FURAN EMPOWER THE FUTURE

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HMF 中科国生 GS BIOMATS | 用生物质改变生活 BIOMASS CHANGE LIVES

BIOMASS CHANGE LIVES

From Nature To Next-Generation Materials

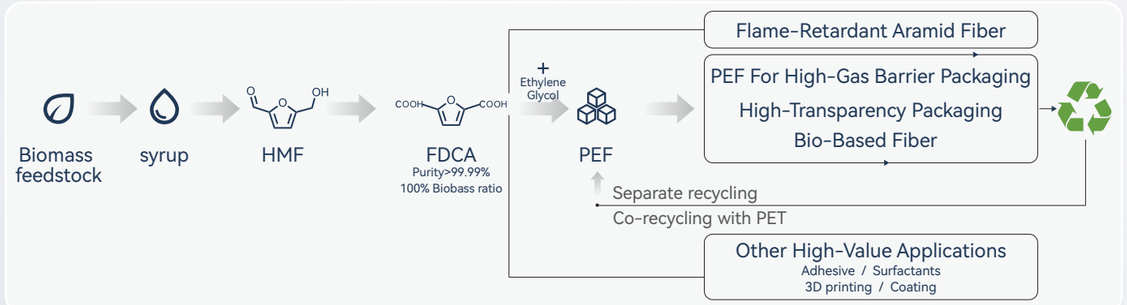
MAIN PRODUCTS

2,5-Furandicarboxylic acid（FDCA）
Customized monomer and polyesters: THFDM, FDM, DFF, PBF, etc.

WHO ARE WE ?

GS Biomats is a pioneering company focused on furan bio-based materials. We have already delivered over 200 tons of FDCA globally.Our platform spans the full value chain—from biomass feedstocks to scalable monomers, polymers, and applications.

A Platform Compound For A Circular Future »»»



THFDM

2, 5-tetrahydrofuran dimethanol

Bio-based diol chemicals
Hydrogenated derivatives of HMF
High purity, customizable
Green alternative to petrochemical glycols (e.g., BDO, CHDM).

FDME

2,5-Furandicarboxylicacid, 2,5-dimethyl ester

Key monomer for bio-PEF (polyethylene furanoate) production.
Low-carbon alternative to petroleum-based polyester intermediates.
High-purity with scalable production capacity.

FDCA GLOBAL CERTIFICATIONS »»»

EU REACH Full Registration

REACH
Regulation (EC) No 1907/2006
FULL REGISTRATION

USDA Biobased Preferred Program Certified
100% Biobased Content

USDA CERTIFIED BIOBASED PRODUCT
PRODUCT 100%

First in China Environmental Management Registration of New Chemical Substances (Regular Registration)

LCA Proven

Lower Carbon Footprint (vs PTA)
24%

Less Non-Renewable Energy Use (vs PTA))
75%

FDCA TO PEF

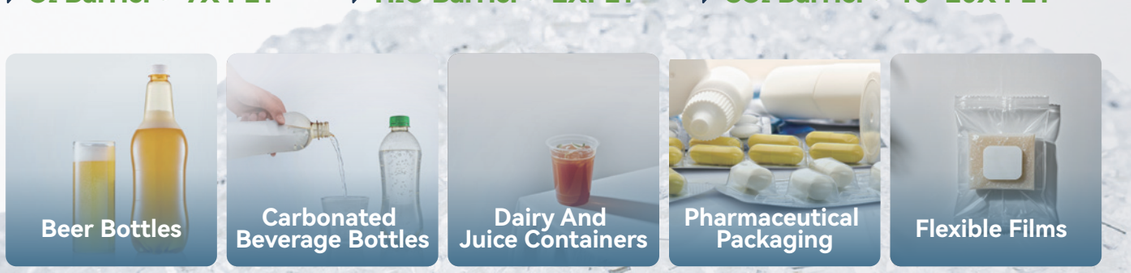
High-Performance, Recyclable Polyester—PEF, offers next-generation material benefits in both high-gas barrier packaging, and in bio-based fibers.

PEF For High-Gas Barrier Packaging

- Longer Shelf Life
- UV Blocking: Near-Zero UV Transmittance At 1.5 Mm
- Recyclable And RPET-Compatible

Barrier Performance »»»

- **O_2 Barrier > 7X PET**
- **H_2O Barrier > 2XPET**
- **CO_2 Barrier > 15-20X PET**



PEF For High-Transparency Packaging

- **Slow Crystallization**
  20-60 min (vs. PET: 3-5 min)
- **Thick Wall And High Transparency**
  Transmittance>90%、Haze<1%
- **Recyclable And RPET-Compatible**
  ≤10% PEF Addition In RPET Improves Barrier
  Resolves Haze Issues In Thick-Walled RPET Applications
  Recyclable With PET: Compatible With Co-Recycling And Same-Line Reprocessing

PEF vs. PET
Functional Advantages with Practical Benefits

Physical properties	PET	PEF	Packing Application Benefit
Melting Point/℃	245-255	**205-215**	Energy-saving low-temperature processing
Tg/℃	74-76	**86-90**	Hot-fill & pasteurization compatible
MI/(g/10min)	1-2.5（270°）	**15-60（260°）**	Better flowability for molding
Crystallization（min）	3-5	**20-60**	Enables thick-wall transparency
Elongation at break（%）	110-150	**8-10**	Lightweight,High-rigidity and durability Reduce transportation and storage costs
Tensile strength（Mpa）	60-70	**70-90**	
Tensile modulus（GPa）	2.1-2.4	**2.3-3.6**	