

Characteristics of Tsukioka's Water Soluble Edible Film

Patent Pending

1. Multi-layer Manufacturing Process

- Adhesion between the upper and lower layers can be controlled. Upper layer and lower layer are made of different materials and interlayer adhesion can be adjusted

- Adjustable dissolution speed
Dissolution of the film when placed on the mouth can be adjusted depending on the molecular weight of the active element.

- Heat-resistance and hygroscopicity can be changed by the thickness of the layers.

- Adaptable thickness

The thickness can be adjusted in the range 10~500µm

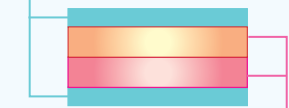
- Heterogeneous multi-layer
Functional ingredients mixed with different layer in a multi layer film.

- Improvement of the protection against the sublimation of the

L-menthol, etc. by the external layers

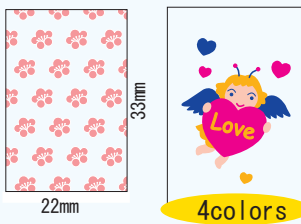
Component of Multi-layer film

Protection layers
(thermostability and hygroscopic)

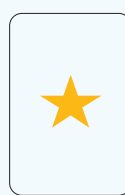


Various Radical
Active Ingredients

2. Edible Ink Printing



3. Pure Gold stamping



Any design can be printed with edible pure gold making it a high value product.

4. Embossing-Engraving



Tsukioka's high printing technology is used

5. Ultra-Fine Particle

Ultra-fine particle of Pure Gold
Pure Platinum in the Film

Imperceptible but uniformly mixed 3 nano size of pure gold, platinum can be incorporated in the film.

6. Mixing Active Ingredients

A maximum of 40% of active ingredient can be mixed.
Coenzyme Q10, α -lipoic acid
Blueberry extract, Collagen,
Red pepper, Horseradish, Pepper,
Vitamin, Chinese medicine, and medicinal form can be mixed.

7. Various Flavors

Orange, Lemon, Strawberry,
Green tea, Coffee, Rose,
Blueberry, Grapefruit,
Grape, etc. are available

8. Different Flavors in One Case



2, 3 different flavors can be mixed in a 24 strips case.

9. Crushed Edible Film

The film can be crushed, 1~2mm size that gives a refreshing feeling when spread in the mouth. It can be used for topping cakes.



11. Aluminum, Blister, Individual Packaging



70mm
Aluminum Package

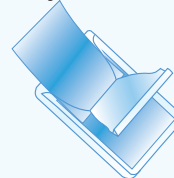


78mm
Blister Package



120mm
Individual package

24 strips 22mm x 33mm per plastic case.
Size and content can be adjusted.



11. Slitting

Possibility to cut in the range of 2mm to 600mm.

12. Food Package

- Soft capsule.
- Food products and paste rolling film.
- Diet liquid wrapping.
- Starch film packaging.

Various kinds of edible film can be manufactured

Starch

- Amylose film
- Amylopectin film

Protein

- Gelatin film
- Silk (Fibroin) Film
- Casein film

Fiber thread polysaccharide series

- Pullulan film
- Guar gum resolvent film
- Soybean polysaccharide film
- Agaragar film
- Cellulose HPC film

HPMC film
Carboxymethyl cellulose film etc.

- Arabinoxylan film
- Alginate sodium film
- Calla geenan film
- Pectin film