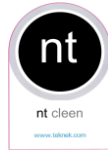


Rubber Roller Data Sheet

Cleaning Efficiency					
	NT™	Nanoclean™ 20.20	UTF	Panel	Comments
PPU Roller g/m2	128	130	127	118	Particle Pick Up test
Particle Size Range	0.1µm to 4mm	20nm to 3mm	0.5µm to 5mm	0.5µm to 5mm	Can be larger or smaller depending on particle type
PPU Test protocol	8-10µm Tungsten	8-10µm Tungsten	8-10µm Tungsten	8-10µm Tungsten	Calibrated Tungsten powder

Cleaning Rollers

	NT™	Nanoclean™ 20.20	UTF	Panel	Comments
Compliance	ANSI/ESD s20.20-2014	ANSI/ESD s20.20-2014	ISO 6123 Class A	ISO 6123 Class A	International ESD standards
Base material	Silicone	Urethane	Silicone	Silicone	Chemical Formulations are unique to Teknek
Shore A	50 A +/-5	55 A +/-5	30 A +/- 5	30 A +/- 5	
Roughness	Ra6	Ra 5	Ra 7	Ra 1.5	Teknek's unique surface modification process
Straightness	0.1mm/m	0.1mm/m	0.1mm/m	0.1mm/m	ISO
Manufacturing Standard	ISO 6123 Class A	ISO 6123 Class A	ISO 6123 Class A	ISO 6123 Class A	ISO
COO	UK	UK	UK	UK	
Max Temp	225 °C	125 °C	225 °C	225 °C	
Traceability	100%	100%	100%	100%	All parts and all processes are tracked
Patent No	Patent Applied for	WO 2010035043	N/A	N/A	
Thin Film capability	< 50 µm	50 µm	<50 µm	rigid products only	Based on sheets running at a set speed
Leaching / bleeding	None	None	None	None	Checked using FTIR
Abrasive Resistance	< 0.01	0.04	0.04	0.02	Taber Test ISO 5470-1
Surface Resistance	< 1 x 10 ⁹ Ω	< 1 x 10 ⁹ Ω	Insulator	Insulator	>1 x 10 ⁶ Ω and < 1 x 10 ⁹ Ω Complies with ANSI/ESD s20.20-2014



Roller Chemical Resistance

Immersion (7 days)					
	NT™	Nanoclean 20.20	UTF	Panel	Comments
Water	No change	No change	No Change	No Change	
IPA	No change	Minor Change	No change	No change	Only use pre soaked Tekwipes during roller maintenance
DiPropylene Glycol	No change	Poor Resistance	No Change	No Change	
Paraffin	No Change	No Change	No Change	No Change	
5% Sulphuric Acid	No Change	No change	No change	No change	

Independent testing

	Test	Company	Location	Comments
	Method	Company	Laboratory	
1	EDx		Paisley University	UK
2	FTIR		Paisley University	UK
3	RGA		Holst Inst	Testing inside a vacuum chamber
4	ROHS Compliance	SGS	Hong Kong	Rohs Compliance testing
5	GC-MS	Intertek MSG	UK	Gas chromatography and mass spectral detection on the LIMS 2059 Agilent
6	Halogen compliance	SGS	HK	

Definitions

EDx	Energy-dispersive X-ray spectroscopy	http://en.wikipedia.org/wiki/Energy-dispersive_X-ray_spectroscopy
FTIR	Fourier transform infrared spectroscopy	http://en.wikipedia.org/wiki/Fourier_transform_infrared_spectroscopy
RGA	Residual Gas Analyser	http://en.wikipedia.org/wiki/Residual_gas_analyzer
	Taber Testing	https://en.wikipedia.org/wiki/Wear#Testing_and_Evaluation
	FINAT - Self Adhesive Test and Handling Standards	https://www.finat.com

Overview of Laboratory Equipment

Olympus BX53 Microscope	
Partsens Particle Counter	
Taber abrader	
Charge Analyser (Simco)	
Trek 152-1 Surface Resistance meter	
Suretronic Due Surface Roughness gauge	
Bruker Alpha FTIR	
Instron Tensile Tester	
Chemstruments Dynamic Shear Tester	
Electro Static field meter 004 FX (Simco)	
Param RT-01 Rub Tester	Used to carry out Sutherland Rub Test