



HighTemp
Material Co., Ltd.

PRODUCT CATALOG

Industrial High Temperature Insulation
& Thermal Materials Supplier

PCB / SMT / Energy Storage / EV



High Performance
Up to 1200°C



Excellent Insulation
& Fire Protection



Safe & Eco-friendly
RoHS Compliant



All Solid Materials
Liquid / Powder Free



Global Supply
Reliable Service

OUR PRODUCT RANGE

01 PTFE & FLUORINE
HIGH TEMP FILM
MATERIALS



02 POLYIMIDE PI
HIGH TEMPERATURE
MATERIALS



03 HIGH TEMP
PET INSULATION FILM



04 HIGH TEMP
PPS INSULATION FILM



05 HIGH TEMP
PEN INSULATION FILM



06 SILICONE RUBBER &
FOAM THERMAL MATERIALS



07 HIGH TEMP SEALING
GASKET & PACKING
MATERIALS



08 FIBERGLASS &
FIREPROOF INSULATION
MATERIALS



APPLICATIONS WE SERVE



PCB
LAMINATION



SMT
ASSEMBLY



SOLAR &
INVERTER



ENERGY STORAGE
PACK



EV POWER
ELECTRONICS



INDUSTRIAL FURNACE
& HEAT TREATMENT



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**ALL SOLID MATERIALS,
ZERO RISK EXPORT**

No Liquid | No Powder |
No Hazardous Chemicals



PTFE & FLUORINE HIGH TEMP FILM MATERIALS

High Performance Solutions for Extreme
Temperature & Demanding Applications



High Temperature
Resistance
-200°C to 260°C



Excellent Chemical
Resistance



Outstanding Electrical
Insulation



Low Friction &
Non-stick



RoHS Compliant
& Safe



Custom Solutions
Available

01

SKIVED PURE PTFE FILM



- Virgin PTFE skived film
- Excellent chemical & corrosion resistance
- High temperature resistance (-200°C~260°C)
- Low friction, non-stick surface
- Used for lining, electrical insulation, anti-corrosion and release applications



Chemical
Resistant



Non-stick
Surface



High Temp.
-200~260°C

02

FIBERGLASS REINFORCED PTFE COATED CLOTH



- High strength fiberglass base
- Premium PTFE coating on both sides
- Heat resistance up to 260°C
- Excellent dimensional stability
- Used in conveyor belts, release sheets, sealing and protective covers



High Strength
& Durable



Heat
Resistant



Non-stick
Coating

03

ePTFE MICROPOROUS BREATHABLE FILM



- Microporous structure, breathable and waterproof
- Excellent chemical resistance
- High temperature resistance (-200°C~150°C)
- Used for ventilation, waterproofing, battery vents and protective clothing



Breathable &
Waterproof



Chemical
Resistant



Pore Size
0.1~10µm

04

FEP HIGH TEMPERATURE FILM



- FEP (Fluorinated Ethylene Propylene) film
- Excellent transparency & release performance
- High temperature resistance up to 205°C
- Outstanding chemical resistance
- Used for release liners, insulation, encapsulation and packaging



High Transparency
& Release



Heat
Resistant



Chemical
Resistant

05

HIGH TEMP PTFE ADHESIVE TAPE



- PTFE film with high temperature adhesive
- Heat resistance up to 260°C
- Excellent chemical & electrical insulation
- Non-stick surface, easy to clean
- Used for sealing, splicing, electrical insulation and high temp masking



Heat
Resistant



Strong
Adhesion



Electrical
Insulation

06

CUSTOM DIE CUT PTFE WASHER & GASKET



- 100% virgin PTFE material
- Excellent chemical & corrosion resistance
- High temperature resistance (-200°C~260°C)
- Low friction, non-stick, high sealing performance
- Custom shapes and sizes available based on drawings



Excellent
Sealing



Chemical
Resistant



Custom
Made

TYPICAL APPLICATIONS



POLYIMIDE PI HIGH TEMPERATURE MATERIALS

Reliable Insulation Solutions for Extreme
Temperature & Demanding Environments



High Temperature
Resistance
-269°C to 400°C



Excellent Electrical
Insulation



Chemical & Solvent
Resistance



Mechanical Strength
& Durability



RoHS Compliant
& Safe



Custom Solutions
Available

01

PLAIN PI KAPTON BASE FILM



- Outstanding high temperature resistance
- Excellent electrical insulation
- High dielectric strength
- Chemical and radiation resistance
- Widely used in insulation and protection



High Temp.
400°C



Electrical
Insulation



Chemically
Resistant

02

BLACK MATTE PI MASKING FILM



- Matte surface for light blocking
- Excellent high temperature resistance
- Good dimensional stability
- Anti-reflective and anti-glare
- Ideal for PCB, LED, and 3D printing masking



Light Blocking



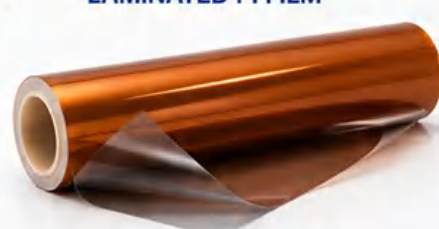
High Temp.
400°C



Dimensional
Stability

03

FEP COMPOSITE LAMINATED PI FILM



- PI film laminated with FEP on one or both sides
- Excellent chemical & corrosion resistance
- Low friction and release performance
- High temperature resistance up to 400°C
- Used in release liners and protective layers



FEP Coating



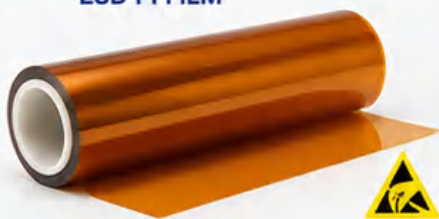
Chemical
Resistant



Low
Friction

04

ANTI-STATIC ESD PI FILM



- Surface resistivity $10^6 - 10^9 \Omega/\text{sq}$
- Anti-static and dust-free
- Excellent electrical and mechanical properties
- High temperature and chemical resistance
- Suitable for electronic and cleanroom use



Anti-static
ESD



High Temp.
400°C



Cleanroom
Compatible

05

HIGH TEMPERATURE PI KAPTON TAPE



- Withstands high temperatures up to 400°C
- Excellent electrical insulation
- Strong adhesion and clean removal
- Chemical, solvent and UV resistant
- Used for masking, splicing, insulation



High Temp.
400°C



Strong
Adhesion



Electrical
Insulation

06

CUSTOM DIE CUT PI INSULATION PAD



- Custom shapes and sizes available
- Excellent electrical insulation
- High temperature and flame resistance
- Precise die cutting, tight tolerance
- Used in electronics insulation and protection



Custom
Die Cut

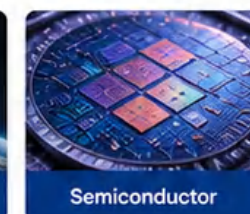
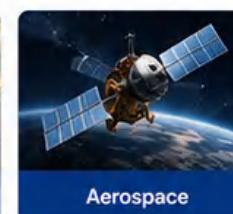
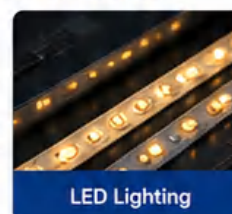


Electrical
Insulation



Flame
Resistant

TYPICAL APPLICATIONS



HIGH TEMP PET INSULATION FILM

Reliable Electrical Insulation & Protection for High Temperature Applications



High Temperature Resistance
-70°C to 200°C



Flame Retardant
UL94 V0 Available



Excellent Electrical Insulation



Chemical & Moisture Resistant



RoHS Compliant & Safe



Custom Solutions Available

01

FLAME RETARDANT UL94 V0 PET INSULATION FILM



- UL94 V0 flame retardant certified
- High temperature resistance up to 200°C
- Excellent electrical insulation performance
- Dimensional stability and high strength
- Widely used in motors, power supplies, batteries and electrical appliances



UL94 V0
Flame Retardant



High Temp.
200°C



Electrical
Insulation

02

SMT REFLOW HIGH TEMP PET MASKING FILM



- High temperature resistance for SMT reflow process up to 260°C
- Excellent dimensional stability and flatness
- No residue, clean removal
- Protects PCB gold finger and components
- Widely used in SMT, wave soldering and high temp masking



Reflow Resistant
Up to 260°C



No Residue
Clean Removal



Process
Protection

03

PCB/FPC LAMINATION PET RELEASE FILM



- Designed for PCB/FPC lamination process
- Excellent release performance
- High temperature resistance up to 200°C
- Smooth surface, bubble-free
- Improve production efficiency and product yield



Excellent
Release



High Temp.
200°C



Improve Yield &
Efficiency

04

BLACK MATTE INSULATION PET FILM (ANTI-GLARE & ISOLATION)



- Matte surface, anti-glare and light shielding
- Excellent electrical insulation and dimensional stability
- High temperature resistance up to 200°C
- Ideal for display, camera module, and electronic isolation
- Prevent light reflection and improve contrast



Anti-glare
Matt Surface



Light Shielding &
Isolation



High Temp.
200°C

05

CLEAR HIGH TEMP PET ELECTRICAL ISOLATION FILM



- High transparency and excellent clarity
- High temperature resistance up to 200°C
- Outstanding electrical insulation performance
- Moisture, chemical and abrasion resistant
- Used in transformers, motors, capacitors and electronics



High
Transparency



Electrical
Insulation



Chemical & Moisture
Resistant

TYPICAL APPLICATIONS



HIGH TEMP PPS INSULATION FILM

Advanced Insulation Solutions for High Temperature
Electrical & Electronic Applications



High Temperature
Resistance
Up to 220°C



Flame Retardant
UL94 V0 Available



Excellent Electrical
Insulation



Chemical & Solvent
Resistance



RoHS Compliant
& Safe



Custom Solutions
Available

01

PPS THERMAL INSULATION FILM (220°C LONG-TERM RESISTANCE)



- Long-term temperature resistance up to 220°C
- Excellent dimensional stability and flatness
- Outstanding electrical insulation performance
- Low moisture absorption and high chemical resistance
- Ideal for motor insulation, transformers, and industrial equipment



220°C
Long-term
Resistance



Electrical
Insulation



Chemical
Resistant

02

FLAME RETARDANT PPS FILM FOR INVERTER & AUTOMOTIVE ELECTRONICS



- Flame retardant performance UL94 V0
- High temperature resistance up to 200°C
- Excellent dielectric strength and breakdown voltage
- Suitable for inverter, ECU, power module and other high-reliability applications
- Provides enhanced safety and protection in harsh environments



UL94 V0
Flame
Retardant



Automotive
Grade



High
Reliability

03

HIGH RIGIDITY PPS ISOLATION FILM FOR BATTERY MODULE



- High rigidity and mechanical strength
- Excellent puncture and tear resistance
- High electrical insulation for battery safety
- Ideal for cell isolation, shock absorption, and thermal protection
- Suitable for EV battery packs, energy storage systems and power batteries



Battery
Safety



High
Rigidity



Isolation
Protection

TYPICAL APPLICATIONS



Inverter & Automotive Electronics

Insulation and protection in high temperature automotive power systems



Battery Module & Pack

Cell isolation, cushioning and thermal management protection



Motors & Industrial Equipment

Electrical insulation and thermal barrier for motors, transformers and generators



Reliable Performance



Long Service Life



Precision Manufacturing



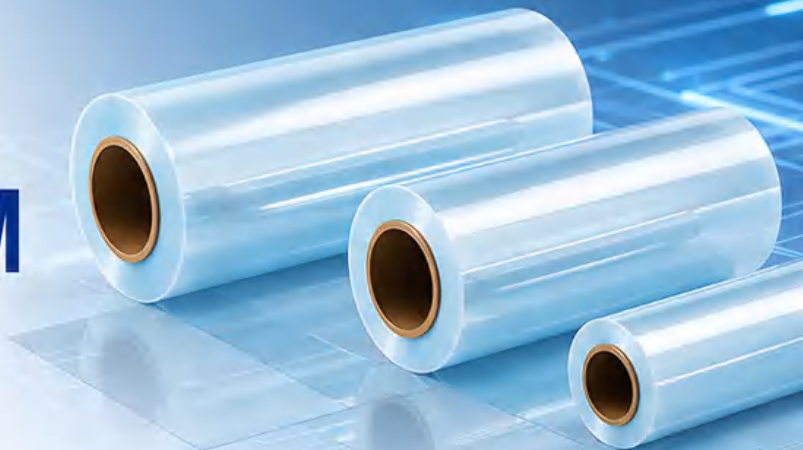
Customizable Solutions



Global Supply Support

HIGH TEMP PEN INSULATION FILM

High Performance Insulation & Protection
for Demanding High Temperature Applications



High Temperature
Resistance
Up to 200°C



Excellent Electrical
Insulation



UV Resistance
(Outdoor Durable)



Dimensional Stability
& High Strength



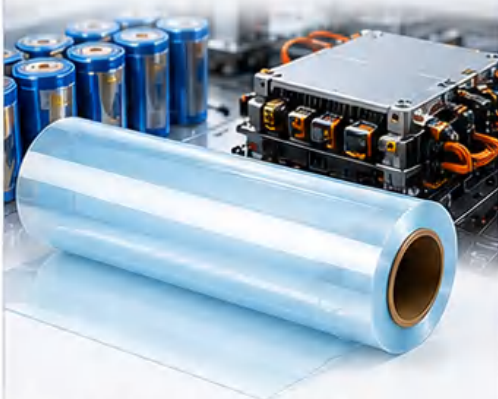
Low Moisture
Absorption



RoHS Compliant
& Safe

01

PEN HIGH TEMP PACKAGING FILM FOR LITHIUM BATTERY



- Excellent heat resistance up to 200°C
- High dielectric strength and electrical insulation
- Good puncture resistance and mechanical strength
- Low moisture absorption, high safety
- Ideal for cell wrapping, top & side insulation, flexible packaging and protection



High Temp.
200°C



Electrical
Insulation



Safe &
Reliable

02

UV RESISTANT PEN INSULATION FILM FOR SOLAR PV MODULE



- Excellent UV resistance and weatherability
- High temperature resistance up to 200°C
- Outstanding dimensional stability and flatness
- High dielectric strength and insulation
- Widely used in PV backsheet, insulation layer and protective film



UV Resistant
Durable



Weather
Resistant



High
Stability

03

HIGH THERMAL STABILITY PEN FILM FOR POWER ELECTRONICS



- High thermal stability and long-term reliability
- Excellent electrical insulation and arc resistance
- High strength, wear and chemical resistance
- Low shrinkage and excellent processability
- Suitable for inverters, power modules, motors and high-temp insulation applications



Thermal
Stability



High Dielectric
Strength



Reliable
Insulation

TYPICAL APPLICATIONS



Lithium Battery Packaging & Insulation
Cell wrapping, module insulation, flexible packaging



Solar PV Module Insulation
Backsheet, encapsulation, UV protection



Power Electronics & Industrial
Inverter, IGBT module, motor insulation

SILICONE RUBBER & FOAM THERMAL MATERIALS

High Performance Thermal Solutions
for Extreme Temperature & Demanding Applications



Wide Temperature
Resistance
-60°C to 260°C



Flame Retardant
UL94 V-0 Available



Excellent Chemical
Resistance



Good Compressibility
& Resilience



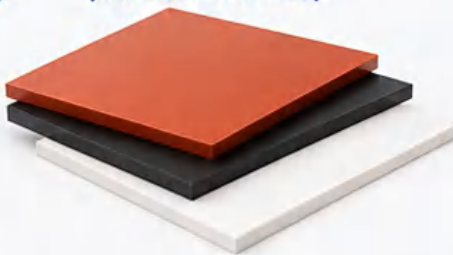
Electrical Insulation
& Dielectric



RoHS Compliant
& Safe

01

SOLID SILICONE RUBBER SHEET (RED/BLACK/WHITE)



- Excellent heat resistance up to 260°C
- High tensile strength and tear resistance
- Good electrical insulation and dielectric properties
- Resistant to ozone, UV, aging and weather
- Widely used in sealing, gasketing and insulation



02

SILICONE COATED FIBERGLASS CLOTH



- High temperature resistance up to 260°C
- Excellent mechanical strength and durability
- Flame retardant, UL94 V-0 available
- Good electrical insulation and chemical resistance
- Ideal for insulation jackets, welding blankets, expansion joints and protective covers



03

CLOSED CELL SILICONE FOAM PAD



- Closed cell structure, low compression set
- Excellent thermal insulation and shock absorption
- Highly compressible and resilient
- Waterproof, dustproof and good sealing
- Widely used in enclosures, EV battery, LED lighting and electronics

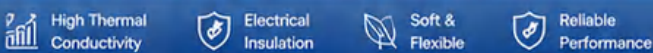


04

THERMAL CONDUCTIVE SILICONE SHEET (SOLID)



- High thermal conductivity for efficient heat transfer
- Soft and flexible, low stress on components
- Excellent electrical insulation and dielectric strength
- Available in various thickness and hardness
- Ideal for heat dissipation in electronics and power modules



05

PCB LAMINATION SILICONE PRESS CUSHION



- High temperature resistance and excellent rebound
- Uniform compression for stable lamination
- Long service life and high durability
- Suitable for multilayer PCB, HDI, FPC lamination
- Custom thickness, hardness and size available



TYPICAL APPLICATIONS



Electrical Enclosures
Sealing & Insulation



LED Lighting
Thermal Management



EV Battery Pack
Insulation & Sealing



Power Electronics
Heat Dissipation



Industrial Equipment
Insulation & Protection

HIGH TEMP SEALING GASKET & PACKING MATERIALS

Reliable Sealing Solutions for Extreme
Temperature & Harsh Environments



High Temperature
Resistance
-200°C to 1000°C



Excellent Sealing
Performance



Chemical & Oil
Resistance



Asbestos-Free
Safer & Healthier



High Pressure
& Stress Resistance



Long Service Life
& Reliability

01 FKM FLUORINE RUBBER GASKET (220~300°C)



- Excellent heat resistance up to 300°C
- Outstanding oil, fuel and chemical resistance
- Low compression set and high resilience
- Suitable for high pressure and vacuum sealing
- Widely used in automotive, aerospace, chemical industry



High Temp.
220~300°C



Oil & Chemical
Resistant



High
Resilience

02 ASBESTOS-FREE SEALING SHEET & GASKET



- 100% asbestos-free, safe and eco-friendly
- Excellent sealing under high temperature and high pressure
- Good chemical resistance and durability
- Ideal for steam, oil, water, gas and chemical sealing applications



Asbestos-Free



High Pressure
Resistance



Chemical
Resistant

03 FIBERGLASS / SILICONE FIBER ROPE



- High temperature resistance up to 550°C
- Excellent tensile strength and flexibility
- Good insulation and sealing performance
- Widely used in door seals, furnace, boiler, and industrial equipment



High Temp.
Up to 550°C



Good
Flexibility



Thermal
Insulation

04 CERAMIC FIBER PACKING ROPE



- Continuous use temperature up to 1260°C
- Low thermal conductivity and heat loss
- Excellent chemical stability and corrosion resistance
- Ideal for high temperature sealing and insulation
- Used in furnaces, kilns, boilers and valves



High Temp.
Up to 1260°C



Chemical
Stable



Low Thermal
Conductivity

05 MICA SHEET & DIE CUT MICA GASKET



- Excellent dielectric strength and insulation
- High temperature resistance up to 1000°C
- Good thermal stability and flame retardant
- Die cut to custom shapes and sizes
- Widely used in electrical, heating and industrial insulation



High Temp.
Up to 1000°C



Electrical
Insulation



Flame
Retardant

06 AEROGEL THERMAL INSULATION PAD (ENERGY STORAGE FIREPROOF)



- Ultra-low thermal conductivity
- Fireproof and excellent heat insulation
- Lightweight, flexible and easy to install
- Excellent protection for battery cells and modules
- Ideal for energy storage, EV battery and power systems



Fireproof
Protection



Ultra-Low
Thermal Conductivity



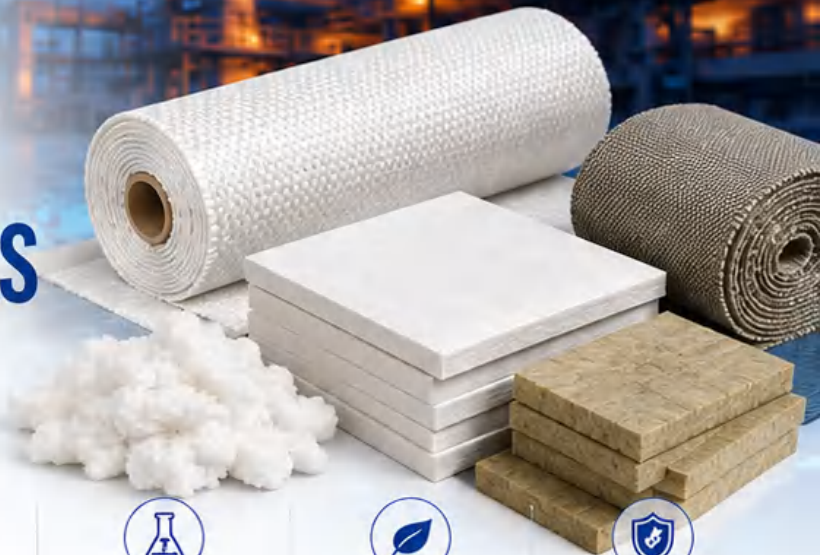
Energy Storage
Safety

TYPICAL APPLICATIONS



FIBERGLASS & FIREPROOF INSULATION MATERIALS

Advanced Thermal Insulation Solutions
for Extreme Heat & Fire Protection



High Temperature
Resistance
Up to 1200°C



Excellent Fire
Protection



Low Thermal
Conductivity



Chemical Corrosion
Resistance



Safe, Non-toxic
& Eco-friendly



Durable &
Long Service Life

01

HIGH SILICA FIBERGLASS CLOTH (900~1200°C)



- High silica content $\geq 96\%$
- Continuous working temperature up to 1200°C
- Excellent tensile strength and tear resistance
- Good chemical stability and corrosion resistance
- Widely used in welding protection, insulation wrap and heat shielding



Up to 1200°C
High Temp.



Fire
Resistant



High
Strength

02

CERAMIC FIBER BOARD / PAPER / COTTON



- Low thermal conductivity, excellent insulation performance
- Temperature resistance up to 1260°C
- Lightweight, low heat storage
- Good sound absorption and electrical insulation
- Board, paper and cotton available for different applications



Up to 1260°C
High Temp.



Low Thermal
Conductivity



Lightweight &
Insulation

03

ROCK WOOL & ALUMINUM SILICATE INSULATION BOARD



- Excellent thermal insulation and fire resistance
- Non-combustible, A1 fire rating
- Good compressive strength and dimensional stability
- Resistant to moisture, mold and corrosion
- Ideal for industrial furnace, HVAC, and building insulation



Fire
Resistant



Thermal
Insulation



Moisture
Resistant

04

BASALT FIBER FIREPROOF FABRIC



- Made from natural basalt rock
- Working temperature up to 800°C
- High strength and abrasion resistance
- Excellent fireproof and heat insulation
- Used in fire curtain, welding blanket, insulation cover and composite reinforcement



Up to 800°C
High Temp.

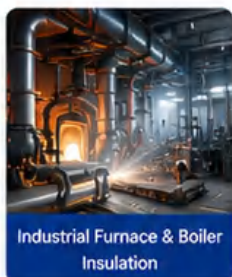


Fire
Resistant



Abrasion
Resistant

TYPICAL APPLICATIONS



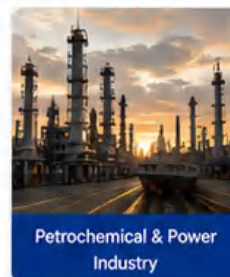
Industrial Furnace & Boiler
Insulation



Welding Protection &
Heat Shield



HVAC & Building
Insulation



Petrochemical & Power
Industry



Marine & Shipbuilding
Insulation



Railway & Transportation
Fire Protection



Extreme Heat Resistance



Reliable Fire Protection



High Performance Insulation



Chemical & Corrosion Resistant



Custom Solutions Available

APPLICATION SOLUTIONS

PCB LAMINATION

High Performance Materials for
Reliable PCB Lamination Process



High Temperature
Resistance
Up to 400°C



Excellent
Insulation
& Protection



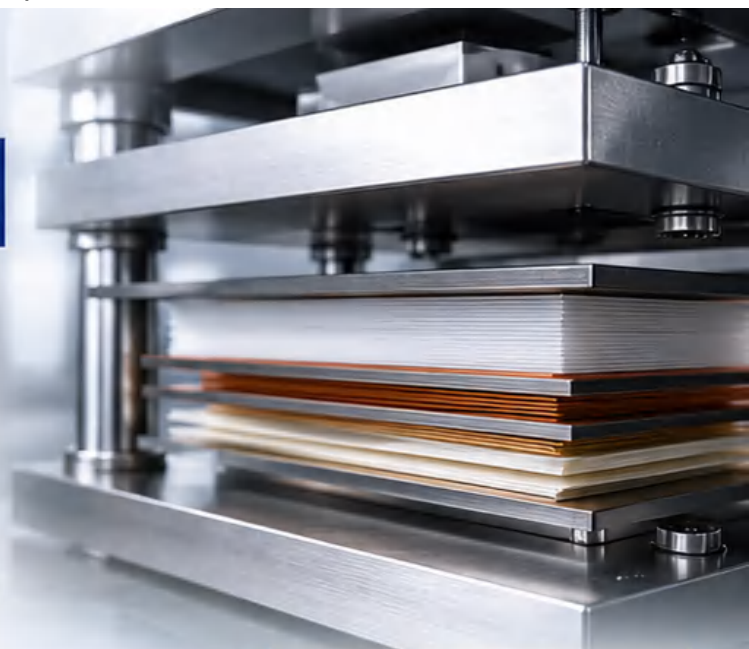
Even Pressure
Distribution
& Flatness



Surface Quality
& Clean
Laminate



Reusable
Cost Saving
& Eco-friendly



TYPICAL LAMINATION STRUCTURE

Steel Plate
(Separator Plate)

Release Film
(PET / PI / PTFE)

Copper Clad Laminate

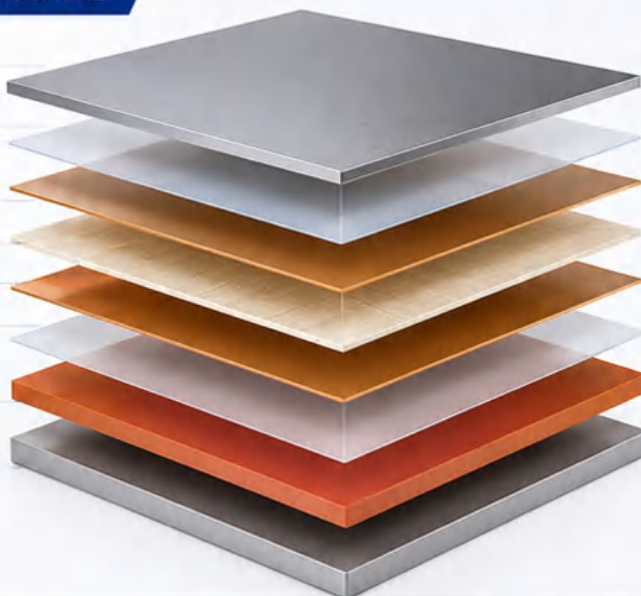
Prepreg / Core

Copper Clad Laminate

Release Film
(PET / PI / PTFE)

Cushion Pad
(Silicone Rubber)

Steel Plate
(Separator Plate)



LAMINATION PROCESS FLOW



Material Preparation



Lay-up & Alignment



Hot Press Lamination



Cooling



Finished Laminate

KEY MATERIALS WE SUPPLY



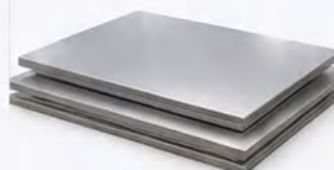
CUSHION PAD

Good resilience and compression performance, ensures even pressure distribution.



RELEASE FILM

Excellent release performance, high temperature resistance, clean surface.



SEPARATOR PLATE

High flatness and hardness, excellent thermal conductivity, long service life.



INSULATION SHEET

High temperature insulation, electrical insulation, stable performance.

ADVANTAGES

- Improve laminate quality and yield
- Prevent voids, bubbles and scratches
- Ensure consistent thickness and flatness
- Extend tooling life and reduce maintenance
- Lower cost with reusable materials

TYPICAL APPLICATIONS



Multilayer PCB
Lamination



FPC / Flexible PCB
Lamination



HDI Board
Lamination



Copper Clad Laminate
(CCL) Lamination



High Temperature
Up to 400°C



RoHS Compliant
& Safe



Global Supply
Reliable Service



Custom Solutions
OEM & ODM

SMT ASSEMBLY

High Performance Materials for SMT Reflow,
Wave Soldering & Electronics Manufacturing



High Temperature Resistance
Up to 300–400°C



Precision Masking
High Accuracy



Anti-static (ESD)
ESD Protection



Clean Removal
No Residue

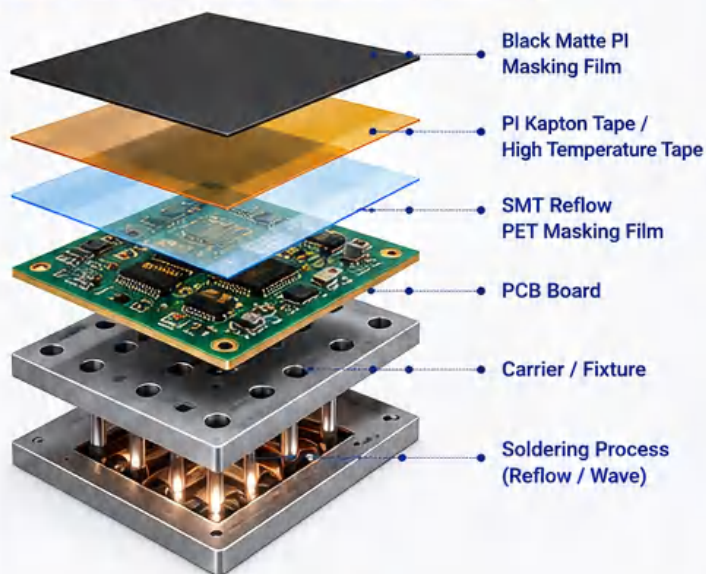


Chemical Resistance
Solvent Resistant



RoHS Compliant
Safe & Reliable

SMT MASKING APPLICATION STRUCTURE



SMT ASSEMBLY PROCESS FLOW

- 01 PCB Loading**
Board input & conveyor system
- 02 Solder Paste Printing**
Accurate solder paste printing
- 03 Pick & Place**
High speed component mounting
- 04 Reflow Soldering**
High temperature reflow process
- 05 AOI Inspection**
Automatic optical inspection
- 06 Finished PCB**
High quality SMT assembly

KEY MATERIALS WE SUPPLY



Black Matte PI Masking Film
Excellent heat resistance and masking performance



High Temperature PI Kapton Tape
Up to 300–400°C
High adhesion & clean removal



SMT Reflow PET Masking Film
High temperature resistance
No residue after removal



Anti-static ESD PI Film
ESD protection
Safe for sensitive components



Custom Die Cut PI Insulation Pad
Custom shapes & sizes
Electrical insulation & protection

ADVANTAGES

- ✓ Precision masking for fine pitch components
- ✓ No adhesive residue, clean and easy removal
- ✓ High temperature resistance up to 300–400°C
- ✓ Excellent electrical insulation & ESD protection
- ✓ Reusable and cost saving
- ✓ Improve production efficiency and yield

TYPICAL APPLICATIONS



SMT Production Line
Reflow & Wave Soldering
Process Protection



PCB Assembly
Masking & Fixing
during SMT Process



Semiconductor Packaging
High Temperature
& ESD Protection



Automotive Electronics
Reliable & Durable
Manufacturing Solution



High Temperature Resistance
Up to 400°C



Precision Converting
Slitting / Die Cutting /
Laminating



Global Supply
Reliable Quality
On-time Delivery



OEM & ODM Solutions
Custom Materials
& Converting Services

APPLICATION SOLUTIONS

SEMICONDUCTOR

High Performance Insulation & Thermal Materials
for Semiconductor Manufacturing



Ultra Clean
Low Outgassing



High Temperature
Resistance
Up to 400°C



ESD Protection
Anti-static
& Safe



Electrical
Insulation
High Dielectric
Strength

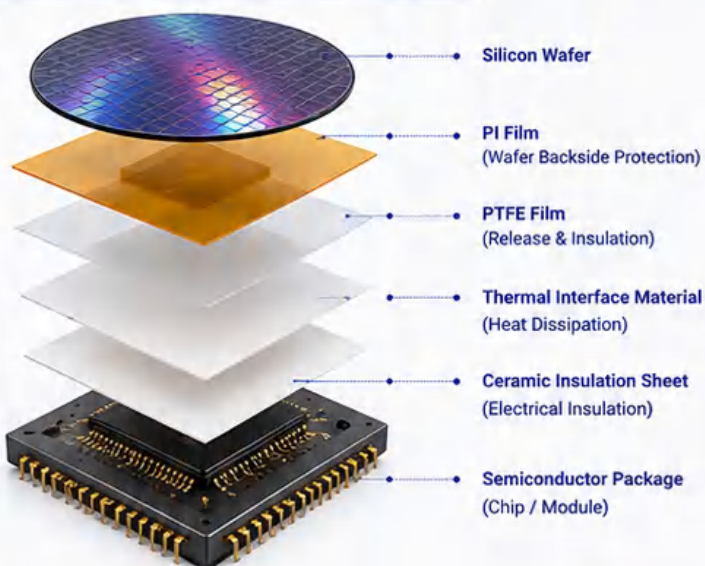


Chemical
Resistance
Corrosion
Resistant



Precision
Converting
Custom Solutions
Available

SEMICONDUCTOR APPLICATION STRUCTURE



SEMICONDUCTOR MANUFACTURING WORKFLOW



KEY MATERIALS WE SUPPLY



Plain PI Kapton Film
High temperature resistance,
electrical insulation



Anti-static ESD PI Film
ESD protection, low particle
generation



PTFE Film
Release, insulation, chemical
resistance



PPS Insulation Film
High temperature stability,
excellent mechanical strength



Ceramic Insulation Sheet
High dielectric strength,
thermal insulation



**Custom Die Cut
Insulation Parts**
Precision die cutting,
custom shapes & sizes

WHY CHOOSE OUR MATERIALS

- ✓ Ultra clean materials, low ionic contamination
- ✓ Low outgassing, suitable for vacuum environments
- ✓ Excellent electrical insulation & dielectric strength
- ✓ High temperature stability up to 400°C
- ✓ Precision die cutting for tight tolerance
- ✓ Long term reliability & process consistency

TYPICAL APPLICATIONS



Wafer Fabrication
Backside Protection,
Process Masking



Semiconductor Packaging
Insulation, Heat Dissipation,
Molding Release



**Power Semiconductor
Module**
Electrical Insulation,
Thermal Management



**AI Chip & Advanced
Electronics**
High Reliability Insulation,
ESD Protection



High Temperature
Resistance
Up to 400°C



Precision Converting
Slitting / Die Cutting /
Lamination



OEM Manufacturing
Custom Solutions
Available



Global Supply
Reliable Quality
On-time Delivery

APPLICATION SOLUTIONS

SOLAR PV

High Performance Materials for
Photovoltaic Modules & Power Systems



**High Temperature
Resistance**
Up to 200°C



**Excellent
Insulation
& Safety**



**Moisture & UV
Resistance**
Long Lifetime



**High Dielectric
Strength**
Reliable Protection

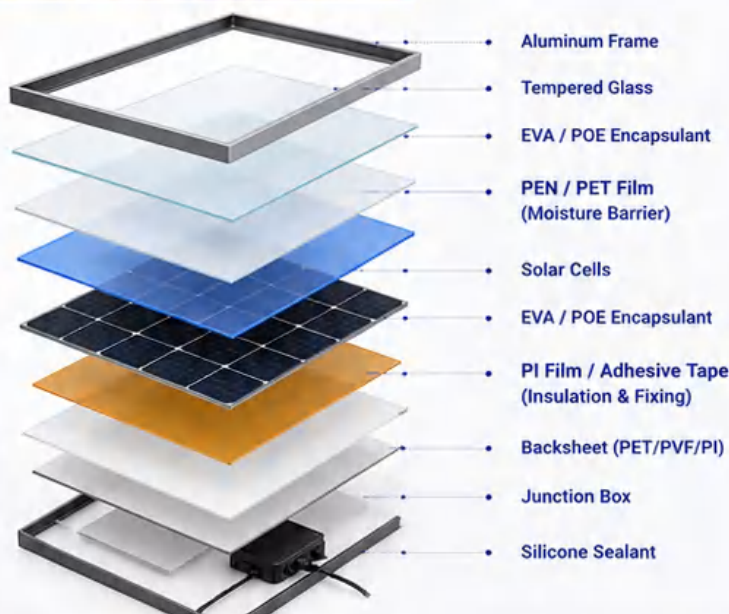


**RoHS Compliant
Eco-friendly
Materials**

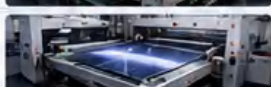
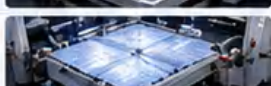


**Stable Performance
for Outdoor
Applications**

SOLAR PV MODULE STRUCTURE



PV MODULE MANUFACTURING PROCESS

- 01**  **Glass Cleaning**
High transmittance
tempered glass
- 02**  **Film Laying**
PEN/PET moisture barrier
film & adhesive tape
- 03**  **Cell String Lay-up**
Automatic solar cell
string laying
- 04**  **Lamination**
EVA/POE encapsulation
under high temperature
- 05**  **Trimming & Framing**
Edge trimming
& frame assembling
- 06**  **EL Testing & Inspection**
100% EL testing and
quality inspection
- 07**  **Finished Module**
Reliable, efficient
and long lifetime

KEY MATERIALS WE SUPPLY



PEN Moisture Barrier Film
Excellent moisture & gas
barrier, high temperature
resistance, long lifetime



PET Moisture Barrier Film
High transparency, good
mechanical strength,
UV & weather resistance



PI Film (Kapton®)
High temperature resistance,
excellent insulation,
dimensional stability



PI Adhesive Tape
High temperature tape for
cell fixing, busbar protection
& electrical insulation



Backsheet Film
PET / PVF / PI backsheet
for high weatherability
and insulation



Silicone Sealant
Excellent adhesion,
weather resistance
and durability

ADVANTAGES

- ✓ Extend module lifetime and ensure high efficiency
- ✓ Excellent insulation and electrical safety
- ✓ Outstanding moisture, UV and weather resistance
- ✓ Stable performance in harsh outdoor environments
- ✓ RoHS compliant, environmentally friendly
- ✓ Custom solutions for different module designs

TYPICAL APPLICATIONS



Utility Scale PV Power Plant
High reliability materials for
long-term outdoor operation



Rooftop PV System
Durable materials for
various climate conditions



Energy Storage System
Insulation & protection
for PV + ESS integration



BIPV & Building Integration
Lightweight, safe and
aesthetically integrated



**High Temperature
Resistance**
Up to 200°C



Insulation & Protection
Safe & Reliable
Long Lifetime



Precision Converting
Die Cutting, Slitting,
Laminating



Global Supply
Reliable Quality
On-time Delivery

BATTERY PACK

High Performance Insulation & Thermal Management Materials for Lithium Battery Packs



Electrical Insulation
High Voltage Safety



Thermal Management
Heat Dissipation



Flame Retardant
Enhanced Safety



High Temperature Resistance
Up to 200°C

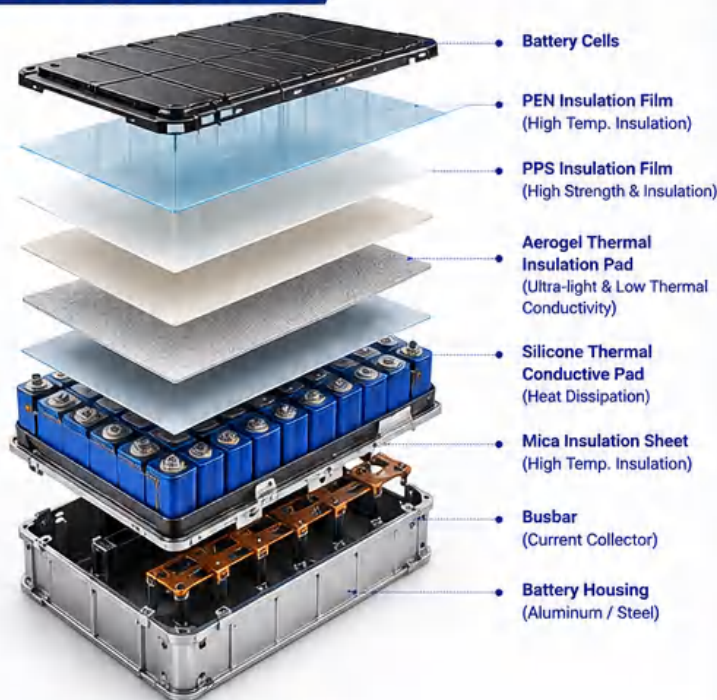


Lightweight
Improve Energy Density



Precision Converting
Custom Solutions

BATTERY PACK STRUCTURE



BATTERY PACK MANUFACTURING PROCESS

01



Cell Sorting

Capacity grading, IR/OCV testing and matching

02



Module Assembly

Cells stacking, busbar welding, and fixation

03



Insulation Installation

Apply insulation films, pads and protective parts

04



Thermal Management

Install thermal pads, aerogel and cooling system

05



Pack Assembly

Integrate modules, BMS, harness and enclosure

06



End-of-Line Testing

EOL testing, safety check and quality inspection

KEY MATERIALS WE SUPPLY



PEN High Temp Insulation Film

Excellent dielectric strength, high temperature resistance and dimensional stability.



PPS Insulation Film

High mechanical strength, excellent insulation and chemical resistance.



Aerogel Thermal Insulation Pad

Ultra-low thermal conductivity, lightweight and superior thermal insulation.



Silicone Thermal Conductive Pad

Soft and compressible, excellent thermal conductivity and insulation.



Mica Insulation Sheet

High temperature resistance, electrical insulation and flame retardant.



Custom Die-Cut Insulation Parts

Precision die cutting, various shapes and custom materials.

ADVANTAGES

- ✓ High Voltage Insulation & Electrical Safety
- ✓ Thermal Runaway Protection
- ✓ Flame Retardant & Enhanced Safety
- ✓ Lightweight Solutions for Higher Energy Density
- ✓ Precision Die Cutting for Perfect Fit
- ✓ Long Service Life & Reliability

TYPICAL APPLICATIONS



EV Battery Pack

Power battery for BEV, PHEV and HEV vehicles.



Energy Storage Battery

Grid ESS, commercial & industrial energy storage.



Battery Module

Module insulation and thermal management.



Power Battery Manufacturing

Insulation protection for production and assembly



High Temperature Resistance
Up to 200°C



OEM Manufacturing
Custom Solutions
Stable Quality



Precision Converting
Die Cutting, Slitting,
Laminating



Global Supply
Reliable Service
Fast Delivery

ENERGY STORAGE

High Performance Insulation & Thermal Protection Materials for Battery Energy Storage Systems (ESS)



High Voltage Insulation
Electrical Safety



Thermal Runaway Protection
Enhanced Safety



Fire Resistance
Flame Retardant Materials



Thermal Management
Efficient Heat Dissipation

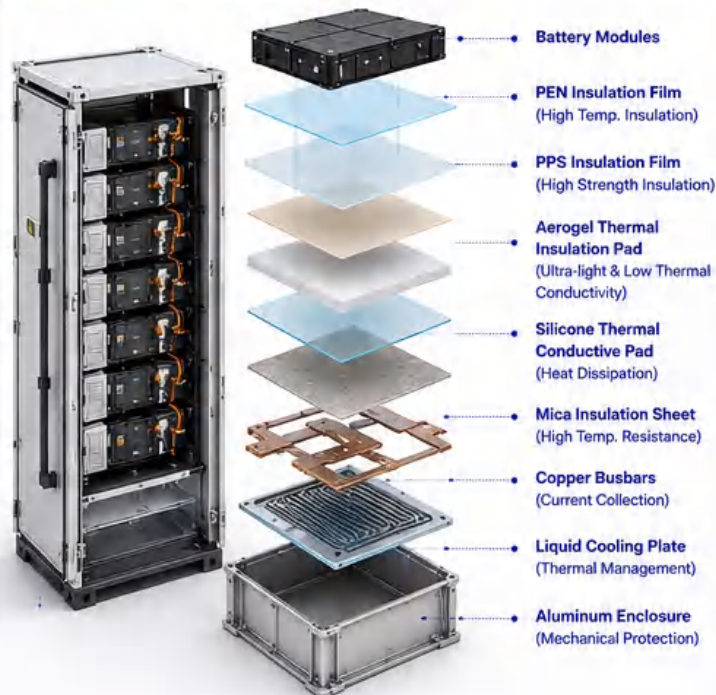


Outdoor Reliability
Durable & Reliable



Precision Converting
Custom Solutions

ESS CABINET STRUCTURE



ENERGY STORAGE SYSTEM WORKFLOW

01



Battery Module
Cell sorting and module assembly

02



Rack Assembly
Module stacking and mechanical installation

03



Insulation Installation
Apply insulation films, pads and protective materials

04



Cooling System
Install liquid cooling plates and thermal management system

05



BMS Integration
Integrate BMS, wiring harness and monitoring system

06



ESS Container
System integration and safety protection

07



Grid Connection
Testing, commissioning and grid operation

KEY MATERIALS WE SUPPLY



PEN High Temp Insulation Film

High dielectric strength, excellent heat resistance and dimensional stability



PPS Insulation Film

High mechanical strength, chemical resistance and excellent insulation



Aerogel Thermal Insulation Pad

Ultra-low thermal conductivity, lightweight and superior thermal insulation



Silicone Thermal Conductive Pad

Soft and compressible, excellent thermal conductivity and insulation



Mica Insulation Sheet

High temperature resistance, electrical insulation and flame retardant



Custom Die-Cut Insulation Parts

Precision die cutting, various shapes and custom materials

WHY CHOOSE OUR MATERIALS

- ✓ Thermal Runaway Protection
- ✓ High Voltage Insulation & Electrical Safety
- ✓ Flame Retardant & Fire Resistance
- ✓ Long Service Life & High Reliability
- ✓ Precision Die Cutting for Perfect Fit
- ✓ Outdoor Weather Resistance

TYPICAL APPLICATIONS



Utility-scale BESS Container
Large-scale energy storage for grid stabilization



Commercial Energy Storage Cabinet
Peak shaving, backup power for commercial buildings



Renewable Energy Storage
Solar & wind energy storage integration



Microgrid Energy Storage System
Microgrid, island and off-grid solutions



High Temperature Resistance
Up to 200°C



OEM Manufacturing
Custom Solutions
Stable Quality



Precision Converting
Die Cutting, Slitting, Laminating



Global Supply
Reliable Service
Fast Delivery

APPLICATION SOLUTIONS

ELECTRIC VEHICLE (EV)

High Performance Insulation & Thermal Management Materials for EV Powertrain and Battery Systems



High Voltage Insulation
Up to 1000V+



Thermal Management
Efficient Heat Dissipation



Flame Retardant
Enhanced Safety



Lightweight Solutions
Improve Driving Range

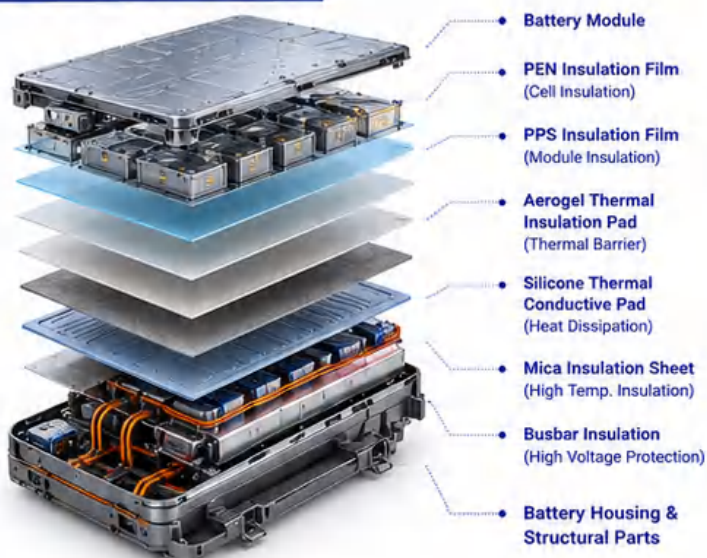


Reliable & Durable
Long Service Life



Precision Converting
Custom Solutions

EV APPLICATION STRUCTURE



EV MANUFACTURING & APPLICATION PROCESS



KEY MATERIALS WE SUPPLY



PEN Insulation Film
High dielectric strength, high temperature resistance and moisture barrier



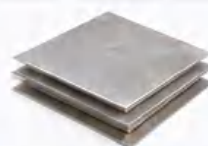
PPS Insulation Film
Excellent mechanical strength, chemical resistance and high temperature stability



Aerogel Thermal Insulation Pad
Ultra-low thermal conductivity, lightweight and excellent thermal barrier



Silicone Thermal Conductive Pad
Soft and compressible, excellent thermal conductivity and insulation



Mica Insulation Sheet
High temperature resistance, electrical insulation and flame retardant



Custom Die-Cut Insulation Parts
Precision die cutting, various shapes and custom materials

WHY CHOOSE OUR MATERIALS

- ✓ High Voltage Insulation & Electrical Safety
- ✓ Thermal Runaway Protection
- ✓ Lightweight & Improve Energy Efficiency
- ✓ Flame Retardant & Environmental Friendly
- ✓ Precision Die Cutting for Perfect Fit
- ✓ Long Service Life & Reliability

TYPICAL EV APPLICATIONS



EV Battery Pack
Cell, module and pack insulation & protection



Power Electronics
Inverter, DC/DC converter and on-board charger



Electric Drive Motor
Motor insulation, slot & phase protection



Charging System
High voltage insulation and safety protection



EV Interior
Lightweight insulation and noise reduction



High Temperature Resistance
Up to 200°C+



OEM Manufacturing
Custom Solutions
Stable Quality



Precision Converting
Die Cutting, Slitting, Laminating



Global Supply
Reliable Service
Fast Delivery

APPLICATION SOLUTIONS

INDUSTRIAL FURNACE

High Performance Insulation & Thermal Protection Materials for Industrial Furnace and High Temperature Environments



High Temperature Resistance
Up to 1200°C+



Excellent Insulation
Low Thermal Conductivity



Fire Safety
Non-combustible Materials



Chemical Stability
Corrosion & Oxidation Resistance

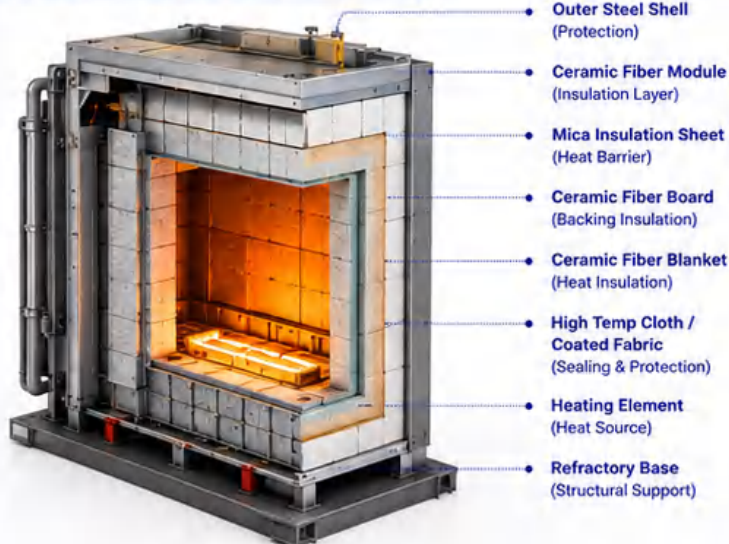


Long Service Life
Durable & Reliable Performance



Precision Converting
Custom Solutions Available

INDUSTRIAL FURNACE STRUCTURE



APPLICATION & MANUFACTURING PROCESS



KEY MATERIALS WE SUPPLY



Ceramic Fiber Blanket
1260°C / 1400°C / 1600°C
Excellent insulation performance and thermal shock resistance



Ceramic Fiber Board
1260°C / 1400°C
Low thermal conductivity and high strength



Mica Insulation Sheet
1000°C
Heat resistant, electrical insulation and durable



High Temp Cloth
1000°C
Heat resistance, abrasion resistance and sealing



High Temp Tape
Up to 300°C
Strong adhesion and high temperature resistance



Ceramic Fiber Rope
550°C / 850°C / 1260°C
Sealing, insulation and flexible protection

WHY CHOOSE OUR MATERIALS

- ✓ Superior insulation for energy saving
- ✓ Withstand extreme high temperatures
- ✓ Resistant to thermal shock and vibration
- ✓ Chemical stability and corrosion resistance
- ✓ Extend furnace life and reduce maintenance
- ✓ Custom sizes and solutions available

TYPICAL APPLICATIONS



Heat Treatment Furnace
Annealing, hardening and tempering applications



Metallurgical Furnace
Steelmaking, melting and refining processes



Ceramic & Glass Kiln
High temperature sintering and firing applications



Petrochemical Furnace
Reforming, cracking and process heating



Waste Incinerator
High temperature incineration and emission systems



High Temperature Resistance
Up to 1200°C+



Reliable Insulation
Safe & Efficient
Energy Saving



Precision Converting
Cutting, Slitting,
Laminating



Global Supply
Fast Delivery
Custom Solutions

MATERIAL GUIDE

High Performance Materials for Demanding Applications



Premium Quality
Reliable & Consistent
Performance



High Temperature Resistance
Up to 1600°C+



Precision Converting
Custom Solutions
Available



Global Supply
Fast Delivery &
Technical Support



01 HIGH PERFORMANCE FILMS



PEN High Temp Insulation Film

Excellent dielectric strength, high temperature resistance and dimensional stability.



PPS Insulation Film

Outstanding mechanical strength, chemical resistance and thermal stability.



PI (Kapton) Film

High temperature resistant insulation film for electrical electronic applications.



PTFE Film & Sheet

Excellent chemical resistance, low friction and high temperature performance.



Release Films

Double-sided matte, TPX release film and three-in-one release film solutions.



Functional Coated Films

Special surface treatment for insulation, protection and release applications.

02 THERMAL & INSULATION MATERIALS



Ceramic Fiber Board

Low thermal conductivity, high temperature resistance up to 1260°C / 1400°C.



Ceramic Fiber Paper

Flexible, lightweight and excellent thermal insulation up to 1280°C.



Ceramic Fiber Cotton

Low thermal conductivity and excellent heat retention up to 1260°C.



Rock Wool & Aluminum Silicate Board

Fire resistant, sound insulation and heat preservation.



Mica Insulation Sheet

Excellent dielectric strength and high temperature resistance up to 1000°C.



Aerogel Insulation Pad

Ultra-low thermal conductivity, ultra-thin and outstanding thermal barrier.

03 ENGINEERING PLASTICS



PEEK

High strength, wear resistance and chemical resistance.



PPS

High temperature resistance, flame retardant and excellent dimensional stability.



PEI (ULTEM)

High strength and stiffness with excellent heat resistance.



PTFE

Excellent chemical resistance, low friction and non-stick performance.



POM (Acetal)

High stiffness, low friction and excellent wear resistance.



PVC

Good chemical resistance, electrical insulation and cost effective.

04 INDUSTRIAL ACCESSORIES & COMPONENTS



Cushion Pad

High temp lamination cushion pads for PCB/CCL/FPC applications.



Separator Plate

SUS630, 4120, 4310, DILLIDUR high precision steel plates for lamination press.



Tooling Plate

Custom tooling & carrier plates for multilayer lamination.



Die Cut Parts

Custom die cutting for insulation, protection and sealing applications.



High Temp Tape

Polyimide, glass cloth, PTFE and specialty tapes for high temp applications.



Sealing Rope

Ceramic fiber rope and seal solutions for high temperature sealing.

MATERIAL SELECTION GUIDE

Electrical Insulation	PEN Film, PPS Film, PI Film, Mica Sheet, Ceramic Fiber
Thermal Insulation	Aerogel Pad, Ceramic Fiber Board/Paper/Cotton, Rock Wool Board, Mica Sheet
High Temperature Resistance	Ceramic Fiber (up to 1260°C/1400°C), Mica (1000°C), PI Film (up to 400°C), PTFE (up to 260°C)
Chemical Resistance	PTFE, PEEK, PPS, PVC, Ceramic Fiber

TYPICAL APPLICATIONS

PCB & FPC Lamination	Lithium Battery & Energy Storage	EV & Automotive Electronics	Semiconductor Manufacturing
Solar PV Module	Industrial Furnace & Heat Treatment	Aerospace & Defense	General Industrial Equipment



Reliable Quality
Strict quality control and testing standards.



Custom Solutions
Material customization and precision converting.



Fast Delivery
Global supply chain and efficient logistics.



Technical Support
Professional team and full-service support.

CUSTOM MANUFACTURING

Precision Converting & OEM Solutions
Tailored to Your Specifications



Precision & Quality
Tight tolerance
and consistency



Advanced Equipment
State-of-the-art
machinery



Custom Solutions
Tailored to your
requirements



Global Support
Reliable supply
worldwide



On-Time Delivery
Fast turnaround
and flexible

01 DIE CUTTING



High precision die cutting for films, tapes, foams, gaskets and insulation materials.

- Complex shapes & tight tolerance
- Clean edge, no burr
- Prototype to mass production



02 SLITTING



Precision slitting for films, tapes, foils and paper with exact width control and minimal tolerance.

- Min. slitting width: 2mm
- Smooth edge, no jagged
- Jumbo roll to small roll



03 LAMINATING



Multi-layer laminating for films, foams, fabrics and metals to enhance performance.

- Dry & solventless lamination
- Bubble-free, high bonding strength
- Multi-material combinations



04 ADHESIVE COATING



Adhesive coating on one or both sides for tapes, films and functional materials.

- PSA, silicone, acrylic, thermoset
- Uniform coating, strong adhesion
- Custom thickness & performance



05 CNC CUTTING



High precision CNC cutting for engineering plastics, insulation boards and composite materials.

- Tight tolerance $\pm 0.05\text{mm}$
- Clean edge, no burr
- Custom shapes & holes



06 PRECISION CONVERTING



Comprehensive converting solutions integrating multiple processes to meet complex requirements.

- Multi-process integration
- Consistent quality control
- Scalable production



07 OEM FABRICATION



Custom fabrication and kitting services for unique applications and industry solutions.

- Custom parts & assemblies
- Material selection support
- Private label & packaging



MATERIALS WE PROCESS



Films
PI, PET, PEN, PTFE
PPS, Release Film



Foams & Pads
Silicone, EVA, PE,
Aerogel, PU



Insulation Materials
Mica, Ceramic Fiber,
Rock Wool, etc.



Adhesive Tapes
PET, PI, Foam, Cloth,
Double Sided Tape



Engineering Plastics
PEEK, PPS, PTFE,
POM, PVC, etc.



Metal Foils & Sheets
Aluminum, Copper,
Stainless Steel, etc.

QUALITY ASSURANCE

- ISO 9001 Quality Management System
- Strict Incoming & In-process Inspection
- Advanced Testing Equipment
- Full Traceability & Documentation

OUR CUSTOM MANUFACTURING PROCESS



Your Design. Our Expertise.
Perfect Solutions.

Let's Build Something Great Together.

QUALITY ASSURANCE

Committed to Consistent Quality,
Precision Manufacturing & Global Standards



ISO 9001 Certified

Certified quality
management system



Precision Inspection

Advanced equipment
and precise control



Material Traceability

Full batch tracking and
traceability system



RoHS & REACH Compliance

Environmentally friendly
and safe materials



Stable Quality

Consistent performance
and reliability



Global Supply

Worldwide delivery
and local support

QUALITY CONTROL PROCESS

- 01 Incoming Material Inspection**
Raw material quality check and acceptance
- 02 Material Identification**
Material composition and performance test
- 03 Precision Manufacturing**
Process controlled to strict specifications
- 04 In-process Inspection**
Real-time monitoring and quality control
- 05 Final Inspection**
Comprehensive inspection before shipment
- 06 Packaging & Shipment**
Secure packaging and on-time delivery

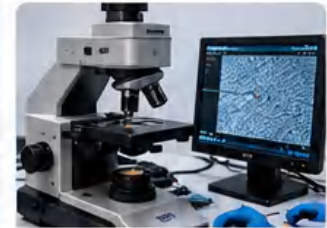
INSPECTION EQUIPMENT & CAPABILITIES



Thickness Measurement
High precision thickness testing
accuracy up to $\pm 0.001\text{mm}$



Dimension Inspection
CMM full dimension inspection
ensure precise tolerance



Surface Inspection
High magnification optical
inspection for surface defects



Tensile Strength Test
Material tensile strength and
elongation performance test



Thermal Resistance Test
High temperature resistance
performance up to $1000^{\circ}\text{C}+$



Electrical Insulation Test
Dielectric strength and insulation
resistance performance test

QUALITY CONTROL ITEMS



Thickness Inspection

Strict thickness control to
ensure consistent quality



Dimension Measurement

Precise dimension control
within tight tolerance



Surface Quality Inspection

Visual and optical inspection
for surface finish and defects



Tensile Strength Test

Evaluate mechanical strength
and material reliability



High Temperature Resistance Test

Performance validation under
extreme high temperature



Electrical Insulation Test

Ensure excellent insulation
and electrical safety

OUR QUALITY COMMITMENT

- ✓ **Strict Incoming QC**
All raw materials undergo rigorous inspection and testing before production.
- ✓ **100% Final Inspection**
Every product is inspected to meet customer specifications and quality standards.
- ✓ **Full Batch Traceability**
Complete traceability from raw materials to finished products.
- ✓ **Consistent Product Performance**
Stable process control ensures reliable and consistent performance.
- ✓ **OEM Quality System**
Customized quality control system to meet OEM requirements.
- ✓ **International Standards**
Manufactured in accordance with ISO 9001 and industry global standards.

QUALITY IN ACTION



Quality Laboratory

Professional laboratory for
material and product testing



Production Inspection

In-process quality control
at every critical step



Precision Measuring Equipment

Advanced equipment ensures
accurate and reliable data



Export Packaging Inspection

Final inspection and secure
packaging for global delivery



**ISO 9001
Quality Management**
Certified quality system



**Precision
Manufacturing**
Advanced technology
and strict control



**OEM/ODM
Support**
Customized solutions
for your needs



**Global Delivery
Reliable & Fast**
On-time delivery
worldwide

CONTACT US

Your Trusted Global Partner for
High Temperature Insulation &
Thermal Materials

GET IN TOUCH



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FAST RESPONSE



TECHNICAL
SUPPORT



CUSTOM
SOLUTIONS



SAMPLE
AVAILABLE

GLOBAL SUPPLY, LOCAL SUPPORT



GLOBAL
SHIPPING



SECURE
PACKAGING



ON-TIME
DELIVERY



SAFE &
RELIABLE

INDUSTRIES WE SERVE



PCB LAMINATION
High performance
lamination solutions



SMT ASSEMBLY
Reliable materials for
SMT process



SEMICONDUCTOR
Advanced materials for
semiconductor industry



SOLAR PV
Insulation & protection
for solar solutions



ENERGY STORAGE
Safe & efficient battery
system materials



EV
Advanced materials for
electric vehicles



INDUSTRIAL FURNACE
High temperature insulation
& thermal protection

WHY CHOOSE US



**HIGH TEMPERATURE
MATERIALS EXPERT**
Comprehensive portfolio
for demanding applications
up to 1000°C+



**OEM & PRECISION
CONVERTING**
Custom manufacturing to
meet your exact
requirements



**STABLE GLOBAL
SUPPLY**
Reliable production
capacity and worldwide
delivery



**FAST TECHNICAL
SUPPORT**
Professional engineering
support and quick
response



**EXPORT-FRIENDLY
PRODUCTS**
Compliant with RoHS,
REACH and international
standards



**PROFESSIONAL
B2B SERVICE**
Customer-focused service
for long-term partnership
and success

HIGH PERFORMANCE HIGH TEMPERATURE MATERIALS

Innovation • Quality • Reliability • Partnership

We look forward to working with you!

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