

DNP

The Dai Nippon Printing Group

RIBBON RELEASE KIT



W160

Ultra Durable Wax
Thermal Transfer Ribbon

Table of Contents

EXECUTIVE SUMMARY	1
TEST RESULTS	1
TESTING METHODS	4
W160 STOCK ITEM LIST	5
COMPANY OVERVIEW	6
PRODUCT COMPARISON CHART	7
FAST FACT SHEET	8

VISIT OUR NEW WEBSITE

WWW.DNPRIBBONS.COM

TO LEARN MORE ABOUT DNP AND OUR PRODUCTS!

NORTH & LATIN AMERICA
Dai Nippon IMS (America) Corp.
4524 Enterprise Dr.
Concord, NC 28027 United States
TEL 1.800.814.4672
FAX 1.704.784.7196
www.dnpribbons.com

EUROPE
Dai Nippon Printing (Europa) GmbH
Berliner Allee 26, 40212
Duesseldorf, Germany
TEL +49.211.8620.180
FAX +49.211.8620.1895

ASIA
Dai Nippon Printing Co., Ltd.
2F, Ichigaya Sankyo Bldg.
14-1 Haraikatacho
Shinjuku-ku, Tokyo 162-0841 Japan
TEL +81.3.3266.4210
FAX +81.3.3266.4224
www.dnp.co.jp

W160 ULTRA DURABLE WAX

EXECUTIVE SUMMARY

ABOUT W160

DNP set out many months ago to develop a "revolutionary" wax product that had the performance characteristics of a wax/resin ribbon with a value usually found only in wax products. Through extensive internal and external testing we feel that the new W160 Ultra Durable Wax is a dramatic change to the landscape of ribbons currently being sold today.

DNP tasked the same team that developed our world renowned resins (R300 General Purpose Resin, R316 Specialty Resin and R510 Ultra Durable Resin) to create a new wax product that was unlike any other wax product available. We are thrilled with the results of W160 Ultra Durable Wax-- and, judging by customer demand, hundreds of Resellers are finding value with this "revolutionary" new wax ribbon.

Simply stated, W160 Ultra Durable Wax is the leading wax ribbon for abrasion resistance-- a key characteristic for any wax. W160 Ultra Durable Wax also has the added benefit of exhibiting market leading solvent resistance, giving it an extended outlet for some low-end wax/resin applications. Adding to the products success is its overall label adaptability expanding the applications W160 Ultra Durable Wax achieves top performance.

Visit www.dnpribbons.com to learn more about this "revolutionary" new wax product.

TEST RESULTS

GOAL

Our goal is to provide our valued partners with a more competitive advantage in their wax and wax/resin applications.

DURABILITY

Abrasion Resistance

W160 outperformed all 14 ribbons tested with 3 of the top 5 ribbons manufactured by DNP. Both NCR's UltraV and Sony's TR5050 placed in the top 5 for abrasion resistance. The difference between W160 and all competing ribbons is overwhelming-- clearly proving that W160 is by far a superior wax product for durability in abrasion resistance. IIMAK's Versa Mark, Value Wax and High Mark placed relatively equally at the bottom half of ribbons tested for abrasion resistance.

Solvent Resistance

Once again, W160 out-performed all 14 ribbons tested for solvent resistance against IPA, Gasoline, Kerosene and Brake Fluid. It, along with W137, were the only two ribbons to receive an Excellent rating for solvent resistance.

LABEL ADAPTABILITY

Our engineers picked a representative sample of the industry's most popular label substrates used for wax applications. This representative sample accounts for approximately 60% of the entire US market share for wax label substrates. W160 repeatedly outperformed the competition on label adaptability for coated papers, polypropylene and polyolefins.

PRINT SENSITIVITY

W160 performs consistently on print sensitivity for both the Zebra 140xill and the Datamax I-4212 printers. For the Zebra printer, W160 requires approximately 30% less print energy than IIMAK's Versa Mark or NCR's UltraV. It also requires approximately 7 -10% less print energy than both of Sony's TR-5050 and Signature ribbons. On the Datamax printer, again, W160 requires less print energy than Sony's Signature ribbon, IIMAK's Versa Mark and NCR's UltraV.

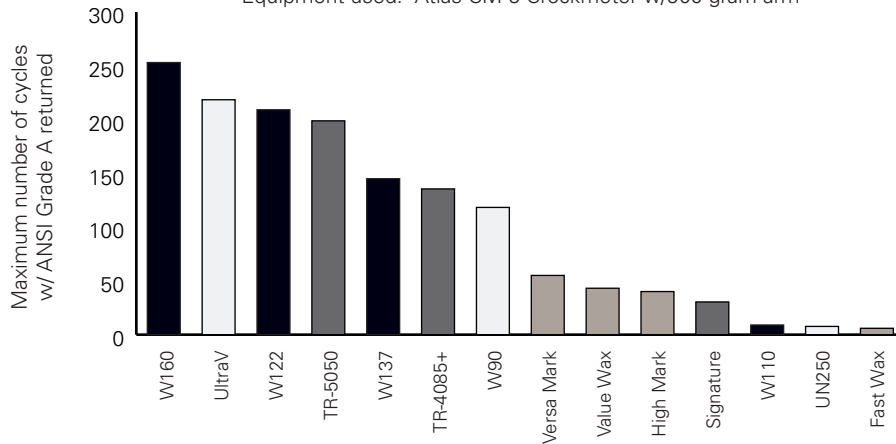
Contact DNP
1.800.814.4672
www.dnpribbons.com

W160 ULTRA DURABLE WAX

TEST RESULTS

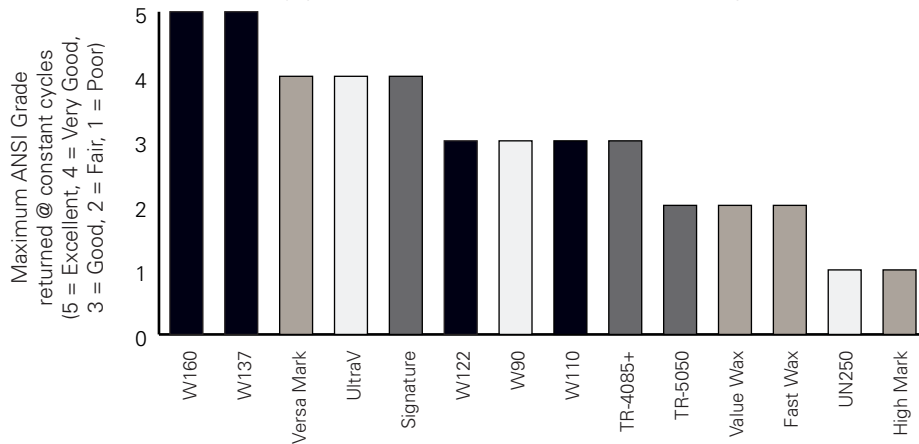
ABRASION RESISTANCE

Zebra 140xill Printer @ 2IPS on 4 substrates (n=20)
Equipment used: Atlas CM-5 Crockmeter w/900 gram arm



SOLVENT RESISTANCE

Zebra 140xill Printer @ 2IPS on 4 substrates (n=48)
Equipment used: Atlas CM-5 Crockmeter w/900 gram arm



REFERENCE: For a complete version of all our test results, log onto www.dnpribbons.com to download the entire document. Our test results include overall performance, print sensitivity, and label adaptability on both the Zebra 140xill and Datamax I-4212.

Contact DNP
1.800.814.4672
www.dnpribbons.com

W160 ULTRA DURABLE WAX

Test Methods

TESTING MATERIALS & STANDARDS

Our engineers tested 14 wax and wax/resin ribbons for print sensitivity, label adaptability and overall durability (abrasion & solvent resistance) on 4 different label substrates.

Substrate Name	Material
Fasson 1C (12906)	Coated Paper
Fasson 2C (16070)	Coated Paper
Kimdura	Polyolefin
FLEXcon 31500	Polypropylene MT/C-352

PRINT QUALITY

Labels were printed at burn temperatures of +1, +2, +3, +4, +5, +6, +7, +8, +9, +10, +11, +12, +13, +14 and +15 for the Zebra 140xill and the Datamax I-4212 printers. The picket barcode and the rotated barcode were then scanned three times at each temperature. Using the ANSI grading scale system, each ribbon was assigned a rating according to the criteria below:

ANSI Grade Rating	Conditions
Excellent	2 'A' grade rotated barcodes
Good	1 'A' grade rotated barcode or 2 'B' grade rotated barcodes
Fair	1 'B' grade rotated barcode or 2 'C' grade rotated barcodes
Poor	1 'A' grade picket barcode
Fail	No 'A' grade picket bar codes

POWER USAGE

The level at which the rotated barcode receives, on scanning, the highest ANSI letter grade, is the optimum power usage. If two or more rotated barcodes receive the same high ANSI letter grade, the energy level of the barcode with the highest decodability is designated the optimum energy.

ABRASION RESISTANCE

Load Atlas Crockmeter bar to 900g and cover with fabric. Rub bar back and forth over barcode. Scan barcode with PSC Quick-Check 850 scanner. Note highest number of cycles at which an ANSI grade of A is still returned.

Grade	Condition
Excellent	More than 1000 cycles
Good	More than 100 cycles
Fair	More than 30 cycles
Poor	More than 10 cycles
Fail	Less than 10 cycles

SOLVENT RESISTANCE

Soak a fabric in chemical (IPA, Gasoline, Brake Fluid, Kerosene). Load Atlas Crockmeter bar to 248g and cover with saturated fabric. Rub bar back and forth over barcode, and then scan barcode with PSC Quick-Check 850 scanner. Note highest number of cycles at which an ANSI grade of A is still returned.

Grade	Condition
Excellent	More than 1000 cycles
Good	More than 100 cycles
Fair	More than 30 cycles
Poor	More than 10 cycles
Fail	Less than 10 cycles

For a complete technical version of our W160 Product Release Kit, simply log onto www.dnpribbons.com to download the entire document.

Contact DNP
1.800.814.4672
www.dnpribbons.com

W160 ULTRA DURABLE WAX

STOCK ITEM LIST

PART NUMBER	WIDTH (mm)	LENGTH (m)	WIDTH (in)	LENGTH (ft)	ROLLS PER CARTION
Datamax					
DWFA050360	1.97	1181	50	360	36
DWFA076360	2.99	1181	76	360	36
DWFA090360	3.54	1181	90	360	24
DWFA102360	4.02	1181	102	360	24
DWFA108360	4.25	1181	108	360	24
DWFA114360	4.49	1181	114	360	24
Eltron					
DWLA11091	4.33	299	110	91	96
Intermec					
DWIA104153	4.09	502	104	153	24
Sato					
DWSA102210	4.02	689	102	210	24
DWSA102410	4.02	1345	102	410	24
DWSA110410	4.33	1345	110	410	24
Zebra					
DWZA080300	3.15	984	80	300	36
DWZA110300	4.33	984	110	300	36
DWZA060450	2.36	1476	60	450	36
DWZA083450	3.27	1476	83	450	36
DWZA090450	3.54	1476	90	450	24
DWZA102450	4.02	1476	102	450	24
DWZA110450	4.33	1476	110	450	24
DWZA130450	5.12	1476	130	450	24
DWZA165450	6.50	1476	165	450	12

Contact DNP
1.800.814.4672
www.dnpribbons.com

W160 ULTRA DURABLE WAX

COMPANY OVERVIEW

DAI NIPPON IMS (AMERICA) CORP.

We are Dai Nippon IMS (America) Corp.– a 100% US subsidiary of Dai Nippon Printing Co., Ltd. (DNP). As part of DNP's Information Media Supply Division (IMS), Dai Nippon IMS (America) Corp. manufactures and sells thermal transfer ribbons (TTR) for barcode and facsimile equipment in North and Latin America. Our Concord, NC facility was established in 1995 as DNP's first full scale TTR manufacturing plant in the United States.

Here at DNP, we measure success by our ability to meet one objective: customer satisfaction. Our foundation is built in printing/coating technologies and for the past 125 years, we have maintained a close and respectful relationship with each of our valued customers. We are the world's largest manufacturer of thermal transfer ribbons, and the world's largest printing/coating technologies company. We are in the business to grow your business. Our total corporate success by fulfilling our Five Pillars to customer satisfaction.

DNP'S FIVE PILLARS

Quality

DNP's products work the first time– every time. Our quality systems in Concord, NC are dually ISO 9002 certified, by both NSF and JIA; and our two manufacturing facilities in Japan are ISO 9001 certified. This ensures reliable services and products are produced consistently worldwide.

Reliability

Over twenty years ago DNP was one of the first companies to pioneer TTR technology– and the oldest company to start business development in TTR technology. DNP has since grown to be the world's largest TTR manufacturer. We offer over 40 different ribbon formulations and are constantly researching new applications to continue offering the best in TTR technology available on the market.

Service

Our commitment to provide the most professional technical service and responsive sales/customer support sets us apart from our competitors. We understand that quality products alone cannot ensure complete satisfaction– customers depend significantly on a reliable support network. To meet this need we've recruited the world's finest engineers to provide technical support, and highly trained sales representatives for customer support. We also understand time is money– that is why we offer the industry's best lead times for non-stock items.

Innovation

We take great measures to ensure our products and services are top notch. We have one of the most comprehensive research and development laboratory networks in the world. Our R&D teams don't just build new products– they develop innovative strategies for supporting and implementing them. DNP currently invests in 9 independent laboratories– including one laboratory devoted solely to researching and developing TTR technology. These laboratories work closely with our New Business Development Institute and our Manufacturing Integration Laboratory to create a solid network of research and development that has propelled DNP into the 21st century as the world's largest printing/coating technologies corporation.

This approach to research and development enables DNP to operate at maximum efficiency– a savings we can continually pass on to our customers. It also ensures that our products and processes consistently set the industry standard for quality and reliability.

Price

We understand the dynamic nature of the AIDC marketplace and we are prepared to help our valued customers grow in this volatile and cost sensitive marketplace through competitive pricing.

Contact DNP
1.800.814.4672
www.dnpribbons.com

W160 ULTRA DURABLE WAX

PRODUCT COMPARISON CHART

WAX	INK THICKNESS	BASE FILM THICKNESS	RIBBON THICKNESS	INK MELTING POINT	PRINT DENSITY
W110 General Purpose Wax	3.60 ± 0.30	4.50 ± 0.50	8.21 ± 0.84	68 -70°C (154.4 -158°F)	>1.8
W137 Premium Plus Wax	3.55 ± 0.25	4.50 ± 0.50	8.16 ± 0.79	68 -70°C (154.4 -158°F)	>1.7
W160 Ultra Durable Wax	2.95 ± 0.25	4.50 ± 0.50	7.56 ± 0.79	79 -85°C (174.2 -185°F)	>1.5
WAX/RESIN					
M250 Premium Plus Wax/Resin	3.35 ± 0.30	4.50 ± 0.50	7.96 ± 0.84	79 -85°C (174.2 -185°F)	>1.5
RESIN					
R300 General Purpose Resin	1.15 ± 0.25	4.50 ± 0.50	5.80 ± 0.80	125°C (257°F)	>1.6
R316 Specialty Resin	2.00 ± 0.30	4.50 ± 0.50	6.90 ± 0.90	82 -84°C (179.6 -183.2°F)	>1.8
R340 Permanent Care Resin	1.20 ± 0.20	4.50 ± 0.50	5.85 ± 0.75	118 -120°C (224.4 -248°F)	>1.5
R510 Ultra Durable Resin	1.95 ± 0.25	4.50 ± 0.50	6.85 ± 0.85	166 -168°C (330.8 -334.4°F)	>1.9
NEAR EDGE					
W190 Near Edge Wax	2.70 ± 0.27	4.50 ± 0.50	7.31 ± 0.81	87 -92°C (188.6 -197.6°F)	>1.4
M290 Near Edge Wax/Resin	1.90 ± 0.20	4.00 ± 0.50	5.96 ± 0.73	87 -92°C (188.6 -197.6°F)	>1.8
M299 High Speed NE Wax/Resin	1.65 ± 0.36	4.00 ± 0.50	5.71 ± 0.89	170 -190°C (338 -374°F)	>1.8
R390 Near Edge Resin	1.15 ± 0.25	4.50 ± 0.50	5.80 ± 0.80	125°C (257°F)	>1.8
COLORS & METALLICS					
W120C General Color Wax	3.50 ± 0.20	6.00 ± 0.50	9.65 ± 0.75	68 -70°C (154.4 -158°F)	>1.8
R316C Specialty Color Resin	2.00 ± 0.30	4.50 ± 0.50	6.90 ± 0.90	82 -84°C (179.6 -183.2°F)	>1.8
R510C Durable Color Resin					

INFORMATION VARIES

WAX	ABRASION RESISTANCE	WATER	SOLVENT RESISTANCE			GASOLINE	HEAT RESISTANCE	PRINT SPEED RANGE
			IPA	BRAKE	KEROSENE			
W110 General Purpose Wax	10 cycles	1000	1000	N/A	N/A	N/A	<70°C (<158°F)	2 -12 IPS
W137 Premium Plus Wax	45 cycles	1000	1000	1000	N/A	N/A	<70°C (<158°F)	2 -12 IPS
W160 Ultra Durable Wax	220 cycles	1000	1000	1000	70	5	<70°C (<158°F)	2 -12 IPS
WAX/RESIN								
M250 Premium Plus Wax/Resin	300 cycles	1000	1000	1000	100	10	<70°C (<158°F)	2 -12 IPS
RESIN								
R300 General Purpose Resin	250 cycles	1000	1000	1000	300	90	<170°C (<338°F)	2 -12 IPS
R316 Specialty Resin	220 cycles	1000	1000	1000	200	20	<220°C (<428°F)	2 -6 IPS
R340 Permanent Care Resin	170 cycles	1000	1000	1000	N/A	N/A	<150°C (<302°F)	2 -12 IPS
R510 Ultra Durable Resin	400 cycles	1000	1000	1000	400	100	<180°C (<356°F)	2 -10 IPS
NEAR EDGE								
W190 Near Edge Wax	50 cycles	1000	1000	1000	5	5	<70°C (<158°F)	2 -12 IPS
M290 Near Edge Wax/Resin	150 cycles	1000	1000	1000	5	5	<80°C (<176°F)	2 -20 IPS
M299 High Speed NE Wax/Resin	300 cycles	1000	1000	1000	5	5	<180°C (<356°F)	2 -24 IPS
R390 Near Edge Resin	350 cycles	1000	1000	1000	200	25	<170°C (<338°F)	2 -12 IPS
COLORS & METALLICS								
W120C General Color Wax	35 cycles	1000	1000	1000	N/A	N/A	<70°C (<158°F)	2 -12 IPS
R316C Specialty Color Resin	180 cycles	1000	1000	1000	180	15	<220°C (<428°F)	2 -6 IPS
R510C Durable Color Resin	350 cycles	1000	1000	1000	340	70	<180°C (<356°F)	2 -10 IPS

Contact DNP
1.800.814.4672
www.dnpribbons.com

W160 ULTRA DURABLE WAX

FAST FACT SHEET

DESCRIPTION

W160 changes everything! Now you can offer your customers a wax ribbon that stands alone as the industry's best overall wax for durability, solvent resistance and price. W160 consistently ranked number one for abrasion and solvent resistance when printed on the industry's most common label substrates using multiple OEM thermal transfer printers.

LABEL COMPATIBILITY

Using a representation of 4 different label substrates accounting for 60% of all wax label applications in the US market, W160 ranked the highest in abrasion resistance. Not only can you trust W160 to work in most any wax label application, you can trust that W160 will print onto most wax label substrates available in the US and abroad.

RECOMMENDED APPLICATIONS



PERFORMANCE CHARACTERISTICS

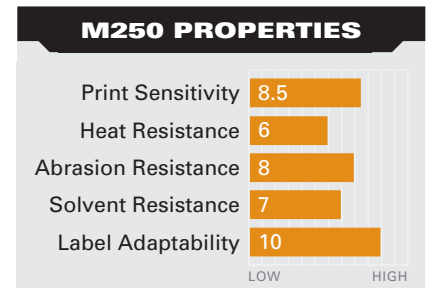
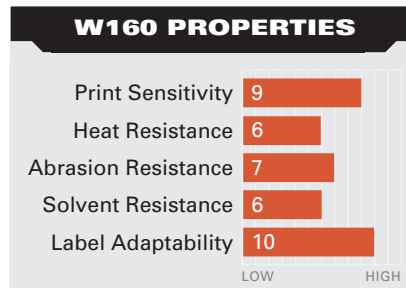
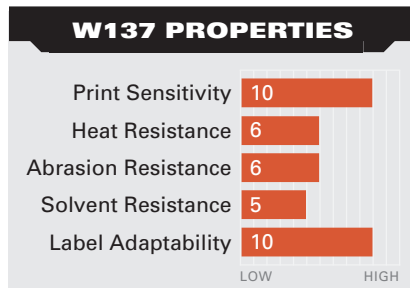
- ▶▶ Extreme durability and solvent resistance across a wide range of wax applications
- ▶▶ Low print energy settings for increased printhead protection
- ▶▶ Excellent print quality at high-speeds
- ▶▶ Anti-static for easy handling and printhead protection
- ▶▶ Industry leading in Edge Definition for clean, durable, dense bar codes
- ▶▶ DNP's specialty formulated backcoating for printhead protection

COMPETITIVE PRODUCT COMPARISON

W160 has overall superior performance against the following products: Versa Mark, Ultra V, W-90, TR-4085+, TR-5050, UN250

DNP PRODUCT COMPARISON

Recommend W160 for those demanding wax applications that require the durability and label adaptability of a midrange ribbon, but just don't justify the higher cost. W160 is a low cost alternative to high quality, ultra durable wax label applications. We recommend using W160 for applications that are too demanding for our popular W137 Premium Plus Wax, but don't quite justify the solvent resistance requirements of our M250 Premium Plus Wax/Resin.



For the complete technical version of our W160 Product Release Kit, simply log onto www.dnpribbons.com to download the entire document.

Contact DNP
1.800.814.4672
www.dnpribbons.com

W160 ULTRA DURABLE WAX

FAST FACT SHEET

DNP PRODUCT REFERENCE GUIDE

WAX

W110 General Purpose Wax

Economical wax for general label printing

W137 Premium Plus Wax

High-speed premium wax for increased durability

W160 Ultra Durable Wax

High performance wax, resin-enhanced, with excellent durability

WAX/RESIN

M250 Premium Plus Wax/Resin

Excellent durability, label adaptability, and print sensitivity

M260 Ultra Durable Wax/Resin

High performance wax/resin with increased label adaptability and print sensitivity

RESIN

R300 General Purpose Resin

High-speed economical resin for general label printing

R316 Specialty Resin

Excellent heat resistance, prints on paper/synthetic paper substrates

R340 Permanent Care Resin

Withstand repeated washing, prints well on nylon tags for apparel applications

R350 Specialty Care Tag Resin

High heat and high steam resistant resin, perfect for dry cleaning applications

R510 Ultra Durable Resin

Unmatched abrasion and solvent resistance, extreme durability

R511 Ultra Premium Resin

High performance resin with increased print sensitivity

NEAR EDGE

W190 Near Edge Wax

High speed economical wax for near edge printing

M290 Near Edge Wax/Resin

High-speed durable wax/resin for near edge printing

M299 High Speed Near Edge Wax/Resin

Excellent heat/steam resistance with increased print speeds for near edge printing

R390 Near Edge Resin

Durable resin with high speeds and excellent label adaptability for near edge printing

COLORS AND METALLICS

W120C General Color Wax

High-speed durable wax ribbon in 3 standard colors and 10 specialty colors

R316C Specialty Color Resin

Same great performance as R316 Specialty Resin comes in 4 standard colors, 7 specialty colors and Metallic Gold and Silver

R510C Durable Color Resin

Same great performance as R510 Ultra Durable Resin comes in 7 standard colors and Metallic Gold and Silver

SPECIALTY PRODUCTS

W122 Specialty Wax

Excellent durability with a unique matte finish print quality

M230 Specialty Wax/Resin

Economical wax/resin with unmatched solvent resistance

R710 Specialty Resin

Perfect for card applications

R6601 Specialty Resin

Excellent print sensitivity, perfect for printing on paper tags

For a complete technical version of our W160 Product Release Kit, simply log on to www.dnpribbons.com to download the entire document.

Contact DNP
1.800.814.4672
www.dnpribbons.com