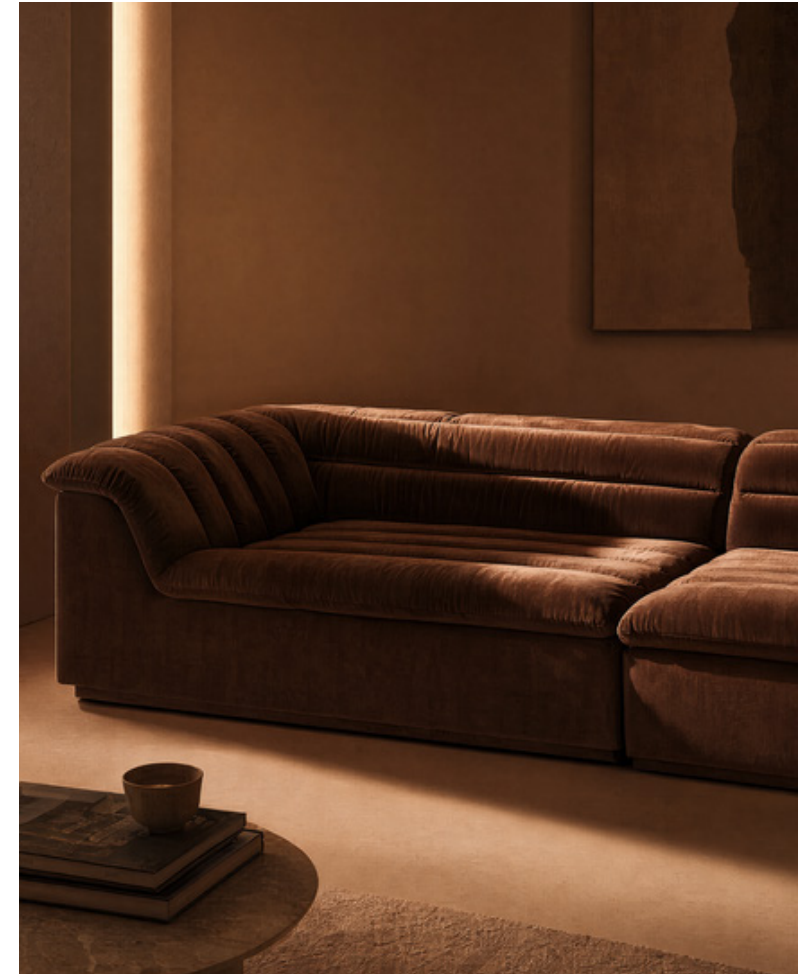




www.synmetabio.com



Through a unique cultivation method, a new generation of innovative bio-based synthetic leather materials has been developed

SynMetabio Biotechnology Co., Ltd. is a cutting-edge synthetic biology enterprise. SynMetabio insists on maximizing material innovation with synthetic biology at the source. we use a variety of substances such as corn cobs, straw, coffee grounds, distiller's lees, and oil in nature to provide nutrients, and cultivates a new generation of innovative biomaterials through unique cultivation methods.



From microbes to fabrics

SynMetabio Biotechnology Co., Ltd. is a cutting-edge synthetic biology enterprise. We focus on material innovation driven by synthetic biology. Using natural substances including corn cobs, straw, coffee grounds, distiller's lees and oil as nutrients, we cultivate a new generation of innovative biomaterials.

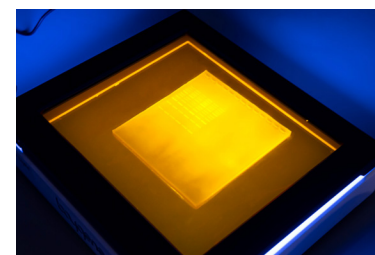
Technological Route

1



Strain screening

2



Gene editing

3



Fermentation of biological materials

4



Mass production

5



Microalgae system



Mass production

80-ton
fermentation system

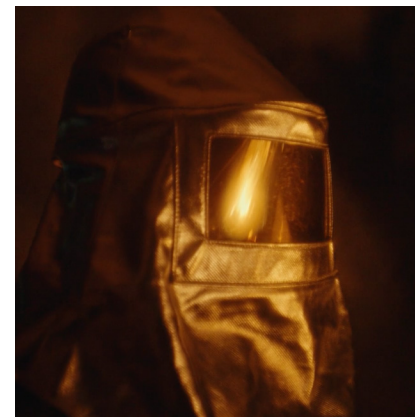
150-meter
production line

16 million meters
annual output

Performance



-30°C
high-temperature resistance



120°C
low-temperature resistance



1000,000 cycles
wrinkle resistance

Safety comes from organic ingredients

US BETA Lab Report SGS Certified



Mycelium



Mycelium fermentation raw materials

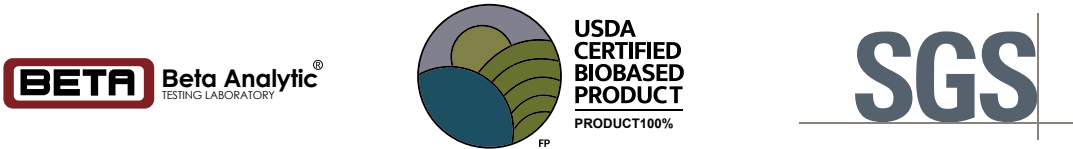
SynMetabio Tech’s mycelium-based bio leather is centered on bio-based materials. The products have passed SGS testing, with no irritating odors or harmful substances like heavy metals. They can also pass EU REACH and RoHS tests.



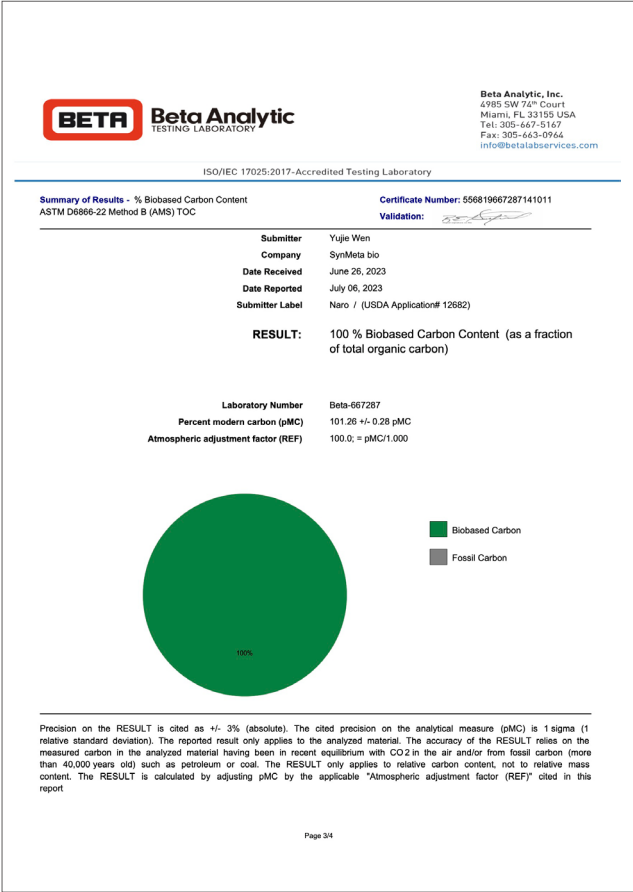
Environmentally friendly



Environmentally friendly



Bio-based content certification



Negative carbon footprint



Non-food biomass raw materials
(corn cob and straw)

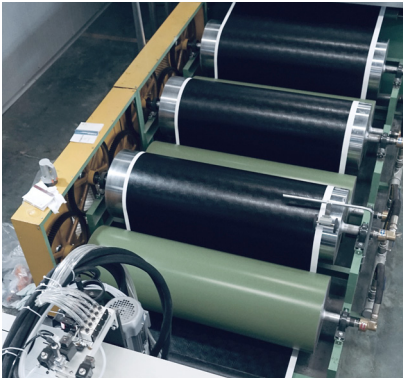
+6.3780



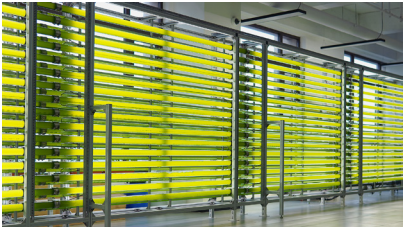
Raw material transportation
+0.5374



Production of leather
mycelium raw materials



Bio-based leather production



The waste liquid is fed into the
microalgae synthesis system,
Release oxygen through photosynthesis

-24.0804kgCO₂



Microalage liquid fertilizer

Manufacturing stage

Strain optimization CO₂+

Fermentation CO₂+

Microalgae synthesis system
CO₂-

-24.0804kgCO₂

Statement CN24/00005473

Product Carbon Footprint Verification Statement

The Product Carbon Footprint study of
1 kilogram Mycelium
which is conducted by

Shanghai SynMetabio Biotechnology
Co., Ltd.

Floor 5, Jiehui Science and Technology Innovation Park, No. 430, Miaojiao Road, Pudong New Area,
Shanghai, P.R. China

has been verified meeting the requirements of

ISO 14067:2018

The carbon footprint of 1 kilogram Mycelium is
-17.1650 Kilogram of CO₂ e

For the life cycle stages of product:
Cradle to Gate



Authorized by
David Xin
Sr. Director - Business Assurance
Date: 29 August 2024
SGS-CSTC Standards Technical Services Co., Ltd.
16F Century Yuhui Mansion, No. 73 Fucheng Road, Beijing, P.R. CHINA 100142
t +86 (0)10 58251188 www.sgsgroup.com.cn

This Statement is not valid without the full verification scope,
objectives, criteria and findings available
on pages 2 to 5 of this Statement.

Page 1 of 5



Kempinski



E18VAD-BZDL-M061AAT
Furniture Rust Brown 115A
Finished Thickness:1.15mm
Bio-based Content (Coating):30%





C5AHJC-SZDL-Z051ZAT
Suede Luggage Shadow Gray 075A
Finished Thickness:0.75mm
Bio-based Content (Coating):20%



E18VAD-BZDL-M061AAT
Furniture Rust Brown 115A
Finished Thickness:1.15mm
Bio-based Content (Coating):30%



C5AHJC-SZDL-Z051ZAT
Suede Luggage Shadow Gray 075A
Finished Thickness:0.75mm
Bio-based Content (Coating):20%



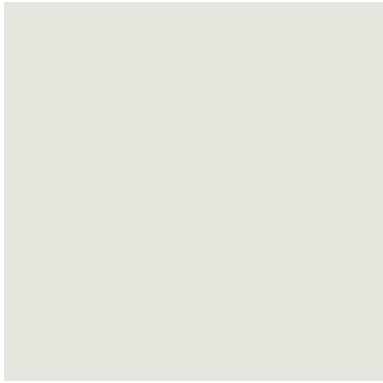
C0BUCA-DCDL-H001
Furniture Black140A
Finished Thickness:1.4mm



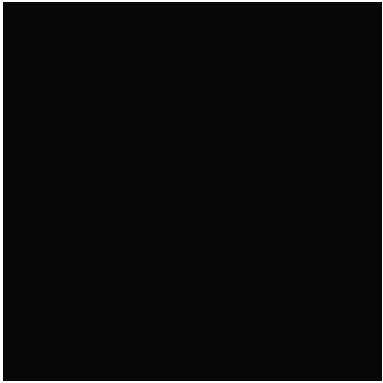
C0BUCA-BCDL-H002
Furniture Dark Yellow150A
Finished Thickness1.5mm



C1BVAF-BZDL-M010AA
Furniture Smoke White100A
Finished Thickness:1.0mm
Bio-based Content (Coating):50%



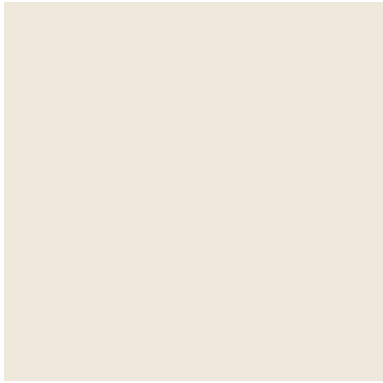
C1BVAC-SZDL-G001AA
Furniture Dew White100A
Finished Thickness:1.0mm
Bio-based Content (Coating):20%



C1BVAG-BZDL-M018AA
Furniture Black140A
Finished Thickness:1.4mm
Bio-based Content (Coating):60%



E1BVAD-BZDL-M018AAT
Furniture Black115A
Finished Thickness:1.15mm
Bio-based Content (Coating):30%



C1BVAG-SZDL-M001AA
Furniture Dew White140A
Finished Thickness:1.4mm
Bio-based Content (Coating):60%



C0BUCA-BCDL-H004
Furniture Yellow110B
Finished Thickness:1.10mm



C1BVAF-BZDL-M009AA
Furniture Night Gray100A
Finished Thickness:1.0mm
Bio-based Content (Coating):50%



C1BVAH-BZDL-M004AA
Furniture Topaz Red100A
Finished Thickness:1.0mm
Bio-based Content (Coating):70%



C1BVAF-BZDL-M008AA
Furniture Meteorite Gray100A
Finished Thickness:1.0mm
Bio-based Content (Coating):50%



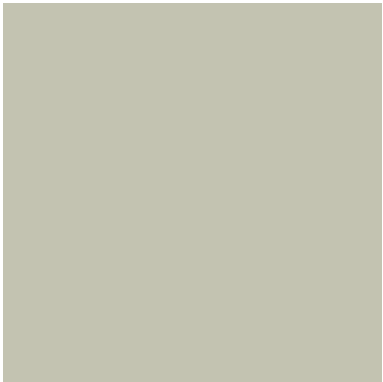
C1BVAC-BZDL-G005AB
Furniture Cement Beige100B
Finished Thickness:1.0mm
Bio-based Content (Coating):20%



C1BVAD-BZDL-M022AA
Furniture Moonlight Gray115A
Finished Thickness:1.15mm
Bio-based Content (Coating):30%



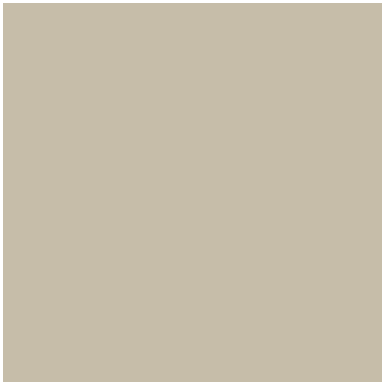
C0BUCA-BCDL-H005
Furniture Yellow110C
Finished Thickness:1.10mm



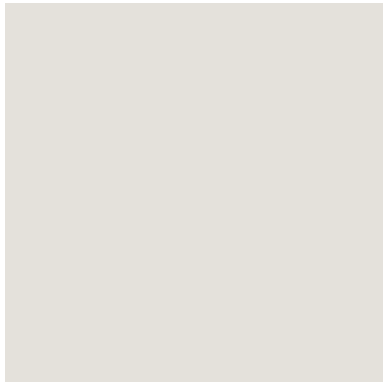
C1BVAF-BZDL-M011AA
Furniture Silver Birch White100A
Finished Thickness:1.0mm
Bio-based Content (Coating):50%



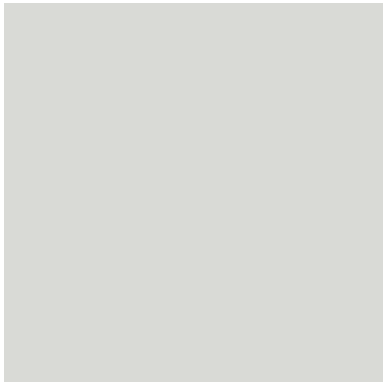
C1BVAF-BZDL-M006AA
Furniture Brown Apricot100A
Finished Thickness:1.0mm
Bio-based Content (Coating):50%



C1BVAF-BZDL-M005AA
Furniture Cement Beige100A
Finished Thickness:1.0mm
Bio-based Content (Coating):50%



E1BVAD-SZDL-M001AAT
Furniture Dew White115A
Finished Thickness:1.15mm
Bio-based Content (Coating):30%



C1BVAC-BZDL-G011AB
Furniture Silver Birch White100B
Finished Thickness:1.0mm
Bio-based Content (Coating):20%



C0BUCA-BCDL-H003
Furniture Yellow110A
Finished Thickness:1.10mm

Product Specifications for furniture usage

Item	Values
Width	1.37 ± 0.05m
Content for coating	Mycelium composite resin, vinyl ester resins, vegetable oil derivatives.
Content for backing	Cotton or recycled PET

Performace	Values	Methods
Adhesion	10.92 N/cm * 9.6 N/cm	ASTM D751
Grab Tensile	627.34 N * 398.45 N	GB/T 8949
Flex Resistance, RT	>200,000 cycles	ISO 32100-2019
Resistance to water	No marks after 30mins, no stain after drying	ISO 15700
Tearing strength	56.23 N * 65.86 N	ISO 4674-1
Abrasion resistance	Taber, 1000g, H-18, >500	J72
NaOH Hydrolysis Resistance	10%, 80°C, 2h, no peeling, no cracks	GB/T 4671-2014
Colour fastness to rubber, dry	9N, 500 cycles, Level 4	GB/T 3920-2008
Colour fastness to rubber, wet	9N, 250 cycles, Level 4	GB/T 3920-2008
Colour fastness to light	Level 4	GB/T 8427
Resistance to chemicals	Color change level 4.5, no peeling, no cracks after treated with chemicals.	Treated with Sunscreen oil, Hand cream, Moisturizing hand cream, Body oil
Color Migration	Level 4.5	J3023
Resistance to damp-heat aging	No cracks	J3026
Abrasion resistance	Martindale, >100,000 times	ISO 12947

Environmental and safety	Standards
No DMF or DMFA	
No heavy metal and related compounds	REACH compliant
No phthalates	ROHS compliant
No Chlorinated Solvents, Volatile Organic Compound (VOC) or other organic solvents	
No Short Chain Chlorinated Paraffins	ISO 18219-1:2021