printed sheet.

2. Specifications

		XO-9053	Remarks
Composition		<ul style="list-style-type: none"> •Special soft magnetic flake powder •Polyurethane resin 	—
Storage		Room temperature	—
Appearance		Grey liquid	—
Viscosity		40dPa·s	DSTM-201 No.4 rotor, 60rpm at 23°C
Non-Volatile Content		65.0%	DSTM-302
Recommended Thinner		DOTITE 884 Thinner	—
Application Method		Spray, coater, roller, brush, dipping, etc.	—
Drying	Natural	25°C, 1 hr. (dry to touch at 5 ~ 10 mins.)	—
	Forced	50°C, 30 mins.	Forced convection oven
Recommended Film Thickness		200µm or thicker	—

※ This DOTITE product is under development and the above values may be subject to change.

ELECTROCONDUCTIVES

DOTITE XO-9053

**Under
Development**

3. Characteristics

Dried Film Characteristics (50°C, 30 Mins. Forced Drying)			
Adhesion	Good	ABS, polycarbonate, polystyrene, etc.	DSTM-401 (1 layers of adhesive tape)
	Poor	Resins other than those listed above, glass, metal, etc.	
Magnetic Characteristics (920MHz)		$\mu_r' = 3.7$ $\mu_r'' = 0.8$ $\tan\delta = 0.2$	Complex permeability measured by Agilent E4991A RF Impedance/Material Analyzer
Insulating Resistance		$1 \times 10^8 \Omega/\square$ or higher (200 μm)	HIOKI Digital Megohmmeter DSM-8104 at DC10V
Pyrolysis	1% Loss	235°C	SII TG/DTA6200
	3% Loss	275°C	
	5% Loss	295°C	

4. Instructions and Warnings

- Keep this DOTITE product away from open flames.
- Apply this coating to a clean substrate.
- This DOTITE product utilizes a metallic filler with an especially high density. Before use, mix thoroughly until the filler is evenly distributed. If it is not sufficiently mixed before use, performance may be negatively affected.
- Reseal after use and store in a cool, dark place.
- Recommended drying conditions are listed above. However, environmental factors, or film thickness may affect the drying process. It is recommended that drying conditions be confirmed on-site before use.
- For other handling and safety information, please refer to the SDS documentation for this product.
- This product may be subject to export restrictions depending on the country in which the recipient is located. Please confirm with Fujikura Kasei that this product can be shipped to your country.

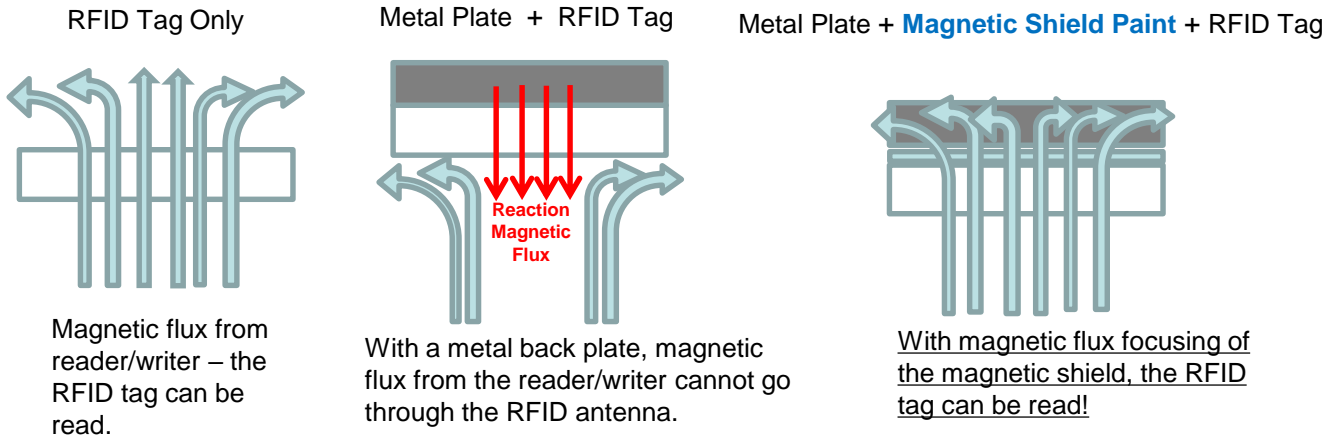
The above data are derived from tests conducted by Fujikura Kasei under lab conditions and do not represent this product's properties in all environments. We recommend that the curing conditions, cured film properties, safety precautions, overall applicability for the user's intended purpose, and other factors be confirmed on-site before use.

ELECTROCONDUCTIVES

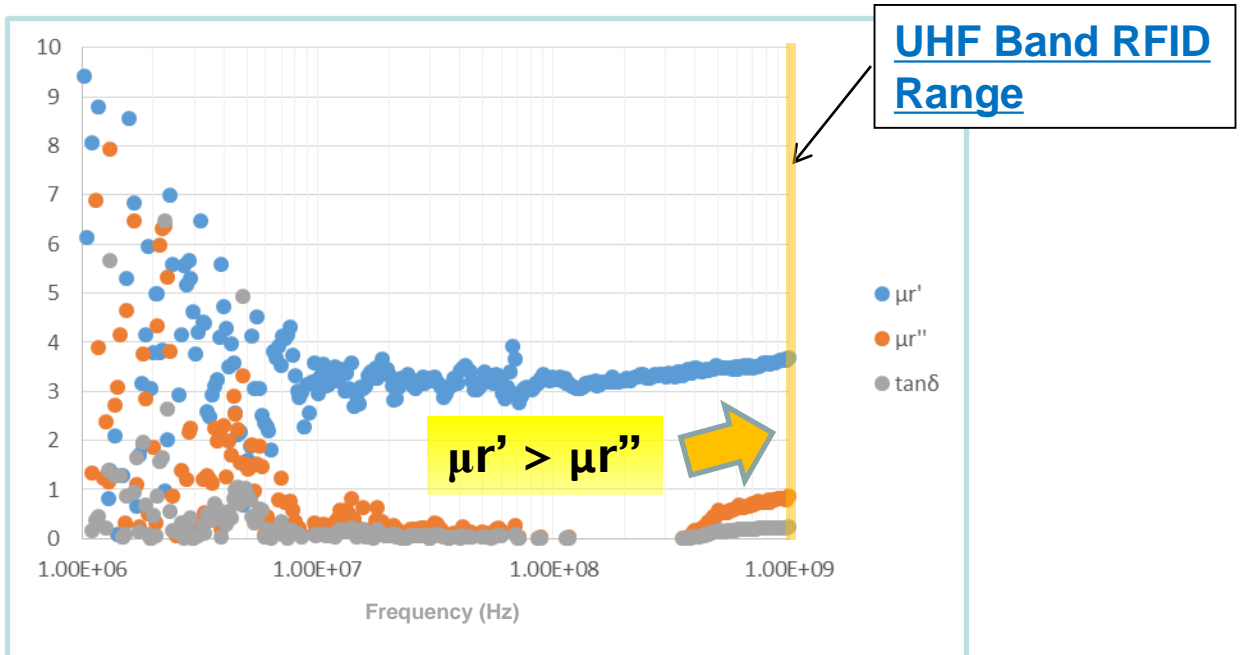
DOTITE XO-9053

**Under
Development**

Magnetic Shield for RFID Tag – Magnetic Flux Focusing Effect



Complex Magnetic Permeability Graph



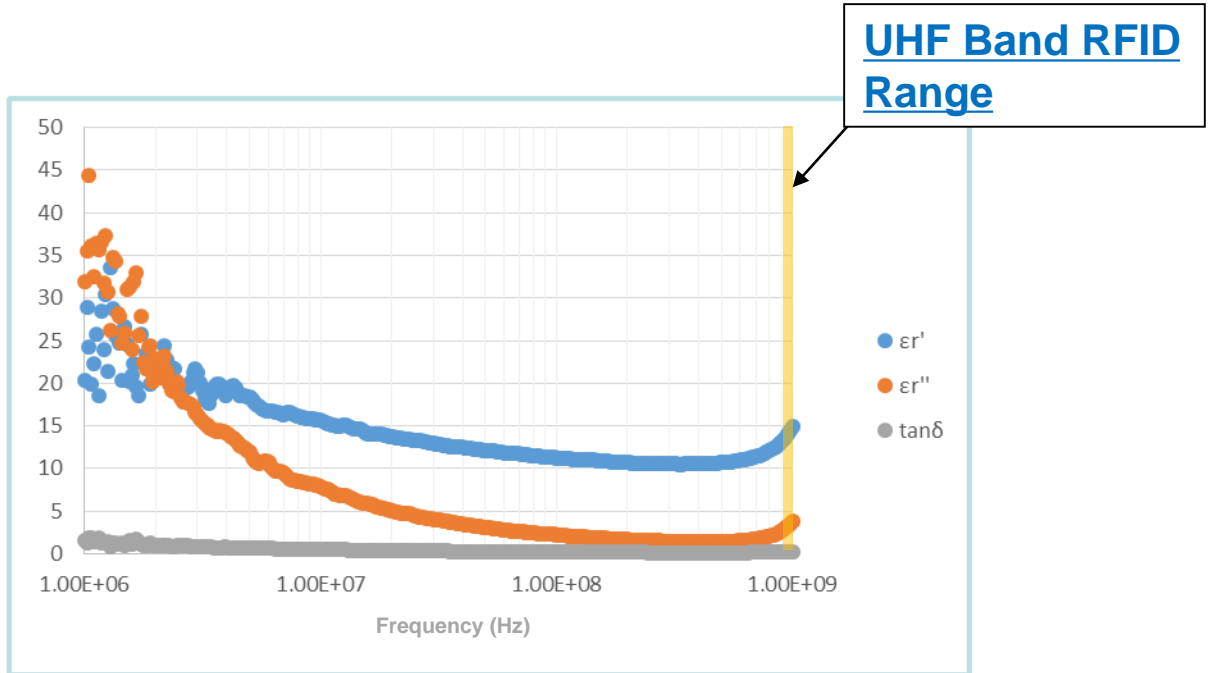
Complex permeability measured by Agilent E4991A RF Impedance/Material Analyzer

ELECTROCONDUCTIVES

DOTITE XO-9053

**Under
Development**

Complex Magnetic Permittivity Graph



Complex permittivity measured by
Agilent E4991A RF Impedance/Material Analyzer