

JD1HTE RD1HTE JD1

Zinc-free Copper Foil Treatments

- Compatible to acidic chemistry in electroless NiAu process
- Fine nodularized treatment increases mechanical adhesion
- Reverse treatment with very low profile high frequency applications
- JD1 especially designed for PTFE laminates

Overview

JD1HTE, Grade 3

combines the advantage of the acclaimed HTE-grade 3 copper foil with a zinc-free treatment to prevent any acid undercut in NiAu plating processes. High bond to most of resin systems is maintained by GOULD's zinc-free treatment technology. JD1HTE is recommended for application on high frequency prepregs like PTFE, epoxy-aramide or multifunctional epoxies. Available also as JD1HTEVLP.

RD1HTE, Grade 3

is designed for special applications that require lowest treatment roughness (very low profile) on smart cards, high layer count multilayers, or PTFE laminates. Available also as RD1HTEVLP with very low profile on both sides.

JD1, Grade 1

is used for PTFE laminates, also available as reverse a treated RD1.

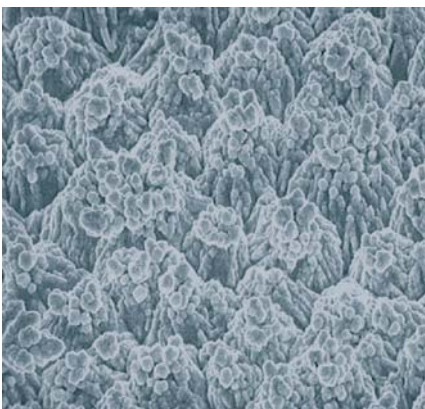
Advantages

■ Zinc-free Treatment

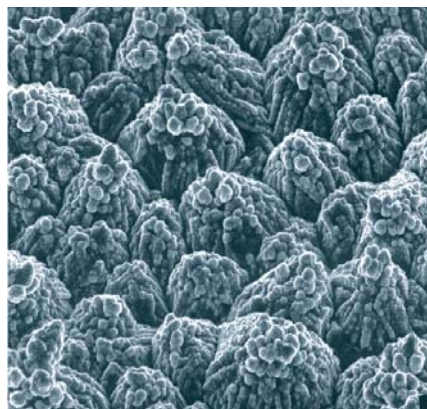
is Nickel Gold compatible. Acidic chemistry in electroless NiAu processes can undercut the zinc layer underneath fine lines, hence reduce contact area (acid undercut) and peel strength.

■ High Peel Strength and Reliability in Electroless NiAu Process

The fine nodulized D1 treatment (more metallic than oxidic copper) guarantees optimal mechanical and chemical bond.



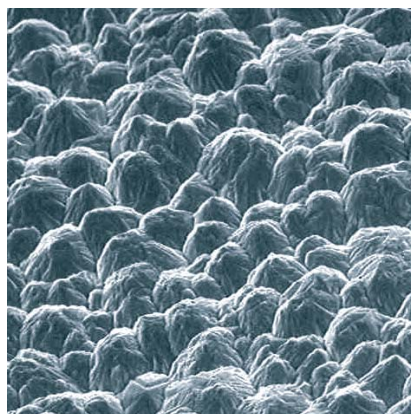
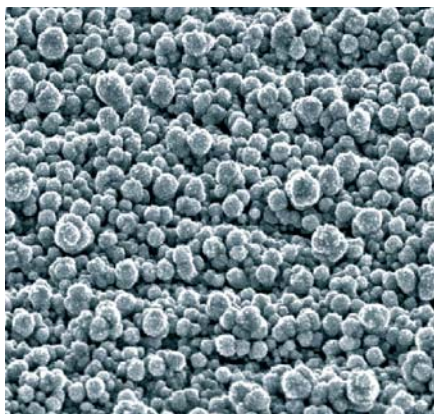
JD1HTE-35 μm, Grade 3



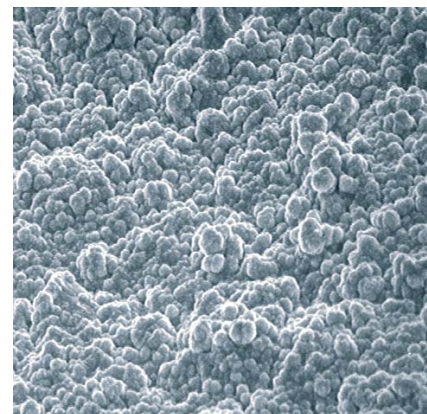
JD1HTE-35 μm, Grade 1

■ Thin Laminate and High Frequency Application

High layer count PCBs in mobile phones or applications in smart cards/labels require thin foils with low treatment roughness. RD1HTE is drum side treated with a fine nodularized zinc-free copper treatment which benefits fine line etching and impedance control.



Treated drum side and untreated matte side, both RD1HTE-35 μm



Untreated matte side RD1HTEVLP-35 μm

Specifications

Properties are in accordance with IPC-4562 and other international standards.

Typical Mechanical Properties:

Property	Unit	JD1HTE-Grade 3			RD1HTE-Grade 3			JD1-Grade 1		
		12 μm	18 μm	35 μm	12 μm	18 μm	35 μm	18 μm	35 μm	70 μm
Area weight	g/m ²	105	155	285	105	155	285	155	285	570
Tensile strength	N/mm ²	> 320	> 320	> 300	> 320	> 320	> 300	> 320	> 300	> 290
Elongation	%	> 3	> 4	> 10	> 3	> 4	> 10	> 3	> 4	> 7
Elongation 180°C	%	> 2	> 3	> 4	> 2	> 3	> 4	--	--	--
Peel strength FR4-T _G 140	N/mm	> 1.05 ¹⁾	> 1.18 ¹⁾	> 1.69	> 1.05 ¹⁾	> 1.10 ¹⁾	> 1.42	> 1.33 ¹⁾	> 1.80	> 2.40
Shiny side, R _a	μm	< 0.43	< 0.43	< 0.43	2.5...4	3.3...5	4...6	< 0.43	< 0.43	< 0.43
Matte side, R _Z	μm	3...5.5	4...7	5...8	< 5.1 ²⁾	< 5.1 ²⁾	< 5.1 ²⁾	4...7	5...8	6...10

¹⁾ Without plating up ²⁾ Treated drum side

Supply

JD1HTE, RD1HTE and JD1foils are routinely available in continuous rolls and sheeted formats. Roll products can be supplied in a variety of widths and thicknesses from 12 μm (0.375 oz/ft²) to 210 μm (6 oz/ft²). Products are supplied on cardboard cores with an ID of ~ 79 mm (3 1/8") or 152 mm (6").

GOULD Electronics is part of the Nikko Materials group. The company is a leading supplier of materials to the electronics industry.



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