

# Heat Insulation Sponges

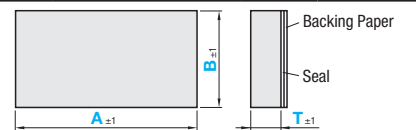
## Polyimide Foam

■ Polyimide foam has heat resistance is up to 400°C and can be used as heat-resistant sound insulators.

### Heat Insulation Sponges - Polyimide Foam -



Type	Material	Color	Heat Resistance Temperature
HPRI	Aromatic Polyimide Foam No Adhesive	Light Beige	Main Body: 400°C
HPRIS	Main Body: Aromatic Polyimide Foam Adhesive: Heat Resistant Adhesive	Light Beige	Main Body: 400°C Adhesive: 200°C



■ Adhesive Strength of Heat Resistant Adhesive  
900gf / 20mm Width (Result of 180° peeling test of the material adhered to 304 Stainless Steel)

Part Number		A, B (A≥B)	
Type	T	A	B
HPRI HPRIS	10 20	100	100
		200	200
		300	300
		500	500
		800	800
		1000	1000

Ordering Example: Part Number - A - B  
HPRIS10 - 200 - 100

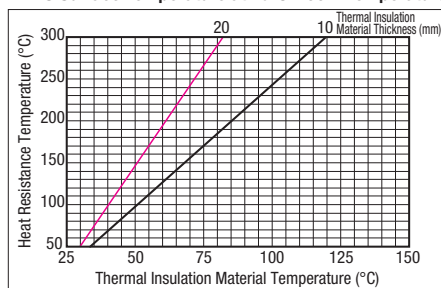
Days to Ship [Configure Online](#)

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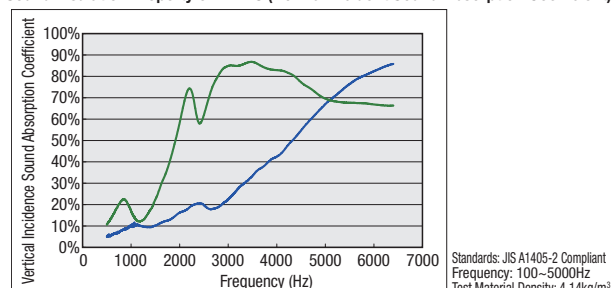
Part Number	Type	T	A(A≥B)	Unit Price						
				B	100	200	300	500	800	1000
HPRI (No Adhesive) (x1.0)	10	10	100							
			200							
			300							
			500							
			800							
			1000							
HPRIS (Adhesive) (x1.1)	20	20	100							
			200							
			300							
			500							
			800							
			1000							

⚠ This product is regulated under Foreign Exchange and Foreign Trade Act. Export permit from minister of economy, trade and industry is needed for exporting.

### HPRI Surface Temperature at 20°C Room Temperature



### Sound Insulation Property of HPRIS (Normal Incident Sound Absorption Coefficient)



### Overview

- Made of polyimide foam, best in heat resistance among engineering plastic.
- Excels in heat, fire, environment resistance and low outgas. Provides high performance as a thermal insulator or a soundproof material under high temperature.
- Polyimide sheets and washers are made by using heat insulation sponge compressed to 2mm.

### Main Features

- High heat resistance with glass transition temperature of 400°C (The maximum continuous operating temperature is 300°C).
- Excels in heat insulation.
- Flexible workability: easily cut by utility knives.
- Self-extinguishable and flame-resistant.
- Extremely low gas discharge.
- Possesses superior properties of aromatic polyimide, such as resistance to radiation and ultraviolet, electrical isolation and chemical resistance.

### Cautions

- As a characteristic of polyimide, rebound from compression is inferior. Avoid using it in compressed state to maintain heat insulating property.
- Allowable temperature limit for adhesive is 200°C. In higher operating temperature, use adhesive as temporary joint.
- (Apply supplementary attachment method such as nipping.)

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### Characteristic Data

#### Thermal / Electrical Characteristics

Item	Unit	Characteristic Value	Testing Method
Expansion Ratio	Times	330~270	-
Apparent Density	kg/m <sup>3</sup>	4~5	ASTM D 3574 (TestA)
Tg	°C	400	DSC Analysis
Thermal Decomposition Temp. (5%)	°C	540	TGA Analysis
Brittle Temperature	°C	<150	-
Thermal Conductivity	W/m-K	0.045	ASTM C 518
Combustibility	-	-	-
Limited Oxygen Index	%	50	ASTM D 2863
Outgas	TML	1.01	ASTM E 595
	CVCM	0.04	
	WVR	0.72	
Dielectric Constant (1MHz)	-	1	Impedance Analyzer
Dielectric Dissipation Factor (1MHz)	-	0.0001	

#### Mechanical Characteristics

Item	Unit	Characteristic Value	Testing Method
Tensile Strength	MPa	0.05	ASTM D 3574 (TestE)
Tensile Modulus	MPa	0.17	ASTM D 3574 (TestE)
Elongation	%	28	ASTM D 3574 (TestE)
Flexural Modulus	MPa	-	-

#### Chemical Resistance

Chemical	HPRIS	Testing Method
10% Sulfuric Acid	○	Soaked for 24 hours at room temperature
10% Hydrochloric Acid	○	
Acetone	○	
Methylene Chloride	○	
NMP	○	
DMA	○	

○: No appearance change or swelling

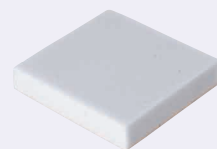
# Heat and Sound Insulation Sponges / Heat Insulation Sponges

## Melamine Resin Foam

## High Heat Resistant Polyimide Foam

■ Heat and Sound Insulation Sponges have heat resistance up to 150°C and Heat Insulation Sponges have allowable temperature limit is 200°C.

### Heat and Sound Insulation Sponges - Melamine Resin Foam -



Type	Material	Color	Heat Resistance Temperature
BASO	Melamine Resin Foam, No Adhesive	Light Gray	Main Body: 150°C
BASOS	Main Body: Melamine Resin Foam / Adhesive: Heat Resistant Adhesive	Light Gray	Main Body: 150°C Adhesive: 150°C



Part Number		1mm Increment	
Type	T	A	B
BASO (No Adhesive)	5	50~1000	50~1000
	10		
	20		
BASOS (Adhesive)	5	50~1000	50~1000
	10		
	20		

### Characteristic Data

Item	Unit	Characteristic Value
Apparent Density	kg/m <sup>3</sup>	9.5
Thermal Conductivity	W/m-K	0.034
Combustibility	-	HF-1

### Mechanical Characteristics

Item	Unit	Characteristic Value
Tensile Strength	kPa	148
Elongation	%	18
Compressive Stress 25%	kPa	4.3

Ordering Example: Part Number - A - B  
BASO10 - 200 - 100

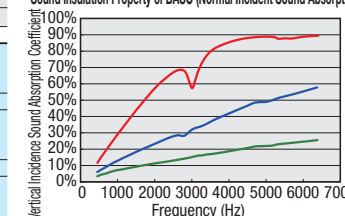
Days to Ship

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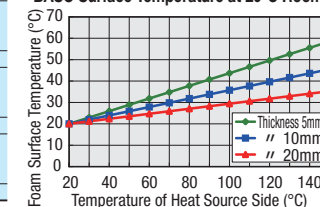
Price [Configure Online](#)

Part Number	Type	T	A(A≥B)	Unit Price						
				B	50~300	301~500	501~800	801~1000		
BASO (No Adhesive)	5	5	50~300							
			301~500							
			501~800							
			801~1000							
			BASOS (Adhesive)	10	10	50~300				
						301~500				
501~800										
801~1000										
BASOS (Adhesive)	20	20				50~300				
						301~500				
			501~800							
			801~1000							

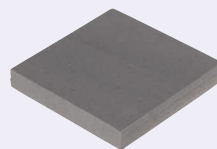
### Sound Insulation Property of BASO (Normal Incident Sound Absorption Coefficient)



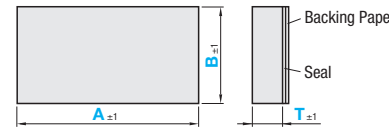
### BASO Surface Temperature at 20°C Room Temperature



### Heat Insulation Sponges - High Heat Resistant Polyimide Foam -



Type	Material	Color	Heat Resistance Temperature
HOPA	High Heat Resistant Polyimide Foam, No Adhesive	Gray	Main Body: 200°C
HOPAS	Main Body: High Heat Resistant Polyimide Foam / Adhesive: Heat Resistant Adhesive	Gray	Main Body: 200°C Adhesive: 180°C



Part Number		1mm Increment	
Type	T	A	B
HOPA (No Adhesive)	7	50~900	50~900
	14		
	14		
HOPAS (Adhesive)	7	50~900	50~900
	14		
	14		

### Characteristic Data

Item	Unit	Characteristic Value
Material Density	kg/m <sup>3</sup>	52
Thermal Conductivity	W/m-K	0.036

### Mechanical Characteristics

Item	Unit	Characteristic Value
Tensile Strength	kPa	1300
Elongation	%	70
Compressive Stress 25%	kPa	190

Ordering Example: Part Number - A - B  
HOPA7 - 200 - 100

Days to Ship

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Part Number	Type	T	A(A≥B)	Unit Price						
				B	50~300	301~500	501~800	801~900		
HOPA (No Adhesive)	7	7	50~300							
			301~500							
			501~800							
			801~900							
			HOPAS (Adhesive)	14	14	50~300				
						301~500				
501~800										
801~900										

### HOPA Surface Temperature at 20°C Room Temperature

