# DNP

a Dai Nippon Printing company

## THERMAL TRANSFER RIBBONS

PRODUCT BROCHURE

# DELIVERING VARIABLE PRINT EXCELLENCE

# CONTENTS

# INTRODUCTION

**Whether you are searching for the answer to a challenging application or looking to broaden your Thermal Transfer Ribbon range, this product brochure is here to make your decision easier.**
**Discover DNP's services and product combinations, and challenge our in-house lab with your toughest applications today!**

## Delivering variable print excellence

Compliant and high-quality variable prints, such as barcodes, are essential in any coding requirement. DNP produces high-quality Thermal Transfer Ribbons that deliver just this. Our expertise is to find the ribbon that meets the exact requirements of your application and production system.

## Peace-of-mind on variable code printing

Variable code printing should in no way compromise your production process and supply chain. The unique cost-to-risk ratio of Thermal Transfer Ribbons makes it a consumable that should perform, be reliable and available at any moment. The constant high quality of DNP Thermal Transfer Ribbons, combined with tailored service that delivers the ribbons to your exact needs, secures peace-of-mind on variable code printing.

## Harmonising substrate, printer and ribbon

For each application, DNP has a ribbon. We work closely with printer and label manufacturers to ensure that the ribbon of choice performs optimally in your production. The main characteristics of the DNP ribbons are provided in the overview. Our experts are available to answer specific questions and help you with your thermal transfer print challenges.

# BENEFITS OF WORKING WITH DNP

## Quality guarantee

DNP Thermal Transfer Ribbons are produced using strict quality measurement systems to ensure high quality products to all our customers. All ribbons are guaranteed for life against any manufacturing defects in normal conditions of use and storage. Suitable for different regulations and compliances, most DNP Thermal Transfer Ribbons are approved for one or more of the following industry certifications: Isega, BS5609, REACH, RoHS, GHS and UL.

## Quick production and delivery

With operations running 24 hours straight on weekdays, DNP ensures short lead times for both made-to-order and stock products. For standard qualities and size specifications order through DNP's stock programme, the Blue Book Programme. When you send in a Blue Book order before 12 o'clock (CET/CEST) on working days, your order will be shipped out the same day. Should you need products tailored to your needs, we can produce made-to-order ribbons within about 5 working days.

## In-house lab testing support

Testing new products can be challenging with production running on the side. This is why we offer to help you test products in DNP's own in-house lab. Let it be a challenging application that you need our help with or simply a ribbon and substrate combination, our Product Management Engineers are ready to take your requests at any time.

## Broad portfolio of ribbons

With offices all around the world, DNP's R&D centres focus on constant improvement of current portfolio products and the development of new products for the Thermal Transfer Ribbon market. To accommodate for a wide variety of end applications in e.g. pharmaceuticals, food & beverage, chemicals, and automotive, DNP offers a broad portfolio of Thermal Transfer Ribbons.

## Tailor made solutions

DNP offers great flexibility when it comes to ribbon sizes, colours, cores, leaders and trailers. As a standard, ribbons are provided with a DNP-leader and a universal trailer. However, there is a possibility to get ribbons tailored to your needs to fulfil your branding requirements.

## VERSATILITY SERIES

### Easy to choose the right ribbon

Ribbons from the Versatility Series are the most versatile in our portfolio. These products work on the widest range of substrates, applications and printer settings. Look for the Versatility Series logo and get started!

# PRODUCT OVERVIEW

| | Flat-head wax | | | Flat-head wax resin | | | Near-edge wax resin | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | **HL Wax** Standard wax | **TR4085Plus®** Resin enhanced wax | **TR3021, TR3022, TR3023** General purpose colour wax | **TR5080** Specialty wax resin | **M255** Premium wax resin | **M265** Ultra durable wax resin | **M295HD** High density wax resin | **M295HD 4.0** X-tra Long high density print-on | **TR4500** Premium wax/resin | **M295C** Colour wax resin | **300** Versatility Defined resin | **R300** General purpose resin |
| **Paper** | | | | | | | | | | | | |
| Uncoated/vellum | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | ✓ | |
| Coated paper | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Glossy paper | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Synthetic | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ |
| (UV) Varnished | | ✓ | | ✓ | ✓ | ✓ | | | | | ✓ | ✓ |
| **Economic Synthetics** | | | | | | | | | | | | |
| Polypropylene | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Polystyrene | | ✓ | | | | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Polyethylene | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Polyester | ✓ | ✓ | | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Polyimide | | | | | | | ✓ | ✓ | | | ✓ | |
| Vinyl (Top-coated) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ |
| **Specialty Synthetics** | | | | | | | | | | | | |
| PVC (Shrink tube) | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ |
| Polyart | ✓ | ✓ | | ✓ | ✓ | | | | ✓ | | ✓ | ✓ |
| Tyvek® | | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | | | |
| Tyvek® brilion | | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | | ✓ | |
| Teslin® | | ✓ | ✓ | | ✓ | | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Textile | | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | ✓ | ✓ | ✓ |
| **Resistance** | Scale: 1 = basic, 2 = moderate, 3 = good, 4 = excellent, 5 = outstanding | | | | | | | | | | | |
| Abrasion | 2 | 3 | 2 | 3 | 3 | 4 | 3 | 4 | 3 | 3 | 4 | 5 |
| Heat | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 3 | 3 |
| Chemicals | 1 | 2 | 1 | 2 | 4 | 3 | 3 | 3 | 2 | 3 | 4 | 4 |
| Max speed* (IPS) | 8 | 12 | 12 | 12 | 17 | 12 | 32 | 36 | 12 | 20 | 18 | 12 |

*Resistance and max speed depends on printer, substrate and printer settings. This overview is based on the most commonly used substrate materials. For a more indepth list of substrates vs ribbon compatibility, please check the Thermal Transfer Ribbon Finder tool on our website.

| | Flat-head resin | | | | | | | | | | | | | Near-edge resin | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **R316** Heat resistant resin | **R510 (HF)** Ultra durable resin | **R550** Extremely durable resin | **TR7541** Boiling resistant resin (also NE) | **R300 Red** General purpose colour resin | **R410D-White** Ultra opaque white resin | **R510C** Ultra durable colour resin | **R510W** Durable white resin | **TR3370** High opacity white resin | **VR301** Durable metallic colour resin | **R395** Textile resin | **UV transparent resin** | **Scratch-off resin** | **✔390** Versatility Defined resin | **R390** General purpose resin | **R396** High speed durable resin |
| | ✔ | | | | | | | | | | | | | ✔ | | |
| | ✔ | | | | ✔ | | | | | | | | | ✔ | ✔ | ✔ |
| | | | ✔ | | ✔ | | | | | | | | | ✔ | ✔ | ✔ |
| | ✔ | | | | ✔ | | | | | | | | | ✔ | ✔ | |
| | ✔ | | | | | | | | | | | | | ✔ | | |
| | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ | ✔ |
| | | ✔ | | ✔ | | ✔ | ✔ | | | | | ✔ | | ✔ | ✔ | |
| | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ | ✔ |
| | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ | ✔ |
| | | ✔ | ✔ | ✔ | | | ✔ | | | | | ✔ | | | | |
| | | ✔ | ✔ | | ✔ | | ✔ | | ✔ | ✔ | | ✔ | | ✔ | ✔ | ✔ |
| | | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ | ✔ |
| | ✔ | | ✔ | ✔ | ✔ | | | | | | | | | ✔ | ✔ | |
| | | | | | | | | | | | ✔ | | | | | |
| | | | | | | | | | | | ✔ | | | ✔ | | |
| | ✔ | | | | | | | | | | ✔ | | | ✔ | | |
| | ✔ | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | | | ✔ | | | ✔ | ✔ | ✔ |
| | 3 | 5 | 5 | 2 | 5 | 4 | 4 | 4 | 3 | 5 | 4 | 4 | 1 | 3 | 5 | 4 |
| | 4 | 4 | 5 | 4 | 3 | 4 | 4 | 4 | 3 | 5 | 3 | 3 | 2 | 4 | 3 | 3 |
| | 4 | 5 | 5 | 3 | 4 | 3 | 4 | 3 | 3 | 5 | 4 | 4 | 2 | 3 | 4 | 3 |
| | 10 | 8 | 8 | 10 | 12 | 6 | 8 | 8 | 8 | 8 | 4 | 8 | 4 | 28 | 12 | 26 |

# FLAT-HEAD WAX

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## DNP

# ✔ TR4085PLUS®
## RESIN ENHANCED WAX

## VERSATILE WAX RIBBON FOR VARIOUS LABEL MATERIALS TO MINIMISE PRINT PRODUCTION CHANGE-OVERS

### Performance characteristics

- High printing speed
- Excellent optical density (Macbeth)
- Abrasion and smudge resistance
- Anti-static back coating for easy handling and extended printhead life
- Halogen-free

### Technical Product Information

| | |
|---|---|
| Ink | Wax (resin enhanced) |
| Colour | Black |
| Total thickness | 8.0 ± 0.5µm |
| Base film thickness | 4.8 ± 0.3µm |
| Ink thickness | 3.2 ± 0.2µm |

### Spider diagram features of TR4085plus®

Colour density
Chemical resistance
Print speed
Heat resistance
Substrate versatility
Abrasion resitance

### Recommended industries

Food & beverage   Health & beauty   Inventory & logistics   Pharma & healthcare   Electronics

### Recommended substrates

| Paper | | | | | |
|---|---|---|---|---|---|
| Vellum | ● | ● | ● | ● | ● |
| Uncoated paper | ● | ● | ● | ● | ● |
| Coated paper | ● | ● | ● | ● | ● |

| Economic synthetics | | | | | |
|---|---|---|---|---|---|
| Polypropylene | ● | ● | ○ | ○ | ○ |
| Polyethylene | ● | ● | ○ | ○ | ○ |
| Polyester | ● | ● | ○ | ○ | ○ |
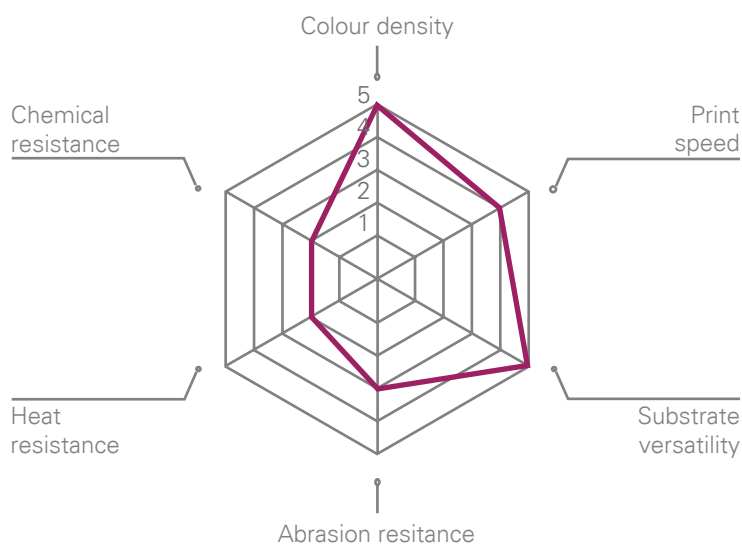
# HL WAX
## STANDARD WAX

### ECONOMY WAX FOR GENERAL PURPOSE APPLICATIONS

**Performance characteristics**

- Excellent optical density (Macbeth)
- High printing speed
- Abrasion and smudge resistance
- Halogen-free
- Anti-static back coating for easy handling
  and extended printhead life

**Technical Product Information**

| | |
|---|---|
| Ink | Wax |
| Colour | Black |
| Total thickness | 7.2 ± 0.4μm |
| Base film thickness | 4.5 ± 0.3μm |
| Ink thickness | 2.7 ± 0.3μm |

**Recommended industries**

Food &
beverage

Inventory &
logistics

Retail

**Recommended substrates**
Find out the recommended
substrates for each ribbon
on pages 05-06

DNP

# FLAT-HEAD
# WAX/RESIN

### DNP

# ✔M255
## PREMIUM WAX/RESIN

**VERSATILITY SERIES**

## VERSATILE WAX/RESIN RIBBON FOR MANY DIFFERENT LABELS TO MINIMISE PRINT PRODUCTION CHANGE-OVERS

### Performance characteristics

- High printing speed
- High print sensitivity
- Medium heat resistance
- Excellent optical density (Macbeth)
- Broad print range
- High scannability
- Good chemical resistance
- Abrasion & smudge resistance
- Anti-static back coating for easy handling and extended printhead life
- Halogen-free

### Technical Product Information

| Ink | Wax/Resin |
| --- | --- |
| Colour | Black |
| Total thickness | 8.3 ± 0.3µm |
| Base film thickness | 4.8 ± 0.3µm |
| Ink thickness | 3.1 ± 0.2µm |

### Spider diagram features of M255
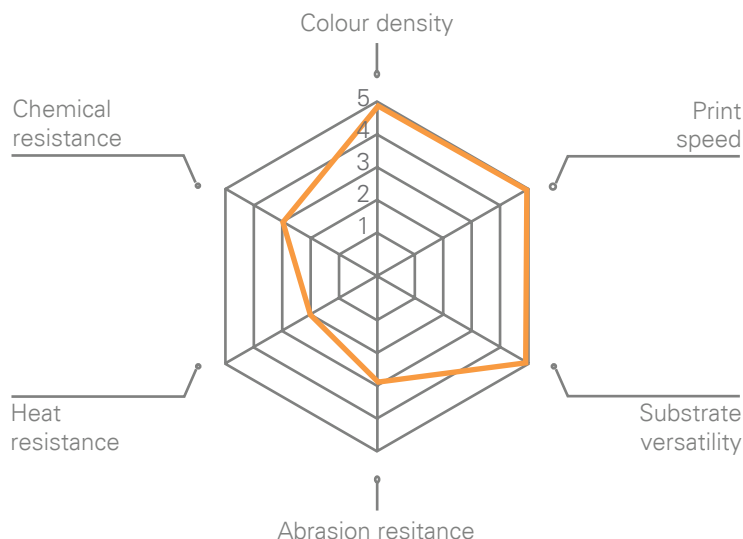


### Recommended industries



Food & beverage

Health & beauty

Inventory & logistics

Pharma & healthcare

Outdoor

Textile

### Recommended substrates

| Paper | | | | | |
| --- | --- | --- | --- | --- | --- |
| Vellum | ● | ● | ● | ● | ● |
| Uncoated paper | ● | ● | ● | ● | ● |
| Coated paper | ● | ● | ● | ● | ● |

| Economic synthetics | | | | | |
| --- | --- | --- | --- | --- | --- |
| Polypropylene | ● | ● | ● | ● | ○ |
| Polyethylene | ● | ● | ● | ● | ○ |
| Polyester | ● | ● | ● | ● | ○ |

# TR5080

## SPECIALTY WAX/RESIN

### ENTRY-LEVEL WAX/RESIN RIBBON FOR MANY DIFFERENT TYPES OF LABEL SUBSTRATES

**Performance characteristics**

- Ideal for printing on spot-coated and flood-coated labels
- Eliminates the cost of special varnishes
- Excellent edge definition for dark, dense images (400 dpi and up) and improved scan rates
- Prints at high printing speeds (12 IPS) delivering crisp, rotated barcodes
- Anti-static back coating for easy handling and extended printhead life

**Technical Product Information**

| Ink | Wax/Resin |
|---|---|
| Colour | Black |
| Total thickness | 8.0 ± 0.5µm |
| Base film thickness | 4.8 ± 0.3µm |
| Ink thickness | 3.2 ± 0.2µm |

**Recommended industries**

Food & beverage  Inventory & logistics  Pharma & healthcare  Outdoor

Textile

# M265

## ULTRA DURABLE WAX/RESIN

### HIGH-END WAX/RESIN IDEAL FOR USAGE ON PREPRINTED LABELS OFFERING HIGH ABRASION AND HEAT RESISTANCE

**Performance characteristics**

- Extreme abrasion resistance
- Extreme temperature resistance
- Prints up to 12 IPS
- Combines the print sensitivity of a wax/resin with the resistance of resins
- Prints both on flat-head and near-edge printers
- Anti-static back coating for easy handling and extended printhead life

**Technical Product Information**

| Ink | Wax/Resin |
|---|---|
| Colour | Black |
| Total thickness | 6.2 ± 0.6µm |
| Base film thickness | 4.5 ± 0.5µm |
| Ink thickness | 1.6 ± 0.5µm |

**Recommended industries**

Automotive  Food & beverage  Health & beauty  Pharma & healthcare

Outdoor  Electronics  Textile

# FLAT-HEAD RESIN

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## DNP

# ✔300
## VERSATILITY DEFINED RESIN

**VERSATILITY SERIES**
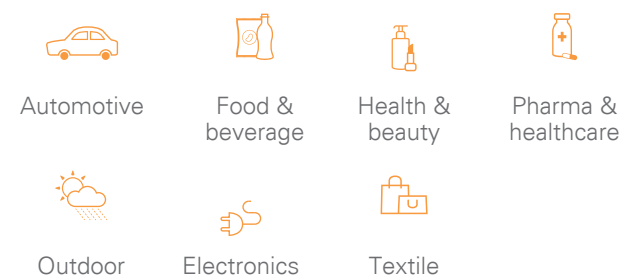
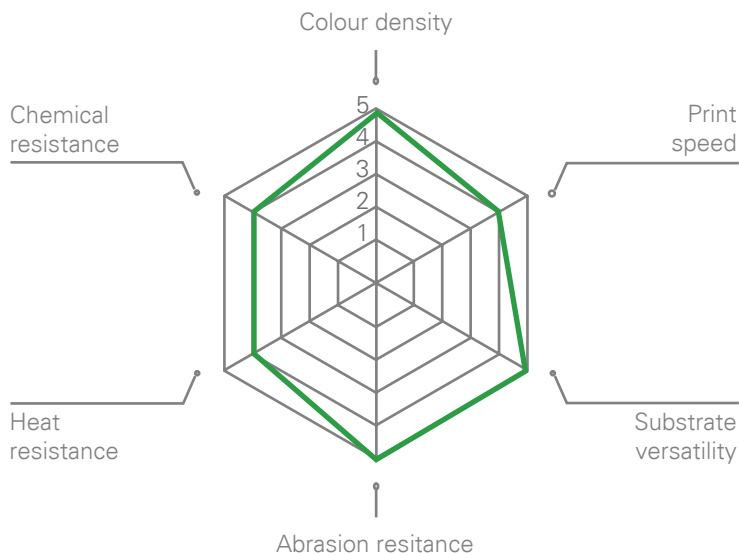### VERSATILE RESIN PRINTING ON A WIDE VARIETY OF SUBSTRATES WHILE MAINTAINING HIGH DURABILITY

**Performance characteristics**

- High substrate versatility
- High print sensitivity
- Wide print range
- Outstanding chemical durability such as IPA, ethanol, oil
- Excellent blocking resistance allowing for no issues with ink transferring to the back coating
- High abrasion resistance
- Anti-static back coating for easy handling and extended printhead life

**Technical Product Information**

| Ink | Resin |
|---|---|
| Colour | Black |
| Total thickness | 5.8 ± 0.8 µm |
| Base film thickness | 4.5 ± 0.4 µm |
| Ink thickness | 1.3 ± 0.4 µm |

**Spider diagram features of V300**

Colour density, Print speed, Substrate versatility, Abrasion resitance, Heat resistance, Chemical resistance

**Recommended industries**

Automotive | Food & beverage | Health & beauty | Pharma & healthcare | Outdoor | Chemicals | Electronics | Inventory & logistics

**Recommended substrates**

| Paper | | | | | | |
|---|---|---|---|---|---|---|
| Vellum | ● | ● | ● | ○ | ○ | |
| Uncoated paper | ● | ● | ● | ○ | ○ | |
| Coated paper | ● | ● | ● | ● | ○ | |

| Economic synthetics | | | | | |
|---|---|---|---|---|---|
| Polypropylene | ● | ● | ● | ● | ● |
| Polyethylene | ● | ● | ● | ● | ● |
| Polyester | ● | ● | ● | ● | ● |

# R300

## GENERAL PURPOSE RESIN

### ALL-ROUND RESIN FOR LASTING AND RESISTANT PRINT IN DEMANDING APPLICATIONS

**Performance characteristics**

- Heat resistance up to 199°C
- Excellent print quality at high printing speeds using less print energy
- Excellent durability and chemical resistance
- Very economical resin with DNP's unmatched abrasion resistance
- Anti-static back coating for easy handling and extended printhead life

**Technical Product Information**

| Ink | Resin |
| --- | --- |
| Colour | Black |
| Total thickness | 6.0 ± 0.5µm |
| Base film thickness | 4.8 ± 0.3µm |
| Ink thickness | 1.2 ± 0.2µm |

**Recommended industries**

Automotive    Food & beverage    Health & beauty    Inventory & logistics

Pharma & healthcare    Outdoor    Chemicals    Electronics

# R316

## HEAT RESISTANT RESIN

### EXTREMELY HEAT RESISTANT RESIN PARTICULARLY IDEAL FOR AUTOCLAVE APPLICATIONS

**Performance characteristics**

- Heat resistance up to 220°C
- Industry leading in edge definition for clean, optical density (Macbeth)
- Anti-static back coating for easy handling and extended printhead life

**Technical Product Information**

| Ink | Resin |
| --- | --- |
| Colour | Black |
| Total thickness | 7.8 ± 0.5µm |
| Base film thickness | 4.8 ± 0.3µm |
| Ink thickness | 3.0 ± 0.2µm |

**Recommended industries**

Health & beauty    Inventory & logistics    Pharma & healthcare    Outdoor

Electronics

**Recommended substrates**

Find out the recommended substrates for each ribbon on pages 05-06

DNP

# R510 (HF)

## ULTRA DURABLE RESIN

**HIGH DURABILITY RESIN DESIGNED FOR HARSH ENVIRONMENTS OFFERING HIGH CHEMICAL SOLVENT RESISTANCE**

### Performance characteristics

- Heat resistant up to 250°C
- Unique solvent resistance
- Excellent optical density (Macbeth) ensuring sharp edge definition
- Anti-static back coating for easy handling and extended printhead life
- Halogen-free

### Technical Product Information

| Ink | Resin |
|---|---|
| Colour | Black |
| Total thickness | 7.5 ± 0.5µm |
| Base film thickness | 4.8 ± 0.3µm |
| Ink thickness | 2.7 ± 0.2µm |

### Recommended industries

Automotive    Health & beauty    Inventory & logistics    Pharma & healthcare

Outdoor    Chemicals    Electronics

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# R550

## EXTREMELY DURABLE RESIN

**PREMIUM RESIN FOR HIGH CHEMICAL AND HEAT RESISTANT APPLICATIONS**

### Performance characteristics

- Heat resistance up to a continuous temperature of 350°C
- Unique high abrasion and solvent resistance
- Excellent edge definition for dark, dense images and improved scan rates
- Anti-static back coating for easy handling and extended printhead life
- Halogen-free

### Technical Product Information

| Ink | Resin |
|---|---|
| Colour | Black |
| Total thickness | 6.5 ± 0.8µm |
| Base film thickness | 4.5 ± 0.4µm |
| Ink thickness | 2.0 ± 0.5µm |

### Recommended industries

Automotive    Health & beauty    Inventory & logistics    Pharma & healthcare

Outdoor    Chemicals    Electronics

# TR7541

## BOILING RESISTANT RESIN

### RESIN RIBBON RESISTANT TO BOILING WATER FOR FOOD & BEVERAGE APPLICATIONS

**Performance characteristics**

- Boiling water durability
- Prints on extremely smooth labels below 40 dyne
- Abrasion resistant
- Suitable for flat-head and near-edge printers
- Anti-static back coating for easy handling and extended printhead life
- Halogen-free

**Technical Product Information**

| | |
|---|---|
| Ink | Resin |
| Colour | Black |
| Total thickness | 6.6 ± 0.8μm |
| Base film thickness | 4.8 ± 0.3μm |
| Ink thickness | 1.8 ± 0.5μm |

**Recommended industries**

Food & beverage

Health & beauty

Pharma & healthcare

Retail

**Recommended substrates**

Find out the recommended

substrates for each ribbon

on pages 05-06

**DNP**

# NEAR-EDGE
# WAX/RESIN

DNP

# ✔ M295HD 4.0
## X-TRA LONG HIGH DENSITY PRINT-ON-PACK-AGING WAX/RESIN

**VERSATILITY** SERIES

### DROP-IN COMPATIBLE, HIGH-SPEED PRINTING VERSATILE WAX/RESIN FOR FLEXIBLE PACKAGING APPLICATIONS

## Performance characteristics

- Long-length ribbon possibility due to thinner total ribbon thickness
- Higher-speed printability (up to 36 IPS)
- Easier printability due to broader print window and improved ink release
- Less plastic waste due to thinner base-film
- Superb colour denisty and small font printability
- Higher print sensitivity saving energy and allowing for a longer print head lifecycle
- Anti-static back coating: easy handling, clean prints and extended printhead life
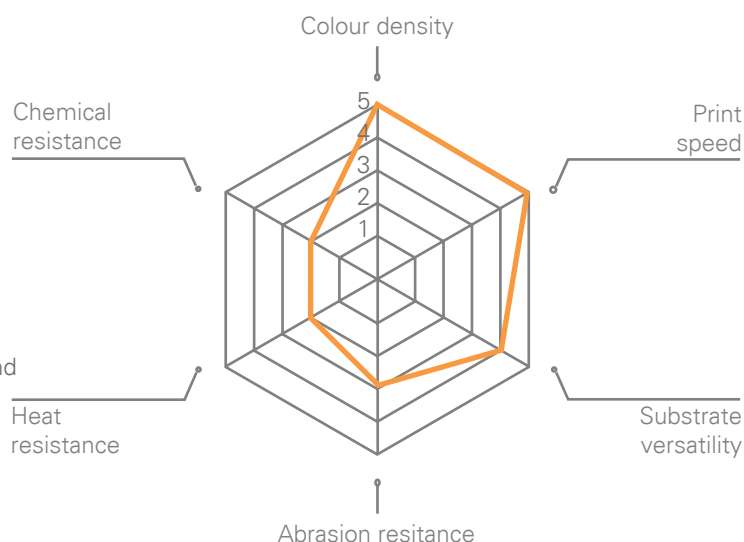
## Technical Product Information

| | |
|---|---|
| Ink | Wax/Resin |
| Colour | Black |
| Total thickness | 5.6 ± 0.8μm |
| Base film thickness | 4.0 ± 0.4μm |
| Ink thickness | 1.6 ± 0.4μm |

## Spider diagram features of M295HD 4.0



Colour density
Print speed
Substrate versatility
Abrasion resitance
Heat resistance
Chemical resistance

## Recommended industries

Food & beverage

Health & beauty

Pharma & healthcare

## Recommended substrates

| Paper | | | | | |
|---|---|---|---|---|---|
| Vellum | ● | ● | ○ | ○ | ○ |
| Uncoated paper | ● | ○ | ○ | ○ | ○ |
| Coated paper | ● | ● | ● | ● | ○ |

| Economic synthetics | | | | | |
|---|---|---|---|---|---|
| Polypropylene | ● | ● | ● | ● | ● |
| Polyethylene | ● | ● | ● | ● | ○ |
| Polyester | ● | ● | ● | ● | ● |

# M295HD

## HIGH DENSITY PRINT-ON-PACKAGING WAX/RESIN

**DROP-IN COMPATIBLE, HIGH-SPEED PRINTING WAX/RESIN FOR FLEXIBLE PACKAGING APPLICATIONS**

### Performance characteristics

- Extremely high print speeds up to 32 IPS (800 mm per second)
- High image density at standard heat settings
- Excellent rub resistance against oil and grease
- Anti-static back coating for easy handling and extended printhead life
- Halogen-free

### Technical Product Information

| Ink | Wax/Resin |
|---|---|
| Colour | Black |
| Total thickness | 6.3 ± 0.5µm |
| Base film thickness | 4.8 ± 0.3µm |
| Ink thickness | 1.5 ± 0.2µm |

### Recommended industries

Food & beverage    Health & beauty    Pharma & healthcare

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# TR4500

## PREMIUM WAX/RESIN

**EASILY PRINTABLE NEAR-EDGE WAX/RESIN RIBBON FOR ROUGH AND SMOOTH MATERIALS**

### Performance characteristics

- Excellent edge definition for dark, dense images and improved scan rates
- Prints excellent images on a wide variety of label and tag stocks
- Anti-static back coating for easy handling and extended printhead life
- Halogen-free

### Technical Product Information

| Ink | Wax/Resin |
|---|---|
| Colour | Black |
| Total thickness | 8.2 ± 0.5µm |
| Base film thickness | 4.8 ± 0.3µm |
| Ink thickness | 3.4 ± 0.2µm |

### Recommended industries

Food & beverage    Health & beauty    Inventory & logistics    Pharma & healthcare    Outdoor    Retail

# NEAR-EDGE RESIN

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**DNP**

# ✔390
## VERSATILITY DEFINED RESIN

**VERSATILITY SERIES**

**VERSATILE WITH INCREASED EFFICIENCY ON A WIDE RANGE OF SUBSTRATES FOR TTO AND NEAR-EDGE**

## Performance characteristics

• Less change-overs: prints at high speeds on many substrates - versatility defined
• Longer run-times and less plastic waste due to longer ribbons: ultra-thin PET film
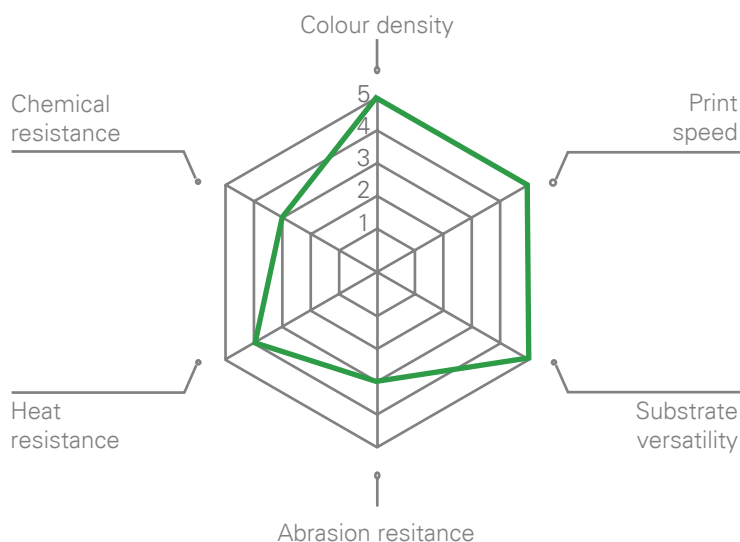• Superb durability against common chemicals and solvents

## Technical Product Information

| Ink | Resin |
|---|---|
| Colour | Black |
| Total thickness | 5.4 ± 0.9 μm |
| Base film thickness | 4 ± 0.4 μm |
| Ink thickness | 1.4 ± 0.5 μm |

## Recommended industries

Food & beverage

Health & beauty

Pharma & healthcare

Automotive

Outdoor

Chemicals

Horticulture

Electronics

Inventory & logistics

**Spider diagram features of V390**

(Spider diagram axes: Colour density, Print speed, Substrate versatility, Abrasion resitance, Heat resistance, Chemical resistance; scale 1–5)

## Recommended substrates

| Paper | | | | | |
|---|---|---|---|---|---|
| Vellum | ● | ● | ● | ○ | ○ |
| Uncoated paper | ● | ○ | ○ | ○ | ○ |
| Coated paper | ● | ● | ● | ○ | ○ |

| Economic synthetics | | | | | |
|---|---|---|---|---|---|
| Polypropylene | ● | ● | ● | ● | ○ |
| Polyethylene | ● | ● | ● | ● | ● |
| Polyester | ● | ● | ● | ● | ● |

# R390

## GENERAL PURPOSE RESIN

### ALL-ROUND NEAR-EDGE RESIN OFFERING HIGH HEAT AND SOLVENT RESISTANCE

**Performance characteristics**

- Excellent print quality at high printing speeds
- Increased durability across a wide range of resin applications
- High substrate versatility
- Excellent edge definition for dark, dense images and improved scan rates
- Anti-static back coating for easy handling and extended printhead life

**Technical Product Information**

| Ink | Resin |
| --- | --- |
| Colour | Black |
| Total thickness | 6.0 ± 0.5μm |
| Base film thickness | 4.8 ± 0.3μm |
| Ink thickness | 1.2 ± 0.2μm |

**Recommended industries**

Automotive    Food & beverage    Health & beauty    Pharma & healthcare

Outdoor    Chemicals    Electronics

# R396

## HIGH SPEED DURABLE RESIN

### EASY-TO-PRINT, HIGH-SPEED COMPATIBLE RESIN FOR DURABLE FLEXIBLE PACKAGING APPLICATIONS

**Performance characteristics**

- Extremely high print speeds up to 32 IPS (660mm per second)
- Excellent edge definition for dark, dense images and improved scan rates
- Abrasion & smudge resistance resistance
- Anti-static back coating for easy handling and extended printhead life
- Halogen-free

**Technical Product Information**

| Ink | Resin |
| --- | --- |
| Colour | Black |
| Total thickness | 5.45 ± 0.9μm |
| Base film thickness | 4.0 ± 0.5μm |
| Ink thickness | 1.45 ± 0.4μm |

**Recommended industries**

Food & beverage    Health & beauty    Pharma & healthcare

DNP

# COLOUR WAX
# WAX/RESIN & RESIN

## DNP

# TR3021, 22, 23
## GENERAL PURPOSE COLOUR WAX

### ALL-ROUND COLOUR WAX SPECIALTY APPLICATIONS

**Performance characteristics**

- Provides excellent print clarity and is highly smudge resistant
- Prints at high printing speeds (12 IPS) delivering crisp, rotated bar codes
- Excellent edge definition for dark, dense images and improved scan rates
- Anti-static back coating for easy handling and extended printhead life
- Halogen-free (TR3022 Blue)

### Technical Product Information

| | |
|---|---|
| Ink | Wax |
| Colour | Red, Blue, Green |
| Total thickness | 8.4 ± 0.5μm |
| Base film thickness | 4.8 ± 0.3μm |
| Ink thickness | 3.6 ± 0.2μm |

### Recommended industries

Inventory & logistics
Outdoor

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# M295C
## PRINT ON PACKAGING COLOUR WAX/RESIN

### SPECIALTY COLOURED NEAR-EDGE WAX/RESIN FOR HIGH-SPEED PRINTABILITY ON FLEXIBLE PACKAGING

**Performance characteristics**

- Extremely high print speeds up to 20 IPS (508mm per second)
- Excellent edge definition for dark, dense images and improved scan rates
- Anti-static back coating for easy handling and extended printhead life
- Halogen-free

### Technical Product Information

| | | |
|---|---|---|
| Ink | Wax/Resin | |
| Colour | Silver, Bright White | |
| Total thickness | Silver | 6.1 ± 1.0μm |
| | Bright White | 7.5 ± 1.3μm |
| Base film thickness | | 4.5 ± 0.5μm |
| Ink thickness | Silver | 1.6 ± 0.5μm |
| | Bright White | 3.0 ± 0.8μm |

### Recommended industries
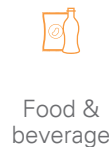
Food & beverage
Health & beauty
Pharma & healthcare

# R300 RED

## GENERAL PURPOSE COLOUR RESIN

**SPECIALTY COLOUR RESIN FOR SYNTHETIC LABEL PRINTING APPLICATIONS REQUIRING DURABILITY**

### Performance characteristics

• Excellent print quality at high speeds using less print energy

• Excellent durability and chemical resistance

• Extensive substrate versatility expanding application options

• Unbeatable edge definition for red, dense images and improved scan rates

• Anti-static back coating for easy handling and extended printhead life

### Technical Product Information

| Ink | Resin |
|-----|-------|
| Colour | Red |
| Total thickness | 6.0 ± 0.5µm |
| Base film thickness | 4.8 ± 0.3µm |
| Ink thickness | 1.2 ± 0.2µm |

### Recommended industries

Automotive  Food & beverage  Health & beauty  Inventory & logistics

Pharma & healthcare  Outdoor  Chemicals  Electronics


# R410D-WHITE

## ULTRA OPAQUE WHITE RESIN

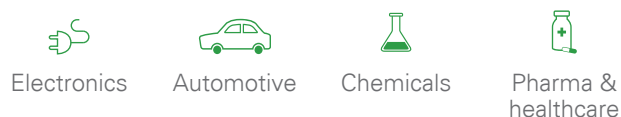**DOUBLE LAYER WHITE RESIN DESIGNED FOR DARK MATERIAL PRINTING FOR DURABLE APPLICATIONS**

### Performance characteristics

• Excellent optical density (Macbeth)

• Excellent opacity

• Excellent scratch resistance

• Good solvent resistance

• Anti-static back coating for easy handling and extended printhead life

### Technical Product Information

| Ink | Resin |
|-----|-------|
| Colour | White |
| Total thickness | 11.2 ± 1.0µm |
| Base film thickness | 4.8 ± 0.3µm |
| Coated layers | 6.4 ± 0.7µm |

### Recommended industries

Electronics  Automotive  Chemicals  Pharma & healthcare

# R510C

## ULTRA DURABLE COLOUR RESIN

### SPECIALTY COLOUR RESIN FOR APPLICATIONS EXPOSED TO DEMANDING ENVIRONMENTS

**Performance characteristics**

- High solvent durability
- Excellent optical density (Macbeth) printing ensuring high edge definition
- Anti-static back coating for easy handling and extended printhead life

**Technical Product Information**

Colour: Red, Blue, Green, Matte Silver,

🔴 🔵 🟢 ⚪

Yellow, Orange, Deep Blue, Deep Green

🟡 🟠 🔵 🟤

**Recommended industries**

Automotive    Inventory & logistics    Chemicals    Electronics

# R510W

## DURABLE WHITE RESIN

### SINGLE LAYER WHITE RESIN DESIGNED FOR DARK MATERIAL PRINTING FOR HIGHLY DURABLE APPLICATIONS

**Performance characteristics**

- Industry leading in edge definition for clean, durable, and dense bar codes
- Resistance to ethanol and isopropanol
- Abrasion and smudge resistance
- Anti-static back coating for easy handling and extended printhead life
- Halogen-free

**Technical Product Information**

| Ink | Resin |
|---|---|
| Colour | White |
| Total thickness | 9.3 ± 0.5µm |
| Base film thickness | 4.8 ± 0.3µm |
| Ink Thickness | 4.5 ± 0.2µm |

**Recommended industries**

Food & beverage    Inventory & logistics    Electronics    Chemicals

**Recommended substrates**

Find out the recommended substrates for each ribbon on pages 05-06

DNP

# TR3370

## HIGH OPACITY WHITE RESIN

**WHITE OPAQUE RESIN DESIGNED FOR DARK MATERIAL PRINTING FOR HIGH DURABILITY APPLICATIONS**

### Performance characteristics

- An opaque ribbon that prints well on black, clear, and silver synthetic substrates
- Specially formulated for shrink tubing applications
- Resistant to ethanol and isopropanol
- Abrasion and smudge resistance
- Anti-static back coating for easy handling and extended printhead life
- Halogen-free

### Technical Product Information

| Ink | Resin |
| --- | --- |
| Colour | White |
| Total thickness | 9.6 ± 0.5µm |
| Base film thickness | 4.8 ± 0.3µm |
| Ink thickness | 4.8 ± 0.2µm |

### Recommended industries

Food & beverage   Inventory & logistics   Electronics   Chemicals

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# VR301

## DURABLE METALLIC COLOUR RESIN

**SPECIALTY METALLIC RESIN FOR SMOOTH SURFACES REQUIRING HEAT AND CHEMICAL SOLVENT RESISTANCE**

### Performance characteristics

- Abrasion and smudge resistance
- Excellent optical density (Macbeth)
- Extreme solvent resistance
- Anti-static back coating for easy handling and extended printhead life

### Technical Product Information

| Ink | Resin |
| --- | --- |
| Colour | Metallic Gold or Silver |
| Total thickness | 7.15 ± 0.7µm |
| Base film thickness | 5.7 ± 0.3µm |
| Ink thickness | 1.45 ± 0.4µm |

### Recommended industries

Automotive   Inventory & logistics   Outdoor   Chemicals

Electronics

# SPECIALTY RESIN

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**DNP**

# R395

## TEXTILE RESIN

**ESPECIALLY DESIGNED FOR CARE FABRIC APPLICATIONS REQUIRING HEAT, WATER AND STEAM RESISTANCE**

**Performance characteristics**

- Dry clean and laundry safe
- Heat and steam resistance
- Water resistance
- Abrasion and smudge resistance
- Printable on both flat-head and near-edge printers
- Halogen-free

**Technical Product Information**

| | |
|---|---|
| Ink | Resin |
| Colour | Black |
| Total thickness | 6.3 ± 0.5μm |
| Base film thickness | 4.5 ± 0.5μm |
| Ink thickness | 1.8 ± 0.5μm |

**Recommended industries**

Textile

# UV TRANSPARENT RESIN

**UNIQUE R300 FORMULATION-BASED HIGHLY DURABLE CLEAR RESIN FOR ANTI-COUNTERFEIT APPLICATIONS**

**Performance characteristics**

- Print glows under UV-blacklight
- Good compatibility with filmic labels or cards
- Printable on glossy paper
- Printable on flat-head and near-edge printers

**Special storage conditions**

Avoid any light (both sunlight and electric light) as much as possible

**Technical Product Information**

| | |
|---|---|
| Ink | Resin |
| Colour | Transparent |
| Total thickness | 6.2 ± 0.8μm |
| Base film thickness | 4.8 ± 0.3μm |
| Ink thickness | 1.4 ± 0.5μm |
| Light wave length | 365 nm |

**Recommended industries**

Automotive    Electronics

# SCRATCH-OFF RESIN

**EASY TO SCRATCH OFF RESIN RIBBON FOR SPECIALTY APPLICATIONS LIKE LOTTERY TICKETS AND GIFT CARDS**

### Technical Product Information

| | |
|---|---|
| Ink | Special |
| Colour | Black on silver |

●

| | | |
|---|---|---|
| Total thickness | 10.1 | ± 1.6µm |
| Base film thickness | 6.0 | ± 0.5µm |
| Ink thickness | 4.45 | ± 1.0µm |

DNP

# COMPLIANCE OVERVIEW

| Ribbon | REACH | RoHS | ISEGA | Halogen-free | GHS / BS5609 | BPA-free | Conflict - mineral free | Latex-free | UL |
|---|---|---|---|---|---|---|---|---|---|
| **Flat-head wax** | | | | | | | | | |
| ✔ **TR4085plus®** \| Resin enhanced wax | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ |
| **HL Wax** \| Standard wax | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ |
| **TR3021, TR3022, TR3023** \| General purpose colour wax | ✔ | ✔ | | ✔ (Blue) | ✔ (Red) | ✔ | ✔ | ✔ | |
| **Flat-head wax resin** | | | | | | | | | |
| ✔ **M255** \| Premium wax resin | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | |
| **M265** \| Ultra durable wax resin | ✔ | ✔ | ✔ | | | ✔ | ✔ | ✔ | |
| **TR5080** \| Specialty wax resin | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ |
| **Near-edge wax resin** | | | | | | | | | |
| **M295HD** \| High density print-on-packaging wax resin | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | |
| ✔ **M295HD 4.0** \| X-tra Long high density print-on-packaging wax resin for extra length | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | |
| **TR4500** \| Premium wax resin | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ |
| **M295C** \| Print-on-packaging colour wax resin | ✔ | ✔ | ✔ (White) | ✔ (White) | | ✔ | ✔ | ✔ | |
| **Flat-head resin** | | | | | | | | | |
| ✔ **300** \| Versatility Defined resin | ✔ | ✔ | ✔ | | | ✔ | ✔ | ✔ | |
| **R300** \| General purpose resin | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ | ✔ |
| **R510 (HF)** \| Ultra durable resin | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ |
| **R316** \| Heat resistant resin | ✔ | ✔ | | | | ✔ | ✔ | ✔ | ✔ |
| **R550** \| Extremely durable resin | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ |
| **TR7541** \| Boiling resistant resin (also NE) | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | |
| **R300 Red** \| General purpose colour resin | ✔ | ✔ | ✔ | | | ✔ | ✔ | ✔ | |
| **R410D-White** \| Ultra opaque white resin | ✔ | ✔ | | | | ✔ | ✔ | ✔ | ✔ |
| **R510C** \| Ultra durable colour resin | ✔ | ✔ | | | ✔ (Red) | ✔ | ✔ | ✔ | ✔ * |
| **R510W** \| Durable white resin | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ |
| **TR3370** \| High opacity white resin | ✔ | ✔ | | ✔ | | ✔ | ✔ | ✔ | ✔ |
| **VR301** \| Durable metallic colour resin | ✔ | ✔ | | | | ✔ | ✔ | ✔ | |
| **R395** \| Textile resin | ✔ | ✔ | | ✔ | | ✔ | ✔ | ✔ | |
| **UV transparent resin** | ✔ | ✔ | | | | ✔ | ✔ | ✔ | |
| **Scratch-off resin** | ✔ | ✔ | | | | ✔ | ✔ | | |
| **Near-edge resin** | | | | | | | | | |
| ✔ **390** \| Versatility Defined TTO/Near-edge resin | ✔ | ✔ | ✔ | | | ✔ | ✔ | ✔ | |
| **R390** \| General purpose resin | ✔ | ✔ | ✔ | | | ✔ | ✔ | ✔ | |
| **R396** \| High speed durable resin | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | |

*Blue, Green, Red

# NOTES

# PURCHASING GUIDE

## Request a free sample

Are you interested in trying out one of our Thermal Transfer Ribbons? You can request a free sample via email or the following QR code below.

## Order DNP Thermal Transfer Ribbons

Are you a first-time customer and you wish to send in an order to us? You can send your request to sales@dnp.imgcomm.eu and one of our sales representatives will get in touch with you regarding your order.

## Buy stock items via the Blue Book Programme

Is lead time a key factor for you? With our Blue Book Programme orders received before 12 o'clock (CET/CEST) are shipped out the same day! The Blue Book Programme contains standard qualities and size specifications. You can find a list of our Blue Book items on our website here:
eu.dnpribbons.com/products/blue-book
or by following the QR code below.

## How to order from Blue Book?

1 Place an order before 12 o'clock (CET/CEST) for same day shipment.
2 Send your Blue Book order in a separate e-mail from your made-to-order request.
3 Your products will be prepared and shipped out that day.

Please note that delivery costs may vary per country. In case you would like your order to be sent by drop shipment an additional cost of €20 per delivery applies.

## Consult with our industry experts

Do you still have unanswered questions? Get in touch with your designated Area Sales Manager, call our general sales line (+31 23 553 3060) to talk to one of our knowledgeable specialists or send us an email to sales@dnp.imgcomm.eu.

## Supplied via resellers, DNP partner distributors and OEM's

DNP Thermal Transfer Ribbons are available for purchase via a network of partner distributors, OEM's and resellers. Should you be interested in becoming one of the aforementioned partners, please do not hesitate to contact us.

Are you a ribbon user yourself and would like to try out or purchase one of our DNP Thermal Transfer Ribbons? Our team is ready to answer your questions and needs, to discuss your projects and, if required, point you to the most suitable DNP reseller.

To enhance knowledge and culture through letterpress printing, Dai Nippon Printing Co., Ltd.'s predecessor, Shueisha was founded in the Ginza district of Tokyo in 1876. Since then, Dai Nippon Printing (DNP) has become one of the world's largest diversified printing/coating technology companies.

Today, Dai Nippon Printing employs over 38.600 people at its plants and sales offices in Asia, Europe, North America and Oceania. DNP's operations include commercial printing, packaging, decorative materials, electronics, business forms and information media supplies.

In the early 1980s, Dai Nippon Printing was one of the pioneers in Thermal Transfer Ribbon (TTR) technology. Nearly 30 years later, in 2008, Sony Chemical's TTR division was transferred to Dai Nippon Printing. With the merge of Sony Chemical's TTR division, DNP's Imagingcomm division was established. Thereby, also founding DNP Imagingcomm Europe B.V. DNP's Imagingcomm division has ever since grown to be one of the world's largest manufacturers of Thermal Transfer Ribbons for barcode and dye-sublimation printers. Our European division provides solutions to the barcode, label, photo, ID- and credit card industries in the European, Middle Eastern, African and Russian markets.

大日本印刷（DNP）の前身、秀英舎は、明治維新後まもない1876年（明治9年）、東京・銀座の地に誕生しました。「活版印刷を通じて人々の知識や文化の向上に貢献したい」。創業の原動力になったのは、発起人たちのそんな熱い思いでした。現在では、DNPは世界最大規模の総合印刷会社になっています。
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