



## 8000T Cryocool

# Permanent labels

## Thermal Transfer

### Description:

8000T Cryocool is a 58 micron thermal transfer printable polypropylene label coated with a high performance acrylic adhesive for use in cryogenic applications. This adhesive offers resistance to temperatures as low as -196°C for liquid nitrogen applications.

It is designed for use with Zebra 5095 resin thermal transfer ribbons to produce excellent print quality. The smear/scratch resistance and low temperature adhesion performance make 8000T Cryocool an excellent choice for applications requiring a combination of image durability and extreme low temperature adhesion.

### Suggested Applications:

Cryogenic applications involving a deep freezing process that takes objects down in temperature below -151°C. 8000T Cryocool will also withstand conditions such as dry ice (-80°C), steam autoclave and gamma radiation.

- Medical laboratories
- Universities/research facilities
- Hospitals
- Cold temperature/ industrial manufacturing

### Technical Specifications

	Description	Caliper
Facestock	White top coated polypropylene	58 microns
Adhesive	High performance permanent acrylic	20 microns
Liner	White Kraft liner	58 microns
	Total	136 microns

**Recommended Zebra Ribbons:** 5095

**Recommended Zebra printers:** mid-range and high performance

**Minimum Application Temperature:** -29°C

**Service Temperature Range:** -196°C to 90°C

**Recommended Storage Conditions:** One year duration when stored at 0°C to 21°C at 35% to 50% RH



## Cryogenic Testing: Test Procedure

Labels were applied to glass vials (2.8 cm OD), polypropylene centrifuge tubes (3.5 cm OD, 50ml) and glass microscope slides and allowed a 24 hour dwell time before exposure to above conditions.

Environment	Test Method	Typical Results
High Temp.	30 days at listed temperature	No visible effect at 90 C (194 F)
Low Temp.	30 days at -70 C (-94 F)	No Visible effect
Freezer	3 cycles of 16 hours at -70 C (-94 F)/ 8 hours at room temp.	Glass vial : Recommended PP centrifuge tube: Recommended Glass microscope slide: Recommended Flat PP: Recommended
Pressure Cooker	3 cycles of 1 hour in 121 C (250 F) 15 psi pressure cooker/ 23 hours room temperature	Glass vial : Recommended PP centrifuge tube: Recommended Glass microscope slide: Recommended Flat PP: Recommended
Liquid Nitrogen	3 cycles of 4 hours at -196 C (-320 F)/ 20 hours at room temperature	Glass vial : Not recommended PP centrifuge tube: Recommended Glass microscope slide: Recommended Flat PP: Recommended
Freezer to boiling water	1 hour at -70 C (-94 F) then placed in boiling water 100 C (212 F)	Glass vial : May work, must test PP centrifuge tube: Recommended Glass microscope slide: May work, must test Flat PP: Recommended
Liquid Nitrogen to boiling water	1 hour at -196 C (-320 F) then placed in boiling water 100C (212 F) for 10 minutes	Glass vial : Not Recommended PP centrifuge tube: Recommended Glass microscope slide: May work, must test Flat PP: Recommended



**180° Peel Room Temperature Peel Adhesion (N/m):**

Steel		Polycarbonate		Polyethylene	
5 min	24 hr	5 min	24 hr	5 min	24 hr
319	352	121	154	121	154

**Suggested Ribbons for Applications with Chemicals**

	Weak					Moderate				Harsh			Extreme				
	Blood	Body Fluid	Salt Water	Water	Window Cleaner	Alcohol	Ammonia	Bleach	IPA	Gasoline	Grease	Oil	Acetone	IR Reflow	MEK	TCE	Xylene
<b>5095</b>	X	X	X	X	X		X	x	X								

“X” indicates acceptable chemical resistance

**Product Performance and Suitability**

All information on this document is to be used for guidance only and is not to be used for setting specifications. All purchasers of Zebra products shall be responsible for independently determining if the product conforms to all requirements of the application.

For testing of this product, please order SAM66680