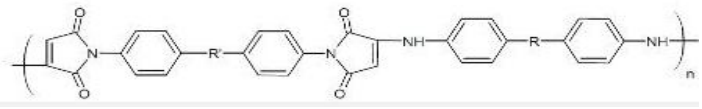
PIR-001 Polyimide Resin Powder

PIR-001 polyimide resin powder is unfilled polyimide copolymerized by BMI/MDA with modified flexibility and ultra fine particle size: over 800mesh , widely used in resin-bonded grinding wheels, abrasive tools, and matrix resin for composite materials, etc.

Note:1.Different polyimide types also available with different structures

2.BMI/MDA abbr. of bismaleimide/4,4'—methylenedianiline

Base structure:



Packing: carton or drum after sealed by plastic film bag net weight:20kgs/carton Shelf life: 2 Years

Properties(The follows are just examples not read as guaranteed values)

Visual/Solubility	Fine yellow powder/soluble in DMF,DMAC,NMP,etc.
Purity%	Over 98.5
Gravity	1.32g/cm^3
Particle size	Over 800mesh/less 20um (customized sizes also available)
Curing temperature(℃)/Pressure(MPa)	220-230/30-60
Softening temperature（℃）	90-120
Martin temperature（℃）	260
TGA260（℃）24hr/300（℃）24hr	Less 1.5% (mainly moisture loss)
Tg（℃）	330
Tensile strength(MPa)	113.4
Elongation%	Over 5%
Flexural Strength(MPa)	160
Flexural Modulus(MPa)	3500
Compressive strength 10% strain (MPa)	150
Impact Strength unnotched KJ/m²	65
Surface resistivityΩ	1 x 10^{15}
Dieletric consistant	3.5

Reference work process for polyimide resin powder in grinding wheels

Recommended curing temperature: *around 230℃*;Recommended heat pressure: *30-60MPa*

1. Heat pressure time for different wheel diameter/thickness(for reference)

Grinding Wheels	Diameter(mm)	<Φ150 and irregular	Φ150-200	Φ250-400

	Thickness(mm)	All	<10	>20	<25	>25
Heat Pressure Time(min.)		40	40	60	90	120

2. Temperature and time for curing process (for reference)

Temp.(℃)	80	rise	120	rise	160	rise	200	rise	225
Time(hr.)	1.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0	3.0-6.0

3.When temperature of mould reaches around 160-170℃,start gas emission for 3-5times. Emission time depends on real situation of final users. Curing time of above 2 can also be increased or reduced based on real situation of final users

4.Exact filling proportion is always important in formulation for grinding wheels, Anyway,it relies on end users.

General reference procedures for making abrasive/grinding wheels/instruments of polyimide resin

1.Preparation of the resin:

As polyimide resin are hygroscopic, it has to be predried around 120 °C for a couple of hours before any use.

2.Primer Coating:

The primer solution should be applied thinly to the roughened bonding surface (using a brush) and dried for around 10 hours at 250 °C.

3.Release Agent:

We recommend silicone oil to spray to be applied in a very thin coating on the mould surfaces.

Note: 1.Since polyimide resins are hygroscopic, please predried at 250 °F (120 °C) for a couple of hours before any use

2.All of above information is based on our best knowledge, not read as guarantees. Right reserved for corrections.

3.Please contact us if customization requirements.

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