

**Description:** POLYONICS XF-301 is a nylon film with a permanent pressure sensitive acrylic adhesive and a high opacity, matte white colored topcoat specifically designed for thermal transfer, dot matrix or write-on printing.

**Applications:**

- POLYONICS XF-301 is designed for barcode or alphanumeric identification of wire and cable marking.
- Terminal Marking
- Tubing
- Vial or slide labeling for laboratory identification
- General label applications where the part has a curved or contoured surface.
- XF-301 is particularly useful in manufacturing processes where dimensional stability of the label is critical.

**Special Considerations:**

- The surface that you want to label should be clean, dry and free of any surface contamination, such as dust, oil or rust. Isopropyl alcohol would be a recommend solvent to clean the surface.
- When you apply the label, you must use firm pressure to increase the physical contact of the adhesive with the surface of the product.
- Pressure sensitive adhesives will provide stronger bonds to a warm surface, as compared to a colder one. The adhesive will 'flow' more readily, increasing the surface area and increasing the adhesion peel strength.
- All values shown are averages and should not be used for specification purposes. Adhesion and tack values have a 15% tolerance allotted to the above values stated.
- Test data and test results contained in this document are for general information only and shall not be relied upon by POLYONICS customers for designs and specifications, or be relied on as meeting specified performance criteria.
- Customers desiring to develop specifications or performance criteria for specific product applications should contact Polyonics for further information
- The XF-301 has been tested and approved in cryogenic laboratory applications in liquid nitrogen at -196°C (-320°F).



**Technical Data**

Properties	Test Method	Average Results	
		USA Units	SI Units
<b>Thickness</b>	<b>ASTM D1000</b>		
-Substrate		0.0050 inch	0.127 mm
-Adhesive		0.0010 inch	0.025 mm
-Total		0.0060inch	0.152 mm
<b>Adhesion</b>	<b>Polyonics 80313</b>		
<b>Stainless Steel</b>	<b>20 minute dwell</b>	≥ 27 oz/in	30N/100 mm
	<b>24 hour dwell</b>	≥ 30 oz/in	33N/100 mm
<b>Tack</b>	<b>Polyonics 80155</b>		
		≥ 1000 g/in	
<b>Weatherometer Testing</b>	<b>ASTM G154</b>	No Visible Effect	
<b>Short Term High Temperature</b>	5 minutes at 180°C	Slight discoloration	
<b>Long Term High Temperature</b>	30 days 110°C	No Visible Effect	
<b>Short Term Cold Temperature</b>	1 hour liquid nitrogen at -196°C (-320°F)	No Visible Effect	
<b>Long Term Cold Temperature</b>	30 days at -70°C	No visible Effect	
<b>Temperature Range</b>	-40 to 293 °F (-40 to 145°C)		
<b>Shelf life</b>	<b>1 year below 80°F (27°C) and 60% R.H.</b>		
<b>UL File #</b>	PGJ12.MH19503		
<b>CUL File #</b>	PGJ18.MH19503		
<b>UL/CUL Approved Ribbons</b>	DNP R510, Ricoh B110A, D110A, Ilmak SP330		

**Durability Testing**

Adhesive Performance Property	Chemical Resistance	
Chemical Re-agent	Subjective Observation of Visual Change	
	Effect to label- Stock/adhesive	Dot matrix print
Methel Ethyl Ketone	Complete unwrap	No visible effect
1,1,1- Trichloroethane	Complete unwrap	No visible effect
Isopropyl Alcohol	Complete unwrap	No visible effect
Mineral spirits	Slight unwrap	No visible effect
SAE 20 WT oil at 70°C	No unwrap, label stained tan	No visible effect
Mil 5606 oil	No unwrap, label stained red	No visible effect
Gasoline	Complete unwrap, label discolored	No visible effect
Rust Veto® 342	No unwrap, label discoloration	No visible effect
De-ionized water	No visible effect	No visible effect
3% Alconox® Detergent	No visible effect	No visible effect
10% Sodium hydroxide solution	No visible effect	No visible effect
10% Sulfuric acid solution	No visible effect	No visible effect
Buzz saw degreaser	Complete unwrap	No visible effect
S-kut cutting oil 332	No unwrap, label stained red	No visible effect
5% salt solution	No visible effect	No visible effect



Chemical Testing

Table with 5 columns: Chemical Re-agent, Ricoh B110A-thermal transfer ribbon, Ricoh B110C-Thermal transfer ribbon, Iimak SP330-thermal transfer ribbon, Dai Nippon R510 thermal transfer ribbon. Rows include various solvents and oils with their respective effects on the ribbons.

Polyonics Material Compliance

Table with 2 columns: Compliance Standard (RoHS, REACH, Halogens) and Description of limits set forth in various directives and commissions.

Key for tables on page 2 & 3

Key for tables on page 2 & 3. Includes Durability- (Samples wrapped around a 12 AWG, TFE jacketed wire...), Chemical- (Samples printed with ribbon listed on a Datamax I4604 thermal transfer printer...), and Reference: (ASTM: American Society for Testing and Materials (U.S.A.), SI: International System of Units).





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**XF-301**

**Thermal Transfer Printable Nylon  
White**

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**WARRANTY-LIMITATION**

Polyonics' products are sold with the understanding that the Buyer will test them in actual use and determine for him/herself their adaptability to his/her intended uses. Polyonics warrants to the Buyer that its products are free from defects in material and workmanship, but limits its obligation under this warranty to replacement of the products shown to Polyonics' satisfaction to have been defective, provided that the Buyer has complied with the handling, storage and shelf life requirements as specified by Polyonics in applicable materials specifications.

The above warranties extend solely to Buyer and all warranty claims must be made by Buyer. Rework or Replacement shall neither extend nor decrease the original warranty period. The term of all warranty periods shall not exceed thirty (30) days from the date of the original shipment.

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