

**TBM and Bioworks start accepting pre-orders for Bio Face^{*1},
a washable and reusable face mask made of biomass-based yarn**

2020.4.27 TBM.,co Ltd、 Bioworks Co.Ltd About 5 min

- TBM and Bioworks are pleased to announce the launch of Bio Face, a washable and reusable face mask made of biomass-based yarn.
- Bio Face masks are made of PLA (polylactic acid) yarn, a biomass-based material.
- TBM and Bioworks will promote reuse of face masks to help resolve the shortage of face masks worldwide, and at the same time strive to improve the environmental footprint by using renewable biomass-based resources. Production of Bio Face outside of Japan is also planned.
- TBM and Bioworks are also looking for partner companies and organizations that can market and distribute Bio Face masks.

^{*1} "Bio Face" is applied for trademark registration by Bioworks Co., Ltd.



"Most of the disposable face masks are made of petroleum-derived plastic, and—as face mask consumption increases—appropriate disposal of face masks is becoming critical as there are masks washed out to sea and ended up on beaches^{*2}.

By supplying biomass-based and reusable Bio Face masks all over the world, including countries and regions where the COVID-19 is spreading as well as developing countries that are faced with shortage of face masks, TBM and Bioworks are striving to protect people around the world from the risk of infection, and the global environment," said Nobuyoshi Yamasaki , CEO of TBM, regarding the goals of Bio Face development.

TBM and Bioworks have collaborated with SHIMA SEIKI MFG., LTD., the world's leading manufacturer of knitting machines, and achieved a mask design that is comfortable and easily fits the shape of a face, by knitting masks three dimensionally with the WHOLEGARMENT^{*3} machine (the seamless knitting machine of SHIMA SEIKI MFG.) etc., using the PLA yarns developed through collaborations among the three parties. TBM and Bioworks plan to start producing Bio Face masks in and outside Japan, from June of 2020.

TBM and Bioworks have started accepting pre-orders for Bio Face masks. Please refer to the link at the end of this press release to make a pre-order of our face masks. Regarding orders from overseas, TBM and Bioworks will register for local certifications as necessary.

^{*2} Reuters (2020) "Discarded coronavirus masks clutter Hong Kong's beaches, trails"

^{*3} "WHOLEGARMENT" is a registered trademark of SHIMA SEIKI MFG., LTD.

■ Bio Face features

- Bio Face masks help to prevent spray from coughing and sneezing and can also reduce exposure to various allergens.
- Bio Face masks can be washed and reused. They can be washed around 30 times.^{*4}
- Bio Face masks have been reported to be antibacterial and mildly acidic (close to human skin) by a Japanese testing laboratory^{*5}.
- Bio Face masks are comfortable and fit the shape of a face, since they have a 3D knit shape that leaves room around the mouth.
- Bio Face masks can be equipped with commercially available virus filters, cotton gauze, and similar accessories.

^{*4} The washing durability is based on the test results of Bioworks Co., Ltd as of April 27. The test is still continuing for washing durability over 30 times.

^{*5} Nissenken Quality Evaluation Center



■ PLA, the main raw material

- PLA (Polylactic Acid) has been approved to be used for food contacting packaging etc. in the USA, Europe and Japan.
- PLA is a biomass-based plastic made from a biomass resource such as corn starch, and emits less CO₂ compared with traditional petroleum-based plastic when burned (based on calculations from their chemical structure), and biodegrades in industrial compost environments. PLA hardly degrades in normal environments, and therefore can be used for a prolonged time.

■ Specifications

Raw material: PLA (polylactic acid). For ear loop and mask frame, polyurethane and nylon are partially used.

Sizes: XS (for children), S and M

Suggested retail price: 1,500 Japanese Yen (including design and stitching, not including VAT),
1 mask per package

* Discount prices will be offered for bulk orders from corporate customers.

Production country: Japan and outside of Japan

Color: Base color is planned to be gray. Coloring (dyeing) is possible for bulk orders and adding logos by stitching is also possible.

Production capacity: Up to 100 thousand masks per month, targeted by July 2020

URL: <https://tb-m.com/en/limex/products/bioface>

【Precautionary statement】

- Bio Face does not block the invasion of virus splashes and pollen in the air.
- It is recommended to install a commercially available virus cut filter to block the invasion of viruses and pollen.
- Antibacterial means "to suppress bacterial growth on the surface of the product," and does not mean to kill or decontaminate the bacteria.

- Hand wash is recommended when washing, and if washed with a washing machine please put the mask in a laundry net.
- Please note that the product shape may change, if the mask is washed with a washing machine.
- Please do not use dryers, bleach nor softening agents. Please use a neutral detergent for washing.
- Please do not expose the mask to direct sunlight when drying.
- We do not accept return or exchange after purchase. Thank you for your understanding.

【Order / Contact Information】

If you are considering using or selling this product, or if you are interested, please contact us from the following.

<https://tb-m.com/en/contact/>

■ TBM Co., Ltd.

CEO Yamasaki Nobuyoshi

Head Office 2-7-17-6F, Ginza, Chuo-ku, Tokyo, Japan

Founded 2011

Capital 10,864million yen (Including legal capital surplus)

Business description Development, manufacturing, and sale of LIMEX and LIMEX products

URL <https://tb-m.com/en/>

■ Bioworks Co.Ltd

CEO Yukihiro Imai

Head Office Kyoto HQ & Lab Laboratory Wing 7F, 1-7, Hikaridai, Seika-cho, Souraku-gun, Kyoto 619-0237

Founded 2015

Capital 309.57 million yen (Including legal capital surplus)

Business description Development, Development, manufacture and sales of Plax

URL <https://bioworks.co.jp/en/company/>

Contact :

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Source : TBM.,co Ltd、 Bioworks Co.Ltd