



**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 **Duratron® CU60 PBI** and **MC501CD R2/R6/R9**.

**Duratron® CU60 PBI** is the best performing engineering thermoplastic in the market today due to its remarkable engineering properties. At a temperature over 400°F (205°C), it has the highest heat resistance and mechanical retention properties among any unfilled plastic.

**MC501CD R2/R6/R9** has high mechanical strength, excellent wear and chemical resistance.

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

# ADVANCED PRODUCT ALERT OF THE MONTH

## Duratron® CU60 PBI

Manufactured by



### PRODUCT OVERVIEW

**Duratron® CU60 PBI** possesses remarkable engineering properties that hallmarks it as the best performing engineering thermoplastics that is available to the market today. Its heat resistance and mechanical retention properties remains the highest among any unfilled plastic over a temperature of 400°F (205°C). Furthermore, its load carrying capabilities and wear resistance properties at very high temperatures are unmatched in the market as compared to other reinforced or unreinforced plastic.

**Duratron® CU60 PBI** is an unreinforced plastic material that has very clean ionic impurity and does not possess the ability to outgas with the exception of water. These features are very applicable to semiconductor industries that requires vacuum chamber applications. In addition, **Duratron® CU60 PBI** is a popular choice among the ultrasonic measuring equipment industries as the material has excellent ultrasonic transparency which makes it the perfect choice to manufacture parts such as probe tip lenses.

Lastly, **Duratron® CU60 PBI** has excellent thermal insulating properties. When other plastics melt, it does not affect the surface integrity of the **Duratron® CU60 PBI** plastic as it does not stick. All these features are suitable for plastic production and molding equipment industries that manufactures products such as insulator bushings and contact seal.

## DURATRON® CU60 PBI



## PRODUCT COLORS

- Black

## ADVANTAGES

- **Duratron® CU60 PBI** is the highest performing engineering plastic currently available
- Offers the Highest Heat Resistance (Does not Melt) and Mechanical Property Retention over 400°F (205°C) of any unfilled plastic
- Good Wear Resistance and Load Carrying Capabilities at extreme temperatures than any other reinforced or unreinforced engineering plastic

## APPLICATIONS

- Wafer Retaining Rings for Gas Plasma Etching
- Vacuum Tips
- Wafer Carriers
- Contact Seals
- Insulator Bushings
- Thermal Isolators
- Guide Rollers

**TYPICAL PROPERTIES OF DURATRON® CU60 PBI**

<b>General Properties</b>	<b>ASTM or UL TEST</b>	<b>Duratron® CU60 PBI Typical Values</b>
<b>PHYSICAL</b>		
Specific Gravity (g/cm <sup>3</sup> )	D792	1.3
Water Absorption, 24hrs (%)	D570	0.4
<b>MECHANICAL</b>		
Tensile Strength (psi)	D638	16,000
Tensile Modulus (psi)	D638	850,000
Tensile Elongation at Break (%)	D638	2
Flexural Strength (psi)	D790	32,000
Flexural Modulus (psi)	D790	950,000
Compressive Strength (psi)	D695	50,000
Hardness Rockwell	D785	E120
IZOD Notched Impact (ft-lb /in)	D256	0.5
<b>THERMAL</b>		
Coefficient of Thermal Expansion (x 10 <sup>-5</sup> in./in./°F)	E831	1.3
Heat Deflection Temp (°F/ °C) @ 264 psi	D648	800 / 427
Glass Transition Temp (°F / °C)	D3418	775 / 413
Max Operating Temp (°F / °C)	-	600 / 316
Thermal Conductivity (BTU-in / ft <sup>2</sup> -hr- °F)	F433	2.8
Flammability Rating	UL-94	V-0
<b>ELECTRICAL</b>		
Dielectric Strength (V /mil) short time	D149	550
Dielectric Constant at 1 MHz	D150	3.2
Dissipation Factor at 1 MHz	D150	0.003
Surface Resistivity (ohm /sq) at 50% RH	EOS/ESD S11.11	>10 <sup>13</sup>
Volume Resistivity	IEC 60093	>10 <sup>14</sup>

# MC501CD R2/R6/R9

Manufactured by



## PRODUCT OVERVIEW

MC501CD R2/R6/R9 has high mechanical strength, excellent wear and chemical resistance.

### MC501CD R2 (Electro Conductive Grade):

Low resistance (Volume Specific Resistance  $1 \sim 10^2$  Ohm.m), Uniformed performance and Stable resistance.

### MC501CD R6 (Antistatic Grade):

Low resistance (Volume Resistivity  $10^4$  to  $10^6$  Ohm.m), Uniformed performance and Stable resistance.

### MC501CD R9 (Antistatic, Heat-resistant Grade):

Heat Resistance (150 °C), Antistatic Property ( $10^6$  to  $10^8$  Ohm.m), Reduce particle generation, Mechanical properties

MC501CD R2/R6/R9 is mainly used in Disk Drive Assembly, Semiconductor, Telecommunication Hardware, etc.

## MC501CD R2/R6/R9



## PRODUCT COLORS

- Black

## ADVANTAGES

- High Mechanical Strength
- Excellent Wear Resistance
- Chemical Resistance

## APPLICATIONS

- Disk Drive Assembly Fixtures
- Semiconductor/ Electronic/ Components
- Telecommunication Hardware
- Automotive Equipment

**TYPICAL PROPERTIES OF MC501CD R2/R6/R9**

<b>General Properties</b>	<b>ASTM or UL Test</b>	<b>MC501CD R2 Typical Values</b>	<b>MC501CD R6 Typical Values</b>	<b>MC501CD R9 Typical Values</b>
<b>PHYSICAL</b>				
Specific Gravity (g/cm <sup>3</sup> )	D792	1.2	1.23	1.19
<b>MECHANICAL</b>				
Tensile Strength (kgf/cm <sup>2</sup> )	D638	700	760	897
Tensile Elongation (%)	D638	10	7	12
Flexural Strength (kgf/cm <sup>2</sup> )	D790	1,200	1,200	1,346
Flexural Modulus (10 <sup>3</sup> kgf/cm <sup>2</sup> )	D790	42.9	41	42.4
IZOD Notched Impact (kgf x cm/2.54cm)	D256	9	9	9
Compressive Strength (10 <sup>3</sup> kgf/cm <sup>2</sup> )	D695	1	0.95	1.081
Compressive Modulus (10 <sup>3</sup> kgf/cm <sup>2</sup> )	D695	42.9	41	45.3
Hardness Rockwell	D785	R119	R117	R119
<b>THERMAL</b>				
Heat Deflection Temp °F (°C)	D648	392/200	392/200	392/200
<b>ELECTRICAL</b>				
Volume Resistivity (Ohm.cm)	D257	10 <sup>2</sup> - 10 <sup>4</sup>	10 <sup>6</sup> - 10 <sup>8</sup>	10 <sup>8</sup> - 10 <sup>10</sup>

# Ball Lock Pins



Manufactured by

Carr Lane Manufacturing is well known in the industry for its industrial parts and standard tooling components. It is specially known for jig & fixture tooling components. Carr Lane Manufacturing has a huge variety of products ranging up to 100,000 industrial parts, components, tools & accessories, toggle clamps, handles, knobs, etc.

## Ball Lock Pins



Ball Lock Pin T-Handle

**Ball Lock Pins** are equipped with quick-release alignment pins that applies accurate ground shank. The Pins are also high in strength and is able to withstand heavy duty applications. The **Ball Lock Pins** feature is a single acting type 'Positive Locking' until released by pressing the button on top of the handle (**Ball Lock Pins** T-Handle as shown on the left). This will trigger the center spindle forward to allow the locking balls to retract. The features are the same for all four different styles of **Ball Lock Pins**.

The range of the Pin diameters are from 3/16" to 1" (5 to 20mm) and are available in alloy steel or stainless steel. **Ball Lock Pins** have special grip length of up to 12" (300mm) and other special features can be made to order.

There are 4 types of handle styles 'T-handle', L-handle', 'Button handle' and 'Ring handle'. **Ball Lock Pins** are manufactured from USA.



Ball Lock Pin L-Handle



Ball Lock Pin Button Handle



Ball Lock Pin Ring Handle

# Screwdriver with bit magazine LiftUp 26one



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.



## Screwdriver with bit magazine LiftUp 26one

The **LiftUp 26one** magazine bit holder consists of 13 double bits in total. 12 of which are housed in the magazine holder and 1 of it is housed in the bit holder.

A two-row bit clip that is located in the interior part of the bit holder is designed to allow easy removal of the bits. The SuperSlim bit holder is designed to have narrow shape that allows easy access to screws located at blind holes and tight spaces.

**LiftUp 26one** is equipped with a cleverly designed mechanism that with a push of a button it will unlock the handle exposing the bits that are stored inside. The SoftFinish® multi-component handle is made of skin-friendly special material surrounding the soft zone of the ergonomically-shaped handle. The geometry of the handle makes it comfortable for the user to use for long periods and it guarantees top torque value. This will allow powerful screw fastening or loosening.

**LiftUp 26one** is delivered with high-quality packaging to ensure that the product is delivered without any damages.

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](mailto:sales@pactumax.com). We look forward to hearing from you!

Highlights from the next issue of Pactumax Monthly Advanced Product Alert – Pomalux SD-A and Delrin® 150SA. Straight Line Action Clamps (Destaco) and Torque screwdriver TorqueVario®-S (wiha). Stay tuned!