Product Data Sheet

XAR Class Ink Ribbon Material

Thermal-Transfer Xylene & Solvent-Resistant Ribbon

Product Information

Intended Use:	High performance resin ink ribbon for thermal transfer printers. Resistant to harsh solvents like xylene, toluene, ethanol, acetone, MEK, and other chemicals. Intended for printing on labels used on microscope slides for histology and cytology labs used with a variety of GA International materials.
Ink Color:	Black
Ink Composition:	Resin
Backing Material Composition:	Polyethylene Terephthalate (PET) Film
Storage Instructions:	5°C to 40°C (23°F to 104°F) at 20% to 85% RH, in original packaging
Compliance:	Compliant to RoHS 3 (EU Directive 2015/863). Compliant to the requirement of REACH, Substances of Very High Concern (SVHC).
Product Warranty:	Refer to our Terms and Conditions found on https://www.labtag.com/resources/terms-and-conditions/

GA International Internal Product Testing Results

Printout Quality Legend

5 **Excellent**
Printout is unaffected and 1D/2D barcode is perfectly readable/scannable

4 **Very Good**
Printout is lightly affected and 1D/2D barcode is readable/scannable

3 **Good**
Printout is moderately affected but 1D/2D barcode is readable/scannable

2 **Low**
Printout is easily smudged or removed; 1D/2D barcode is not readable/scannable

1 **Poor**
The printout and 1D/2D barcode are degraded or erased

Xylene Resistance Immersion End Point Determination

Immersion time of printed label	15 min	30 min	1h	2h	4h	6h	8h	16h
Printout Quality Score (1-5 scale)	5	5	5	5	5	5	5	5

GA International xylene resistant labels were printed using a Zebra thermal-transfer printer and XAR-class ribbon at darkness setting 28 and featuring text and code 128 barcodes. Printed labels were then applied to microscope slides at room temperature (+21°C/+70°F) in triplicate. The slides were placed in an oven at 70° °C for 15 minutes, after which they were immersed in xylene for durations of 15 minutes, 30 minutes, 1hour, 2hours, 4hours, 6hours, 8hours and 16hours. The labels were evaluated for any changes in printout quality.

Hematoxylin & Eosin Stain Resistance on Printed Labels

Printout Quality Score (1-5 scale)	5

GA International xylene resistant labels were printed using a Zebra thermal-transfer printer and XAR-class ribbon and darkness setting 28 and featuring text and code 128 barcodes. printed labels were then applied on microscope slides at room temperature (+21°C/+70°F) in triplicate. The basic staining protocol used includes dewaxing step, dehydration, and staining with hematoxylin and eosin.

Antigen Retrieval Resistance on Printed Labels		
Antigen retrieval conditions	**pH: 6**	**pH: 8.5**
Printout Quality Score (1-5 scale)	5	5

GA International xylene resistant labels were printed using a Zebra thermal-transfer printer and XAR-class ribbon, darkness setting 28, and featuring text and code 128 barcodes. Printed labels were then applied onto microscope slides at room temperature (+21°C/+70°F) in triplicate. The applied protocol includes 1. Dewaxing using heating and xylene immersion, 2. Dehydration using ethanol, 3. Heating in high or low pH buffer using pressure cooker, and 4. Washing with 4%SDS solution for 5 minutes.

Chemical Resistance on Printed Labels	
Solvent/Chemical	**Printout Quality Score (1-5 scale)**
70% ethanol	5
100% ethanol	5
100% Isopropanol	5
Acetone	5
Toluene	5
MEK	5
Pro-Par	5
Clarify™	5
Histo-Clear™	5
DMSO	5

GA International xylene resistant labels were printed using a Zebra thermal-transfer printer and XAR-class ribbon, darkness set to 28, and featuring text and code 128 barcodes. Printed labels were then applied to microscope slides at room temperature (+21°C/+70°F) in triplicate, followed by immersion in various chemicals for 1 hour. The labels were evaluated for any changes in printout quality and barcode scannability after exposure to the chemicals.

High Temperature Testing	
Surface / Condition	**Printout Quality Score (1-5 scale)**
Printed label on microscope slide, 120ºC, 30 minutes	5

GA International xylene resistant labels were printed using a Zebra thermal-transfer printer and XAR-class, darkness set to 28, and featuring text and code 128 barcodes. Printed labels were then applied to microscope slides at room temperature (+21°C/+70°F) in triplicate, then heated at +120°C in oven for 30 minutes. The labeled surfaces were examined immediately upon removal from the storage condition. The printout durability was determined by rubbing the printout with a cotton swab for 30 seconds and recording the legibility of the printed information and the scannability of the barcode. Disclaimer: Please note that the 30-minute duration for the dry heat resistance test was selected for this experiment. This duration is not indicative of the maximum limit and further testing is recommended to determine the full extent of heat resistance.

Low Temperature Testing		
Storage Temperature	**Container/Surface**	**Printout Quality Score (1-5 scale)**
-80°C freezer for 24 hrs	Printed label on microscope slide	5
-196°C liquid nitrogen for 30 days	Printed cryogenic label on polypropylene cryo vial	5

GA International xylene resistant and cryogenic labels were printed using a Zebra thermal-transfer printer and XAR-class ribbon, darkness set to 28, and featuring code 128 barcodes. These labels were then applied to microscope slides or cryovials at room temperature (+21°C/+70°F) in triplicate, followed by storage in -80°C freezer for 24 hours, or at -196°C liquid nitrogen dewar for 30 days. The labeled surfaces were examined immediately upon removal from the storage condition. The printout durability was determined by rubbing the printout with a cotton swab for 30 seconds and recording the legibility of the printed information and the scannability of the barcode.

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