

## Thermal paper for admission tickets

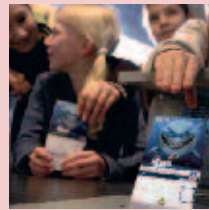




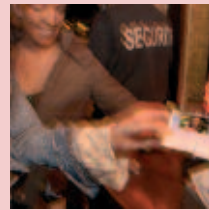
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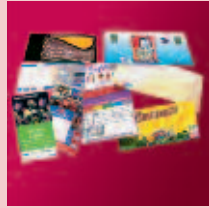
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Member of



International  
Ticketing Association

## **Valuable, stable, forgery-proof and**

Whether you are going to the museum, the cinema, the theatre or a concert, a sports event or a theme park – you can only enter with an admission ticket. And these are very valuable, particularly for a World Cup final, for example. You may have paid a great deal of money for your admission ticket. The paper your ticket is printed on should therefore be absolutely forgery-proof.

Stability and durability are at least as important, so that the ticket maintains its legibility and fulfils its function even in the most difficult conditions.

The advertising industry has long seen admission tickets as a creative communication medium. While the front advertises the latest Hollywood film, a fast-food restaurant tries to attract hungry cinema visitors on the back. Excellent printability of the ticket paper is required, which is not only an admission ticket, but also a positive image and advertising media.

Enough reasons then to use thermal paper by Mitsubishi HiTec Paper Europe in this area.



### ... environmentally conscious.

In order for organisers and customers as well as the environment to profit from the thermal papers by Mitsubishi HiTec Paper Europe, the company has a strict policy of environmentally conscious manufacturing and processing of the thermal papers.

*Colourful variety*  
 The Metropolitan Museum of Art in New York, the Kuala Lumpur Twin Towers, the Australian Open and the Natural History Museum in Flensburg, Germany all have one thing in common: they sell appropriately designed, lavishly printed, colourful admission tickets that many visitors take home as a souvenir. Whether for sports, music or theatre – many organisers have recognised the value of the admission ticket as a positive image and advertising media.





## Papers that can take it.

*thermoscript products by Mitsubishi HiTec Paper Europe are valued by printers and print colour manufacturers alike. Years of research and close collaboration with printing experts have gone into optimising thermoscript papers. The various products offer scope for an astonishing variety of design options.*

*NTC = Non Topcoat*

Mitsubishi HiTec Paper Europe produces thermal papers for admission tickets under the *thermoscript* brand that exhibit outstanding printing properties. Whether a matt or glossy back – these tickets can be brightly printed as advertising media of the highest quality. Namely in all popular printing processes – whether offset UV, Flexo UV or Flexo WB. Furthermore, papers were developed that are specially designed for HP Indigo printing.

In order for the printed advertising message to be well received and the properties of the thermal paper to be optimally used, the following should be taken into account:

- **Printing inks:**  
Printing inks that are suited to thermal printing should be used. The printing inks have to be heat-proof and free of abrasive pigments.
- **UV Flexo process**
  - All topcoated grades are easy to print with the suitable UV Flexo inks.
  - The ink layer thickness/ink quantity (anilox roller) should be kept as low as possible.
  - Only mix blends/mixed colours with transparent white, opaque white has abrasive pigments.
  - In several NTC grades discolouring can be ascertained in bright hues. These NTC grades are not suitable for Flexo UV.



Offset printing process

Individual information is printed in the thermal printer.

- **Flexo WB (water-based)**

- When using suitable heat-proof printing ink series, all thermal papers can be printed without any problems.
- The ink layer thickness/ink quantity (anilox roller) should be kept as low as possible.
- Only mix blends/mixed colours with transparent white. Opaque white has abrasive pigments.

- **Wet offset process**

- Thermal papers are only printable with UV-linking printing inks and respective UV drying systems in the offset process.
- Penetrative oxidative drying offset inks cannot be used on the special surface of thermal paper as drying is not possible through penetration.
- Exact ink-water balance should be heeded. Only use as much fountain solution and ink as necessary.
- Always pay attention to the optimum cure of the printing ink and ensure the emitter capacity is sufficient.
- Insufficiently cured UV inks are not sufficiently heat-proof and stick to the thermal print bar.

A continuative brochure on the topic of "Printing on thermal paper", the current printing ink recommendations and help with any other printing question is available from our technical service:

[technical.service.mpe@mitsubishi-paper.com](mailto:technical.service.mpe@mitsubishi-paper.com)



*The dynamic sensitivity of the thermal papers shows how quickly the thermal paper can be printed. It has a decisive meaning for the selection of the right grade for a certain printer. The higher the dynamic sensitivity of the paper, the quicker a thermal printer can work.*

*high dynamic sensitivity*



*fast printing*



*satisfied customers through speedy processing*

## **Tough papers – gentle on the printer.**

When it comes down to it, *thermoscript* products are tough stuff – but they are surprisingly soft on the print head. Troublesome fouling of the print head, which prevents the perfect energy transfer needed to produce an exact print image, is minimised. This guarantees outstandingly balanced formulations.

The smooth surfaces of the top coated papers are particularly well suited. The experts at Mitsubishi HiTec Paper Europe are happy to advise you on the selection of a suitable paper.

The printing speed is an important topic in the area of admission tickets. After all, right before an event, for example, large numbers of tickets have to be issued within a very short time. Mitsubishi HiTec Paper Europe works in close cooperation with manufacturers of corresponding printers. This guarantees an optimal printing speed, a high-quality print image, fast processing and therefore a real image improvement.



## They can do it.

The demands on the paper for admission tickets are varied. That's why Mitsubishi HiTec Paper Europe pays attention to a continuously good quality from the start and also produces the base paper in-house.

### **thermoscript – the advantages:**

- excellent printability
- high weights available
- produced from own base paper
- excellent print image even in fast printers through high dynamic sensitivity
- high stability and long durability
- no fouling of the print head and therefore long lifespan of the thermal printer
- special grades with matt as well as glossy back pigment coating for excellent printability
- compatible with printing security features
- diverse security features such as Coloured Center and fluorescent fibres in not brightened papers are available
- can be combined with RFID technology
- thermal paper made from recycled paper
- special grades for HP Indigo



*Tickets with a barcode on the back*



#### **Possible security features**

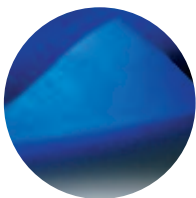
- Coloured Center
- Water mark
- Coloured thermal paper
- UV fluorescent fibres
- UV fluorescent security features under the topcoat
- Specially detectable pigments and reagents
- Anti-fake thermal formulations
- RFID compatible
- Compatible with printing security features

## **Original and forgery.**

Faking admission tickets is a lucrative business. After all, the actual material value of the document is generally fairly minimal. The figures prove it: forgeries cause significant financial loss, create a high security risk and damage the image of the company. US market data shows that between six and eight percent of admission tickets in worldwide circulation are fakes (IMI Conference 2008). Most companies shy away from communicating the damage forgeries have caused them. The fear of damaged image is too great.

Making the thermal paper forgery-proof is erring on the side of caution. In the area of admission tickets, quickly recognisable security features are predominantly used. This includes tickets with a Coloured Center, but also paper that is detectable with test pens and test devices. Several security features that are used in this way can only be tested with state-of-the-art technology and can only be counterfeited with a great deal of effort.

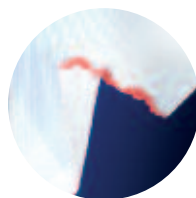
If you choose thermal paper, you are doubly protected. The special paper is, in its composition, very difficult to copy. If further security features are integrated, it becomes almost one hundred percent forgery-proof.



UV fluorescent fibres



Water mark



Coloured Center

Mitsubishi HiTec Paper Europe can look back on many years of experience in the area of forgery-proof papers. Particularly the Coloured Center products from the *thermoscript* series have established themselves in this market. A simple tear makes it possible to check if the ticket is real. Various colours and weights are available to choose from – all on the basis of sensitive and high-quality base paper, which is suited to offset printing.

The use of RFID technology is increasingly important. The method forms an ideal symbiosis with the direct thermal printing process. This meant that, for example, tickets with security features by Mitsubishi HiTec Paper Europe were successfully used on Confederations Cup 2005 and World Cup 2006 and 2010 tickets based on RFID technology.



Unique tickets for special events: Mitsubishi HiTec Paper Europe provided the thermal paper for World Cup 2006 and 2010. Thanks to various security features, these tickets were absolutely forgery-proof.



thermoscript

## Standard grades for admission tickets.

### TOPCOAT

Grade	Weight (g/m <sup>2</sup> )	Sensitivity (Bekk sec)	Chemical Stability	archivability (Years)	UV offset printable
TF ..67	106, 128, 138, 175, 232	high	very good	12	√
TF ..75	107, 127, 232	maximum	very good	12	√
TM ..67	149, 174	high	very good	12	√ <sup>1)</sup>
TM ..75	109, 186	maximum	very good	12	√ <sup>1)</sup>
TZ ..67	182, 249	high	very good	12	√ <sup>2)</sup>

### NON TOPCOAT

Grade	Weight (g/m <sup>2</sup> )	Sensitivity (Bekk sec)	Chemical Stability	archivability (Years)	UV offset printable
T ..33	105, 126, 138, 173, 208	standard	increased	7	√
T ..37	105, 126, 140, 178, 234	standard	very good	25	√
TE ..33	148, 172	standard	increased	7	√ <sup>1)</sup>

<sup>1)</sup> = excellent printability of the back through matt pigment coating

<sup>2)</sup> = excellent printability of the back through glossy pigment coating

Further admission ticket grades, individual solutions and security grades available from our sales department – contact us!



## Good for the environment.

For years, environmentally conscious manufacturing and processing has been observed during the production of speciality paper at Mitsubishi HiTec Paper Europe. The power generation occurs using modern power-heat cogeneration and the environment guidelines at Mitsubishi HiTec Paper Europe greatly exceed country and EU regulations.

The environmental management system of the Flensburg plant is certified according to ISO 14001 since 2000. The Bielefeld plant successfully passed the ISO 14001 certification in January 2011. Both mills are certified according to FSC Chain of Custody – and, naturally, production takes place under compliance with the REACH regulation.

Selected *thermoscript* grades have been awarded the NORDIC SWAN, the highest ecolabel of the international paper industry. Mitsubishi HiTec Paper Europe even offers thermal paper made from recycled paper.

*For further environmental information please contact our Environmental Manager at [environment.mpe@mitsubishi-paper.com](mailto:environment.mpe@mitsubishi-paper.com)*



Print and Paper  
have a great  
environmental  
story to tell



## Make demands on us.

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Our customers make demands on us. They don't want standard products, they want individual solutions.

The R&D department, sales and marketing, engineers and paper makers work together at Mitsubishi HiTec Paper Flensburg to develop the right paper for each application.

Mitsubishi HiTec Paper Europe stands for worldwide service and top quality. Long-standing business relationships with customers all over the world impressively prove this.

### **Mitsubishi HiTec Paper Europe GmbH**

Sales

Niedernholz 23 | 33699 Bielefeld | Germany

Tel. +49 521 2091-516

Fax +49 521 2091-549

[sales.mpe@mitsubishi-paper.com](mailto:sales.mpe@mitsubishi-paper.com)

[www.mitsubishi-paper.com](http://www.mitsubishi-paper.com)