



PACTUMAX

INTERNATIONAL PTE LTD

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Welcome to our new issue of Pactumax Monthly Advanced Product Alert for the Year 2022 – keeping you informed of new product and materials advancements.

This month's featured items are **Semitron® ESD 500HR** and **Tivar® 1000 (UHMW-PE)**.

Semitron® ESD 500HR with Polytetrafluoroethylene (PTFE) is an electrostatic dissipative plastic that possesses excellent low frictional properties, incredible dimensional stability and a surface resistivity of 10^{10} – 10^{12} ohm/sq.

Tivar® 1000 (UHMW-PE) is an Ultra-High Molecular Weight Polyethylene plastic that is made up of a well-balance property profile comprising of a low surface friction, resistance to wear and corrosion and excellent impact strength.

Remember, Pactumax is **GROWING** – we are now your **One-Stop Source** for all your materials and products' needs!

ADVANCED PRODUCT ALERT OF THE MONTH

SEMITRON® ESD 500HR

Manufactured by



PRODUCT OVERVIEW

Semitron® ESD 500HR with Polytetrafluoroethylene (PTFE) is an electrostatic dissipative plastic that possesses excellent low frictional properties, incredible dimensional stability and a surface resistivity of $10^{10} - 10^{12}$ ohm/sq.

Semitron® ESD 500HR is reinforced with a proprietary synthetic mica which thermally stabilize temperatures up to 500° F / 260° C without showing any signs of degradation. Other features include a low coefficient of friction as well as a high thermal insulation. Applications include controlled bleed off of static charges, integrated circuit, hard disk drives, etc.

Semitron® ESD 500HR



PRODUCT COLORS

- White

ADVANTAGES

- Thermally Stable to Temperatures of 500 °F (260 °C) without degradation
- High Thermal Insulation
- Low coefficient of Friction

APPLICATIONS

- Integrated Circuits
- Hard Disk Drives
- Wafer Combs
- Boat Inserts
- Wear Guides
- Vacuum Wand Tips
- Thermal Isolators
- Handling Toys
- Retaining Rings
- Vacuum Wand

TYPICAL PROPERTIES OF SEMITRON® ESD 500HR

General Properties	ASTM or UL TEST	SEMITRON® ESD 500HR Typical Values
PHYSICAL		
Specific Gravity (g/cm ³)	D792	2.3
Water Absorption, 24 hrs (%)	D570	0.03
MECHANICAL		
Tensile Strength (psi)	D638	1,500
Tensile Modulus (psi)	D638	250,000
Tensile Elongation at Break (%)	D638	50
Flexural Strength (psi)	D790	2,200
Flexural Modulus (psi)	D790	350,000
Compressive Strength (psi)	D695	3,800
Hardness, Rockwell	D785	R50
IZOD Notched Impact (ft-lb/in)	D256	1
THERMAL		
Coeff. of Thermal Expansion (x10 ⁻⁵ in./in./°F)	E831	5.7
Heat Deflection Temp (°F/ °C) @ 264 psi	D648	210/99
Melting Temp (°F/°C)	D3418	621/327
Max Operating Temp (°F/ °C)	-	500/260
Thermal Conductivity (BTU-in/ft ² -hr- °F)	F433	-
Flammability Rating	UL94	V-O
ELECTRICAL		
Surface Resistivity (ohm/sq)	ANSI/ ESD STM 11.11	10 ¹⁰ – 10 ¹²
Volume Resistivity (ohm-cm) at 50% RH	IEC 60093	10 ¹⁰ – 10 ¹²
Dielectric Constant at 1 MHz	D150	3.08

TIVAR® 1000 (UHMW-PE)

Manufactured by



PRODUCT OVERVIEW

Tivar® 1000 (UHMW-PE) is an Ultra-High Molecular Weight Polyethylene plastic that is made up of a well-balance property profile comprising of a low surface friction, resistance to wear and corrosion and excellent impact strength.

Tivar® 1000 (UHMW-PE) is self-lubricating grade of plastic that sets the standard for engineered polymers and it is commonly used in industrial applications. Applications include gear, rollers, paddles, bearing, etc.

TIVAR® 1000 (UHMW-PE)



PRODUCT COLORS

- White
- Black

ADVANTAGES

- Long-wearing
- High Impact Strength
- Light in Weight
- Self-lubricating
- Abrasion and Corrosion Resistant

APPLICATIONS

- Dock Bumpers
- Protective Linings
- Conveyor Parts
- Bottling Wheels
- Bushings and Bearings
- Machined Parts
- Wear Strips
- Many Other

TYPICAL PROPERTIES OF TIVAR® 1000 (UHMW-PE)

General Properties	Test Method or UL Test	TIVAR® 1000 (UHMW-PE) Typical Values
PHYSICAL		
Density (g/cm ³)	D792	0.93
Water Absorption, 24 hrs (%)	D570	< 0.1
MECHANICAL		
Tensile Strength (psi)	D638	5,800
Tensile Modulus (psi)	D638	80,000
Tensile Elongation at Break (%)	D638	300
Flexural Strength (psi)	D790	3,500
Flexural Modulus (psi)	D790	87,000
Hardness, Shore D	D2240	66
IZOD No-ched Impact (ft-lb/in)	D256	No Break
THERMAL		
Coeff. of Thermal Expansion (x10 ⁻⁵ in./in./°F)	E831	11
Heat Deflection Temp (°F/ °C) @ 264 psi	D648	116/47
Glass Transition Temp (°F/ °C)	D3418	-
Max Operating Temp (°F/ °C)	-	180/82
Thermal Conductivity (BTU-in/ft ² -hr- °F)	-	2.84
Flammability Rating	UL94	HB
ELECTRICAL		
Surface Resistivity (ohm/sq)	ANSI/ ESD STM 11.11	> 10 ¹²
Volume Resistivity (ohm-cm) at 73 °F, 50% RH	IEC 60093	> 10 ¹⁴

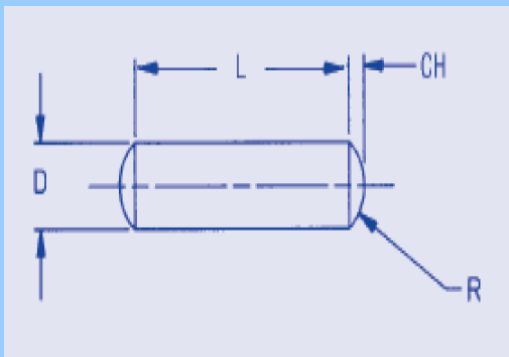
DOWEL PINS - METRIC - PRESS FIT

Manufactured by



Nordex, incorporated in 1960, designed and manufactured surface mount technology assembly equipment. In 1975, the product line was modified for the manufacture of miniature precision electro-mechanical parts and assemblies. Today, our focus is on fully integrated turnkey subsystems for the medical, laboratory and industrial analytical instruments, factory automation, power transmission, robotics, defense, aerospace and semi-conductor OEM industries.

DOWEL PINS - METRIC - PRESS FIT



- L = Length
- CH = Chamfer
- D = Diameter
- R = Radius

Material: Stainless Steel A1(18-8).

Diameter Tolerance: (0 to 3mm +,002 / +,008) (4 to 6mm +,004 / +,012) (7 to 10mm +,006 / +,015)

Diameters: 1 - 10mm

Lengths: 4 - 50mm

Dimensions in millimeters

DOWEL PINS - METRIC - PRESS FIT is designed to have a slightly larger tolerance which will be fitted into a hole slightly smaller than the pin diameter. This is to limit the overall movement of the pins during securing and assembling. **DOWEL PINS - METRIC - PRESS FIT** are mainly used in applications which involves precise and intricate assemblies.

FINE SCREWDRIVER SET PICOFINISH®

Manufactured by



Wiha seeks to make daily life much easier for users with a product assortment of innovative hand tool solutions geared towards user needs. This is why Wiha develops, designs and manufactures products that meet the strictest requirements for quality, functionality, durability and ergonomic design. As a trusted, strategic partner of specialist retailers, Wiha offers a wide range of quality products for the professional segment.

Fine screwdriver set PicoFinish®



PicoFinish® fine screwdrivers are designed to have long handles that are slim and has quick-turning zone. These features can assist the user to deal with precise screw fastenings which is hard to handle on a work piece.

PicoFinish® fine screwdrivers are ideal for model building enthusiasts that require precision assembling. The handle is incorporated with a soft zone and an ergonomic design that brings comfort to the hands of the user during assembly of the model parts.

PicoFinish® fine screwdrivers had a smooth-running rotating cap made on top to allow users to perform the turning job quickly and effectively. In addition, screwdriver symbols are printed on the rotating cap of the **PicoFinish® fine screwdrivers** which will allow easier identification of the correct screwdriver before use. **Fine screwdriver set PicoFinish®** has a total of 7 **PicoFinish® fine screwdrivers**.

For more information on our products and availability, please do not hesitate to contact our nearest Pactumax International office, or e-mail us at sales@pactumax.com. We look forward to hearing from you!

Highlights from the next issue of Pactumax Monthly Advanced Product Alert – Torlon 4203 and Teflon (Natural/CA25/GF25). CL-2-JFL Jig Feet Leveling (Carr Lane) and L-key set in ErgoStar holder (wiha). Stay tuned!