# UJV300DTF-75 dedicated Mimaki UV DTF Film

## PRODUCT GUIDE V1.00

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MIMAKI ENGINEERING CO.,LTD
Global Marketing Department

# INDEX

**What is Mimaki UV-DTF?**

**Mimaki UV DTF Film Product Features**

- ✓ Easy decoration on uneven or curved surfaces
- ✓ Maintains high adhesion and durability (resistant to water, cleaning, and heat)
- ✓ High-quality finish on solid areas and edges
- ✓ Film transport stability
- ✓ Improved workability with anti-static film coating




**Precautions when removing A Film and Printing conditions for transferring the image from A Film to B Film**

**Mimaki UV DTF Film A and B Film Composition and Comparison of Manufacturers' Specifications**

**Mimaki UV DTF Film Certification Status and Compliance with Chemical Substance Regulations**

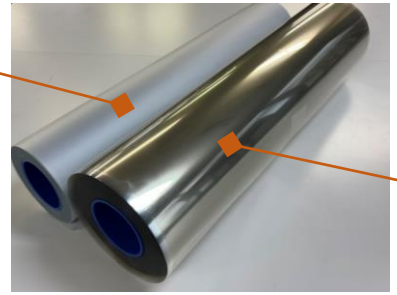
**Mimaki UV DTF Film Model Number, Product Name, Packaging, and Pallet Loading**

# What is Mimaki UV-DTF?

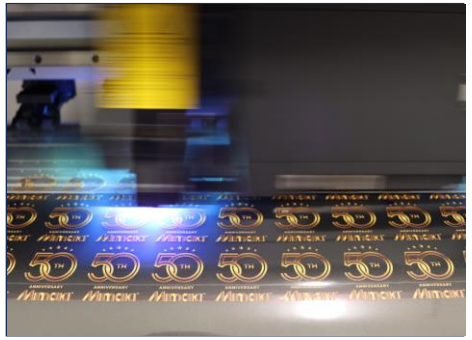
**What is UV-DTF（UV Direct to Film）?**
**Technology that allows UV printing on a special glued film (A film) and application sheet (B film) to be attached and transferred like stickers.**

## Easy 3 Steps

**Printable on surfaces and materials that could not be printed on before**




### Step 1
**～Print～**



**Prints data on glued film (A film)Fully automatic up to application sheet (B film) pasting**

### Step 2
**～Paste～**



**Cut out the printed material and paste the printed material on the item you want to paste.**

### Step 3
**～Transliteration～**



**Peel off the application sheet (B film), and the transfer is complete.**

# What is Mimaki UV-DTF?（A Film, B Film）

## UJV300DTF-75



**Two types of media used**

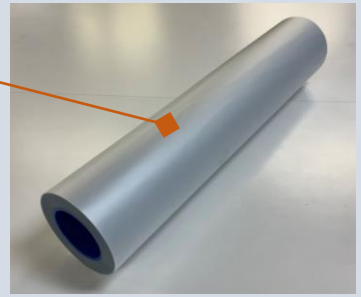
**Maximum printing width: 640mm:**

**Set on the front of the machine**

### Application Sheet（B Film）

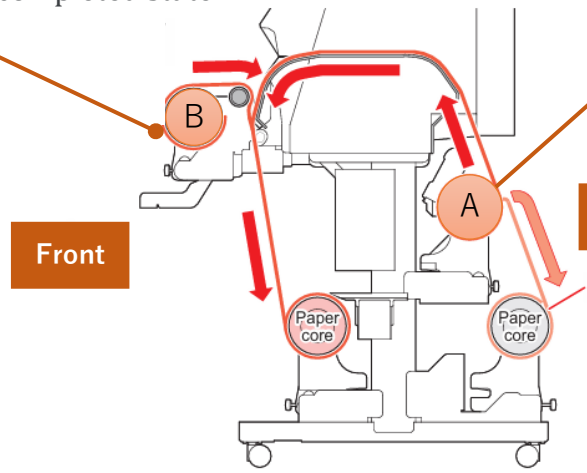
**Size/Weight：620mm×100m （7kg）**

B Film



**Product Name : Mimaki UV DTF Film B**
**Product Code：MIU-110-620-100**

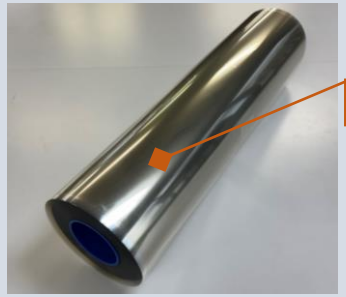
Media set completed state




**Set on the back of the machine**

### Special glued film（A Film）

**Size/Weight：620mm×100m （14kg）**

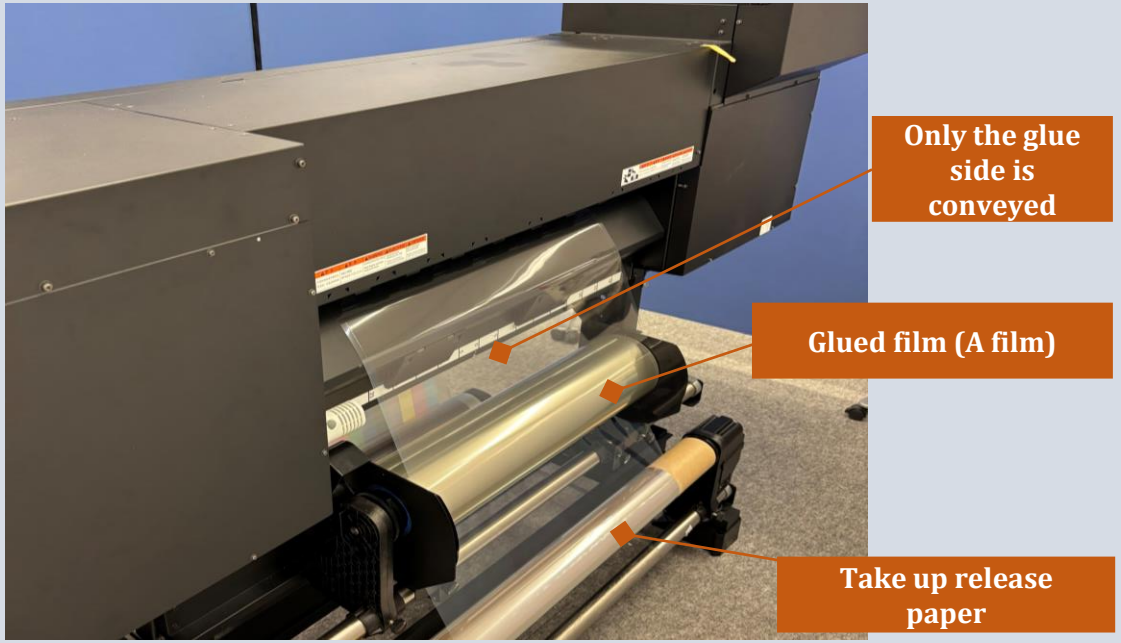


A Film

**Product Name: Mimaki UV DTF Film A**
**Product Code：MIU-100-620-100**

# What is Mimaki UV DTF? (A and B Film Settings)

## Special glued film（A Film)




The machine automatically feeds the glued film (A film) and take-up the release paper at the rear of the machine. The release paper is taken up precisely at the machine's feed speed, allowing for reliable printing.

## Application Sheet (B film)






Easy operation by simply pushing the lever to set the application sheet. Crimping rollers are made of sponge fabric for better adhesion

# Mimaki UV DTF Film Product Features

## "Even uneven surfaces and curved shapes are no problem!"

→ Easily decorate even 3D objects that are difficult to print on using traditional UV printing methods (See page 7)

## "You can freely add additional prints later."

→ Supports overprinting, one-point printing, and additional designs (see page 7)

## "Strong adhesion to a wide range of materials, high durability, and resistance to water, cleaning agents, and heat"

→ Maintains high adhesion and durability on various materials such as glass, stainless steel, and ceramics. Also ensures water resistance, cleaning agent resistance, and heat resistance (See pages 8-10).

## "Clear image quality and high-quality finish“

→ Achieves a high-quality finish that surpasses other products in terms of color reproduction and edge sharpness (See page 11).

## "Stable film transport"

→ Stable transport even at high-speed printing, reducing problems (see pages 12-14)

## "Improved workability with anti-static film coating"

→ Effectively suppresses film lifting and dust adhesion, reducing the need for rework (see page 14)

# Mimaki UV DTF Film Product Features

## Easily decorate uneven or curved surfaces, which was difficult with conventional UV printing

- ✓ A decoration method in which a design printed on a special film is transferred onto the target material.
- ✓ It is possible to easily decorate uneven or curved surfaces, which was difficult with conventional UV printing.
- ✓ Using a high-quality printer with high image quality reduces graininess, expresses beautiful gradations, and can accurately print small characters and thin lines.

### UJV300DTF-75 Product examples



Helmet



Mug



Electric kettle



Flowerpot



Wine glass


Skateboard


Electronic device



Trash can(Functional Indication)

# Mimaki UV DTF Film Product Features (High adhesion and durability)

**Adheres to a wide range of difficult materials such as glass, metal, and plastic, and maintains high adhesion and durability due to its high adhesive strength.**

【Features】

**Compatible with a wide range of materials**

Strong adhesion even to difficult-to-bond materials such as glass, metal, leather, plastic, and wood

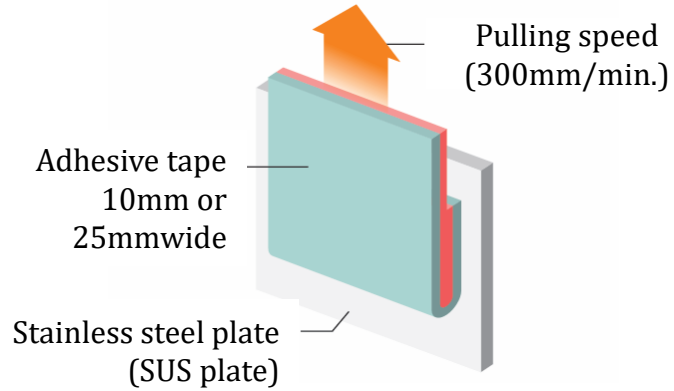
**High durability**

Less peeling or lifting even under repeated friction or in real-life conditions



【Adhesion measurement】

Adhesive tape is attached to a stainless steel plate and pulled at a constant speed. **The higher the reading, the stronger the adhesive strength.**




【Test Result】

The adhesive strength of Mimaki film is 1.3 times that of Company A and 2.7 times that of Company B.

Unit：N/25mm

| Media Type | Mimaki | Company A | Company B |
|---|---|---|---|
| Adhesive strength | 26.5 | 20.6 | 10.0 |

**26.5N/25mm＝ Equivalent to a force of approximately 2.7 kg**

# Mimaki UV DTF Film Product Features (Dishwasher Test)

## Excellent water and cleaning resistance against glass, stainless steel, and ceramics

**Dishwasher test by Mimaki/Company A/Company B media**

**【Dishwasher Test 】**
10 cycles of hot water washing (over 60°C) and drying were performed in a household automatic dishwasher, and cracks, damage, discoloration, deformation, etc. were confirmed.



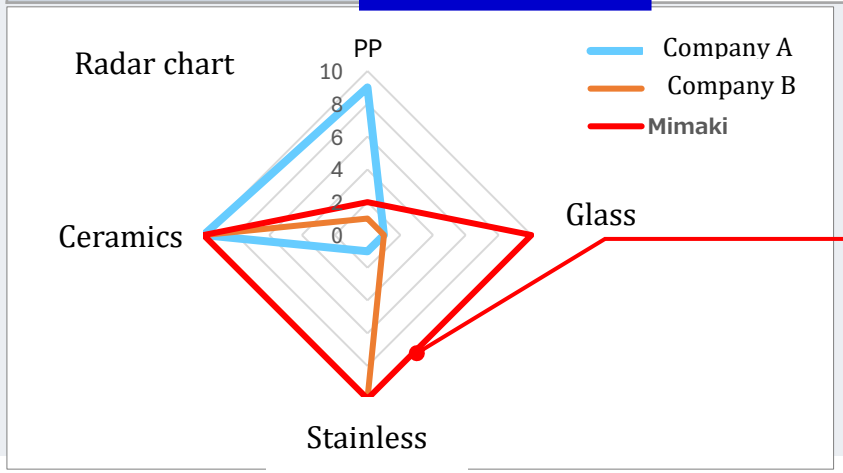

**Evaluation Data**



**Evaluation sample**
Polypropylene (PP) / Glass/
Stainless steel / Ceramic tableware

**Dishwasher test results**
**(10 cycles each, counting the number of successes)**

| Substrate \ Company | Mimaki | Company A | Company B |
|---|---|---|---|
| PP | 2/10 Cycle | 9/10 Cycle | 1/10 Cycle |
| Glass | 10/10 Cycle | 1/10 Cycle | 9/10 Cycle |
| Stainless steel | 10/10 Cycle | 1/10 Cycle | 1/10 Cycle |
| Ceramics | 10/10 Cycle | 10/10 Cycle | 0/10 Cycle |
| Success rate | 80％ (32/40 Cycle) | 53％ (21/40 Cycle) | 55％ (22/40 Cycle) |




**Mimaki**
Wider coverage than other companies

PP :×
Glass :◎
Stainless:◎
Ceramics:◎

# Mimaki UV DTF Film Product Features (Heating (Microwave) Test)

## Excellent heat resistance against glass and ceramics (Mimaki/Company B are equivalent, Company A is inferior)

**Heating test by Mimaki/Company A/Company B media**

【Heating test】

- **PP: Microwave high-frequency suitability test**
  (JIS S 2029 7.10 compliant)
  Place the dish in the microwave and heat at 600W for 3.5 minutes.

- **Glass: Thermal shock test** (JIS S 2030 compliant)
  The dishes are kept in an incubator adjusted to 120°C or higher (tolerance +8°C) for 30 minutes.

- **Ceramic: Microwave test**
  Fill the container with water and bring to a boil in the microwave (1000W).

Criteria: Check for cracks, damage, discoloration, deformation, etc.



Evaluation sample
Polypropylene (PP) / Glass/
Stainless steel / Ceramic tableware

**Heating test results: Each was run for two cycles, and the number of successes was counted.**

| Substrate \ Company | Mimaki | Company A | Company B |
|---|---|---|---|
| PP | 1 /2 Cycle | ½ Cycle | ½ Cycle |
| Glass | 2/2 Cycle | 0/2 Cycle | 2/2 Cycle |
| Ceramics | 2/2 Cycle | 2/2 Cycle | 2/2 Cycle |
| Success rate | 84％ (5/6 Cycle) | 50％ (3/6 Cycle) | 84％ (5/6 Cycle) |

**Mimaki**
**No abnormalities when heating glass or ceramics.**
Be careful when heating PP.

# Mimaki UV DTF Film Product Features (Solid Surface, Edge Quality)

## The quality of the solid and edge areas is superior to other companies

Adhesion evaluation of solid and edge areas by Mimaki/Company A/Company B media

**Adhesion**

After printing the data and attaching it to the substrate (tumbler), performed a nail evaluation of the solid and the edges area.

**Evaluation criteria**

5. No peeling
4. Peels off when rubbed hard
3. Peels off when rubbed lightly ]
2. Peels off when rubbed lightly
1. Falls apart as soon as applied

**Evaluation Data**

Nail evaluation is performed using 10 pieces of data, and the average of the total scores is calculated as a score.




**Nail evaluation results**

**Solid printing area**

| Media | 1 time | 2 times | 3 times | Average |
|---|---|---|---|---|
| Mimaki | 5 | 5 | 4 | 4.7 |
| CompanyA | 4 | 4 | 4 | 4.0 |
| Company B | 5 | 5 | 4 | 4.7 |

**Edge Printing area**

| Media | 1 time | 2 times | 3 times | Average |
|---|---|---|---|---|
| Mimaki | 4 | 4 | 3 | 3.7 |
| CompanyA | 2 | 3 | 2 | 2.3 |
| Company B | 3 | 3 | 3 | 3.0 |

**Edge image**



**Mimaki**



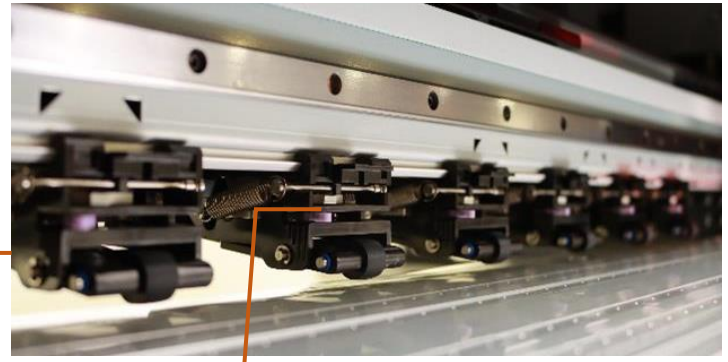
**Company A**

# Film transport stability (UJV300DTF-75 uses a proprietary pinch roller)

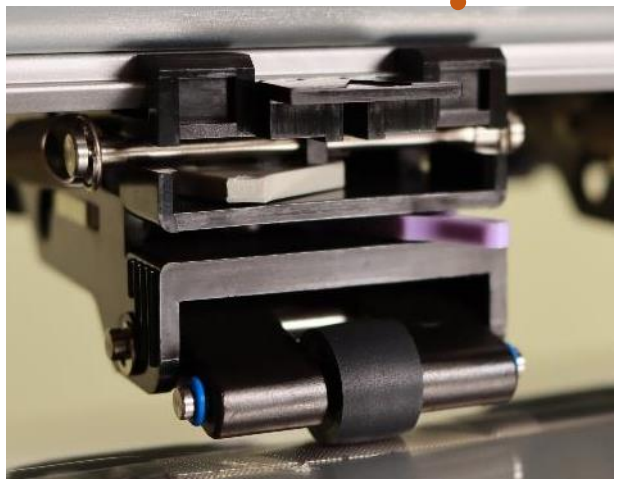
**Pinch roller transport allows for stable winding (transport) of media without meandering.**
**Other companies: Because the film is transported solely by the winding device, it is prone to meandering and media jams can occur frequently.**




**Supports media transport with up to seven pinch rollers**



**Enlarged view**



**Dedicated pinch rollers for UV-DTF film ensure high-precision transport**

# Film transport stability (ball tack (stickiness) evaluation)

## Mimaki UV DTF Film has low tack (stickiness), so the adhesive does not stick to the pinch roller.

Relationship between Pinch Rollers and Film

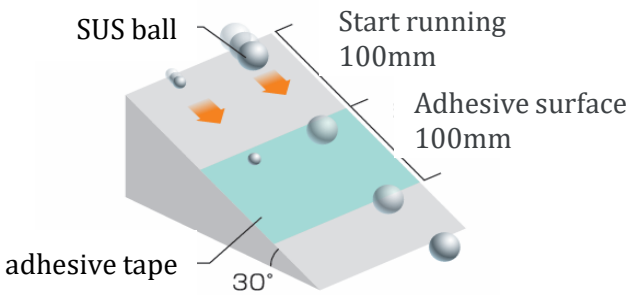
If the film is highly tacky,
the adhesive may adhere to the pinch roller,
causing film meandering and film jams.

Film with low tack (stickiness) is optimal.

**Mimaki film is the best choice.**

**【Ball tack (stickiness) measurement】**

Adhesive tape is attached to the middle of a 30-degree slope, and a steel ball is rolled over it. The adhesive strength is measured by the size of the largest ball that can stop on the adhesive surface.




**【Result】**

Company A rolled a .0 mm, while Mimaki and Company B continued rolling without stopping.

**Company A had a lot of stickiness, while Mimaki had little stickiness.**

| Media | Unit | Mimaki | Company A | Company B |
|---|---|---|---|---|
| Temperature | | 25℃ | 25℃ | 25℃ |
| Steal Balls | Size | ϕ7 | ϕ7 | ϕ7 |
| Stop distance | mm | No stop | 41.0 | No stop |

ϕ:Diameter length (unit: mm)

# Film transport stability　(A Film feature)

## A Film Features :　1. Anti-static coating reduces static electricity problems.
## 2. Thick release liner ensures stable print transport.

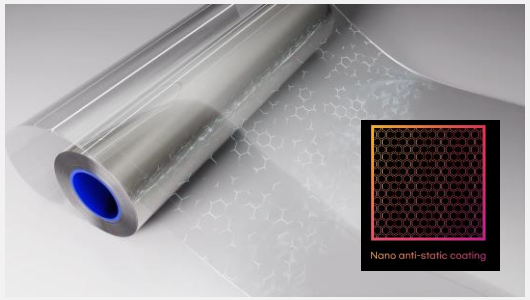
### 1. Reduces static electricity problems

**A film uses the latest anti-static coating on the back**
**（Charge Amount：Mimaki　$10^{6\sim7}$、Other media　$10^{12}$ or more（unit：Ω）　a difference of a million times)**
**Compared to other medias, problems caused by static electricity during transport are significantly reduced**

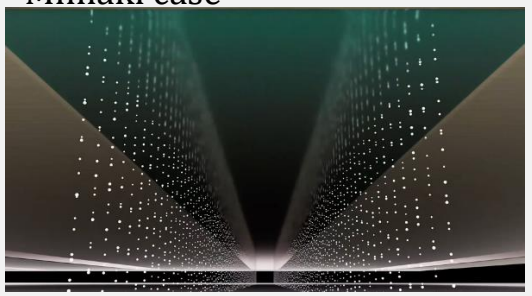
**【Main effects】**

**•Improved film stability**
Effectively suppresses film lifting and dust adhesion

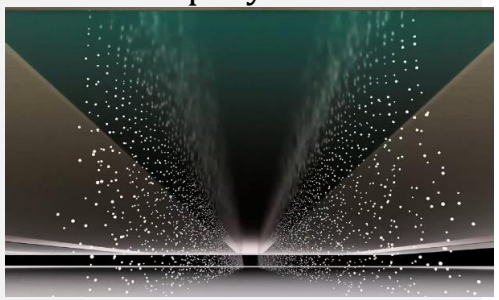
**•Achieve high-quality printing**
Minimize ink splatter and print disturbances




Ink scattering situation
Mimaki case



Other Company cases



### 2.　A thick 100μm release liner ensures stable printing.

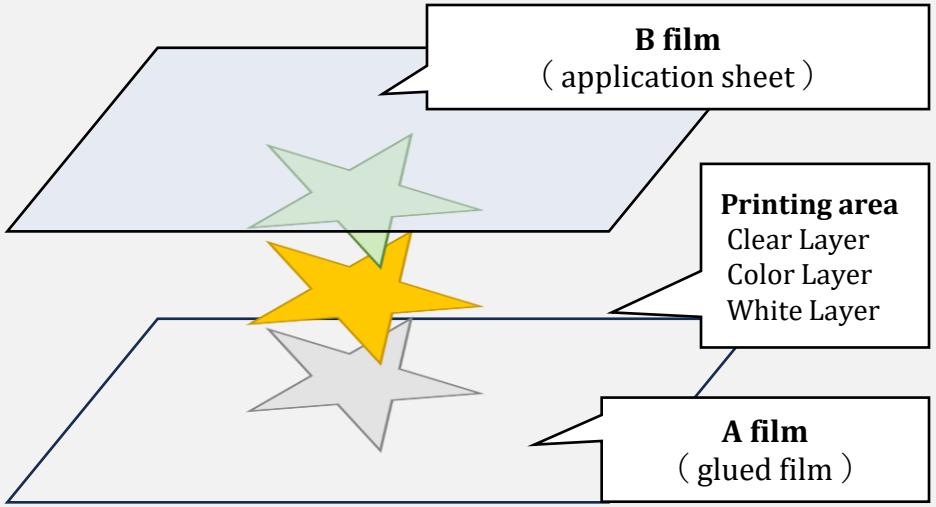
**A Film uses a 100μm ultra-transparent polyester substrate.**
**Competitor films are 75-80μm thick; thicker films generally have better transportability.**

**【Key Benefits】**

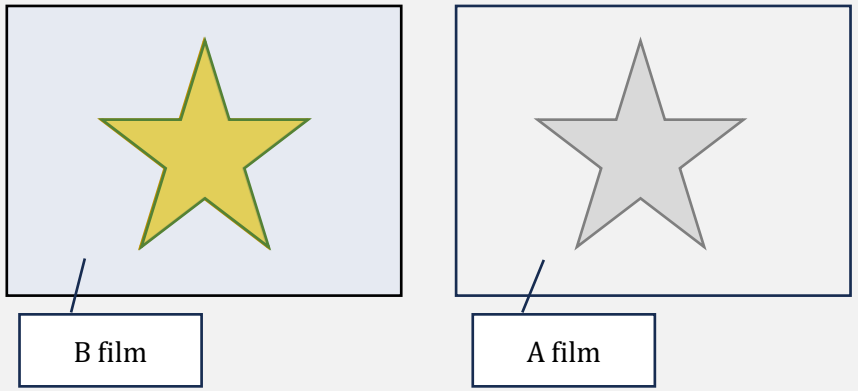
•Stable printing performance:
Compared to standard release paper types and thin polyester substrates, this paper minimizes the risk of head crashes and printing errors that can easily occur when using a printer

# Precautions when peeling off film A
# Transfer of the printed part from film A to film B

## Structure of UV-DTF

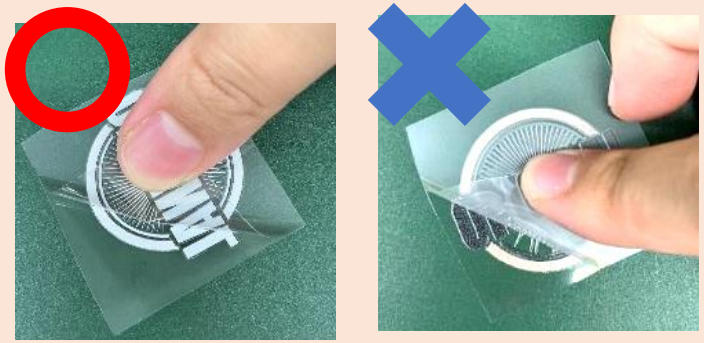



After crimping, **the colored (+clear) layer is visible under the B film, the white layer is visible under the A film.**



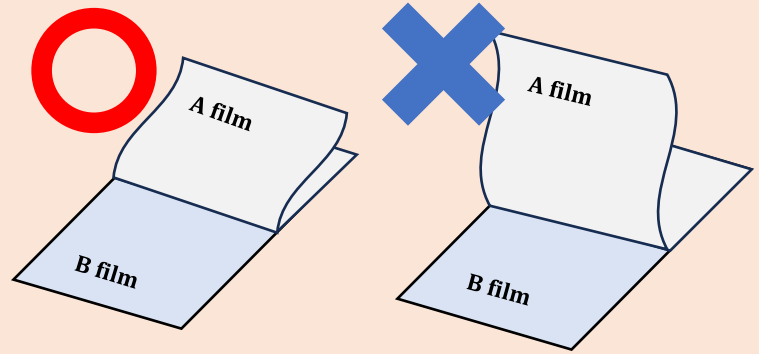

## Cautions for removing film

- **Peel off the A film (the side with the white layer visible)**



- **A Film is peeled off slowly, leaving it lying down as much as possible.**

If the film is peeled off quickly while standing, especially small letters may be pulled out of position by the film.




- **Working on the desk, peel off the B film while holding it down so that it does not float.**



# Printing conditions for transferring printed part from A Film to B Film

## Test of peeling off Film A (A/B printed part transfer) with different print patterns, heater temperatures and surface treatments

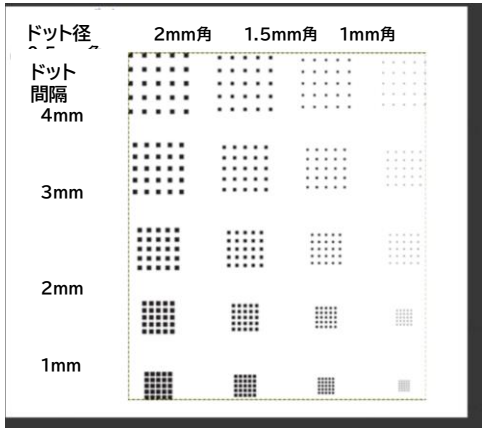
**Printing Conditions**

| | |
|---|---|
| Resolution | : 600 x 600 dpi |
| Print Pattern | : 4 types |
| Heater Temperature | : 60°C, 70°C |
| Surface Treatment | : Matte, Gloss |

**Test Results**
See below for recommended conditions for each pattern.
Surface Treatment : Gloss finish is less likely to peel
Heater Temperature : 70°C is less likely to peel than 60°

### Dot Printing

Dot Diameter
(0.5mm～2mm square)
Dot spacing (0.5mm～4mm)




**Recommended conditions:**
**2.5mm square,**
**4mm spacing or more**

### Font Printing

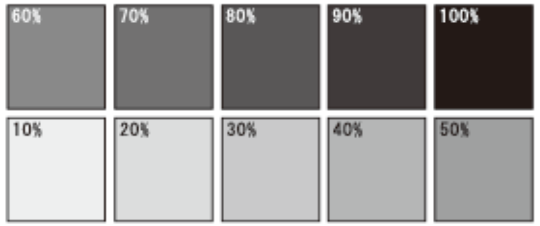
Font (1～14pt)




**Recommended conditions:**
**5pt or more**

### Solid Printing

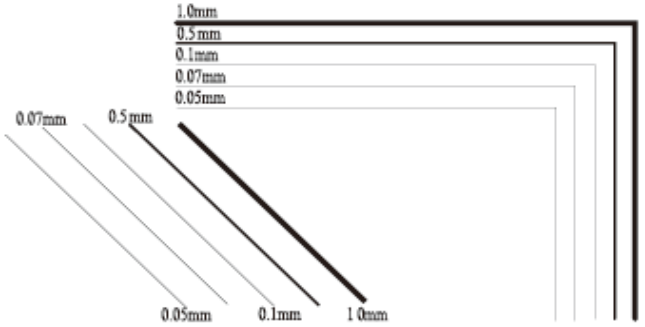
Solid Pattern(10%～100%)




**Recommended conditions:**
**No problem**

### Diagonal Line Printing

Diagonal Line(0.05mm～1.0mm)

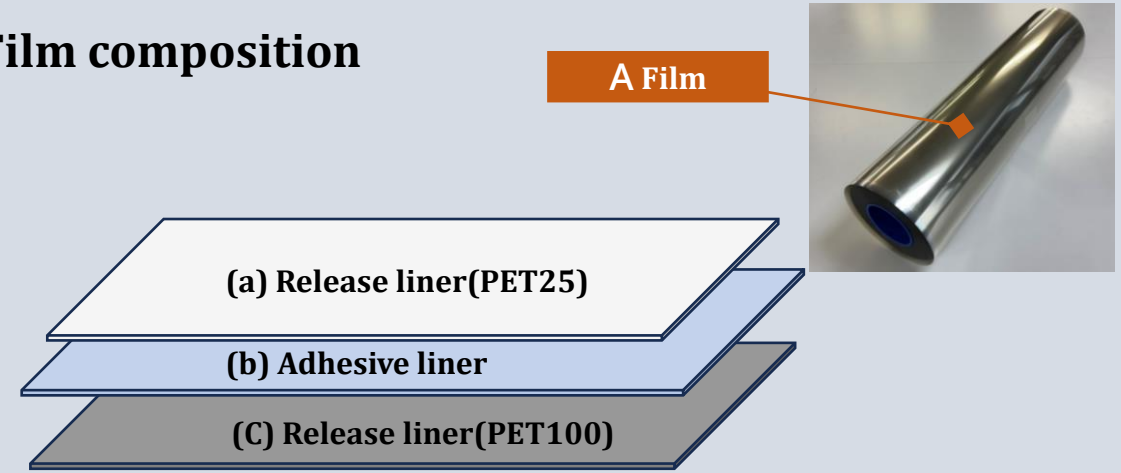



**Recommended conditions:**
**0.2 mm or more**

# Mimaki UV DTF A, B Film Composition

## Special glued film（A Film)

### A Film composition




**Features**

① 3 layer structure
② Thick liner for excellent paper transport, anti-static coating on the back
③ This high-quality film is less sticky when transporting paper and has strong adhesion to the substrate.

| | |
|---|---|
| Size | 620㎜×100ｍ |
| Thickness (Basis Weight) | 155 μm（235 g/㎡） |
| Adhesive strength | 2700g/25mm |

| Compositon | |
|---|---|
| (a) Release liner（PET25） | 25μm |
| (b) Adhesive Liner | 30μm |
| (c) Release Liner（PET100）<br>※Back side: Anti-static coating | 100μ |

## Application Sheet (B film)

### B Film Composition




**Features**

① The surface has a matte finish
② Unlike competing products, the stickiness caused by plasticizer bleeding from B Film is less likely to occur.
③ Safe to store and preserve printed materials in layers

| | |
|---|---|
| Size | 620㎜×100ｍ |

| Composition | |
|---|---|
| Transparent film (PVC) | 85μm |

# Comparison of media specifications by company

**Mimaki's products have a thicker release liner and adhesive layer than other companies, and have stronger adhesive strength.**

| | | | Mimaki | Company A | Company B |
|---|---|---|---|---|---|
| **Common to both films** | FILM　Size | | 620mm x 100M | 600mm x 100M | 600mm x 100M |
| | Operating Environment | Temperature | 20～25℃ | unknown | 23±1℃ |
| | | Humidity | 55±10% | unknown | 50±5℃ |
| | Storage environment | Temperature | 20～25℃ | 25±2℃ | 23±1℃ |
| | | Humidity | 55±10% | 45%～65% | 50±5℃ |
| | Warranty Period | | 12 months | 1 year in unopened, packaged condition | 12 months |
| **A FILM** | makings | Release Liner | PET-25（25μm） | PET-25（25μm） | PET-25（25μm） |
| | | Adhesive lay | **Acrylic Adhesive (30-31μm)** | Acrylic Adhesive（20μm） | unknown |
| | | Release Liner | **PET-100（100μm）** | PET（75～85μm） | unknown |
| | Thickness (Backing paper + Adhesive layer + Release paper) | | 155±5μm | 132μm | 250±53μm |
| | Viscosity | | **26.5±2N/25mm** | 20.6N/25mm | 10N/25mm |
| **B FILM** | makings | | PVC | PVC | PVC |
| | Thickness | | 85±5μm | 86μm | unknown |

# Mimaki UV DTF Film (certification status, compliance with chemical substance regulations)

## International Standards

UV DTF Film is manufactured in accordance with the following international quality and environmental standards:
ISO 9001 (Quality Certification) Certified
ISO 14001 (Environmental Certification) Certified

## Chemical Substance Regulations

MSDS: Material Safety Data Sheet available
RoHS/REACH: Compliant
OEKO-TEX: Not applicable (non-woven fabric, non-contact use)

Note: When used in textiles, including embroidery printing, testing for azo dyes and OEKO-TEX is required. For toy use, testing for heavy metals is required (currently untested and unassessed).

# Mimaki UV DTF Film ( Product Code, Product Name, Packaging, Pallet loading)

## A, B Film product code and product name

| Classification | Product Code | Product Name | |
|---|---|---|---|
| A Film/B Film set | MIU-120-620-100 | Mimaki UV DTF Film AB Set | * |

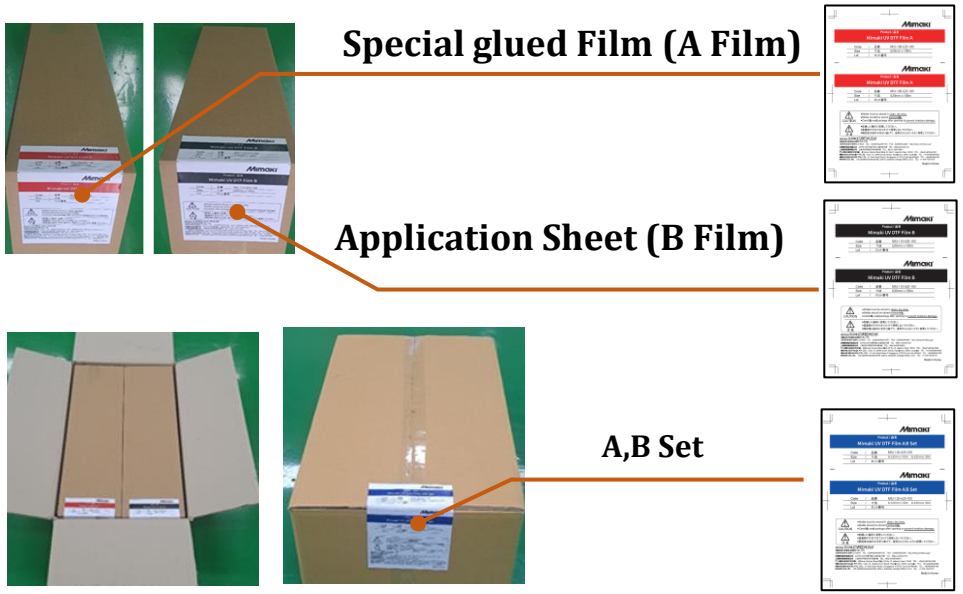
＊Orders are made in sets

Reference

| | | | |
|---|---|---|---|
| Special glued film （A Film) | MIU-100-620-100 | Mimaki UV DTF Film A | ** |
| Application Sheet (B film) | MIU-110-620-100 | Mimaki UV DTF Film B | ** |

**The product code and product name have already been registered, but orders will be placed in sets.

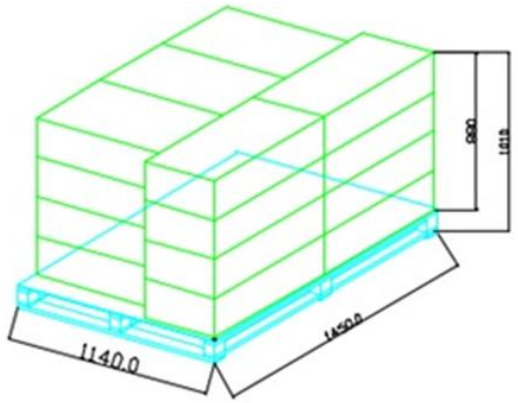
## Packaging format for A and B Film




Put Film A and B into one box

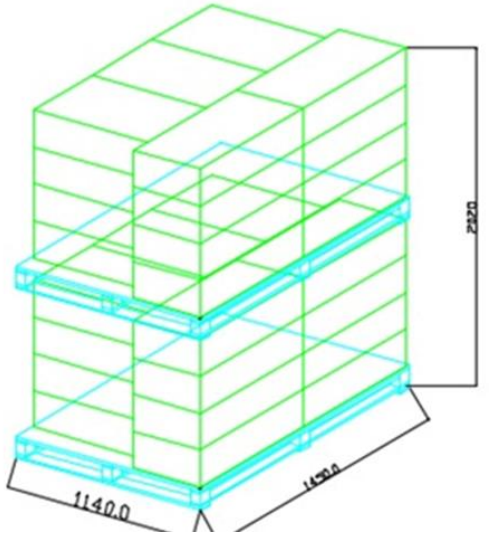
## Pallet loading status

**1 pallet: 20 sets, 2 pallet: 40 sets, 20Ft container: 320 sets**




Pallet Loading Capacity
: 1 pallet = 20 sets

Pallet Size
：1140(W)x1450(D)x1010(H)mm




Pallet Loading Capacity
: 2 pallet = 40 sets

Pallet Size
：1140(W)x1450(D)x2020(H)mm

20ft container load capacity: 320 sets

# Note

## Disclaimer

- All information provided in this product guide is for product description purposes only and does not constitute a legally guaranteed characteristic.
- Mimaki UV DTF Film is designed exclusively for the UJV300DTF-75. We assume no responsibility for any direct or indirect damage caused by using it in combination with any other device.
- Please use genuine ink and maintenance fluid for the UJV300DTF-75. Using other inks and maintenance fluids may affect the printed product, such as reducing print quality and adhesion. We assume no responsibility for any direct or indirect damage caused by such use.
- We assume no responsibility for any direct or indirect damage caused to products created with Mimaki UV DTF Film.

## Storage conditions

- Store in a cool, dry place (20-25°C, 55% ±10% relative humidity) away from direct sunlight.
- Store media flat. Store in the original packaging when not in use.

## Usage method

- Handle media by the edges.  Fingerprints can affect image quality.
- To prevent sweat, grease, or oil from adhering to the media and impairing print quality, wear cotton gloves when handling the media.
- Please note that dirt on the printing surface can affect image quality.

## The specifications in this document are subject to change without notice.