• Diversified Biotech •

Product Specification Sheet

Product Name: Laser Tough-Tags®

Face stock: Polyester – 2.3 mil (58 microns)

Adhesive: Acrylic – 0.8 mil (20 microns)

Liner: 3.7 mil (94 microns)

Temperature Resistance: -40°C to 149°C

RoHS compliant

Adhesion Test: 180° peel strength, 1" wide sample

Application Temperature: Room temperature, 50% relative humidity or less. Surface area must be free of moisture. Low Tempurature surfaces (below 10C)can cause the adhesive to become so firm that it will not develop maximum contact with substrate. Higher initial bonds can be achieved through increased rubdown pressure.

Adhesion Time	**10 min dwell at RT - oz. /in.**	**3 days at 72°F (22°C) 50% R.H. - oz. /in.**
Substrate		
Polypropylene	18	18

Tests:

- 48 Hours - Water at room temperature – no visual change
- Chemical Resistance: The properties defined are based on four hour immersions
- at room temperature 22ºC unless otherwise noted. Samples were applied to stainless steel panels 24 hours prior to immersion and were evaluated one hour after removal from the solution for peel adhesion.
- Strong resistance to: Isopropyl Alcohol, Detergent (1% Alconox), Engine Oil, Water at pH4 and at pH10, 409 Cleaning solution, Mineral Spirits.

Shelf Life: 18 months from date of manufacture. Store at 72°F and 50% relative humidity.

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EU REACH
This product is an article, without intended release of a chemical substance, under the Regulation No 1907/2006 of the European Parliament and the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (refer to REACH, Article 3(3)). It is not a chemical preparation. Therefore, it is not subject to the pre- registration or the registration process. It does not require a safety data sheet.
This product does not contain at greater than 0.1% by weight a Substance of Very High Concern (SVHC) substance identified according to Article 59 of REACH. This declaration reflects the substances on the candidate SVHC list, effective December 2015

EU RoHS
This product does not exceed the maximum concentration values (MCVs) in EU Directive 2002/95/EC (Restriction of the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment), as amended by Commission Decision 2005/618/EC, which means that each of the homogenous materials within this product is below the following MCVs: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; and (b) 0.01% (by weight) for cadmium.

Features/Applications:
Excellent toner anchorage
Firm adhesive resists oozing

Environmental Performance
The properties defined are based on four hour immersions at room temperature 22ºC unless otherwise noted. Samples were applied to stainless steel panels 24 hours prior to immersion and were evaluated one hour after removal from the solution for peel adhesion. Adhesion measured at 180º peel angle (ASTM D3330) at 305 mm/min.

Chemical Resistance	**Adhesion to Stainless Steel**	**Appearance**	**Edge Penetration**
Chemical	**N/10mm Oz/In**	**Visual**	**Millimetres**
Isopropyl Alcohol	6.6 60	No change	0.8
Detergent (1% Alconox®*)	7.0 64	No change	0
Engine Oil (10W30) @ 250°F (121°C)	7.0 64	No change	1
Water for 48 hours	7.2 66	No change	0
pH 4	7.1 65	No change	0
PH10	7.0 64	No change	0
409 ®* Cleaning solution	7.0 64	No change	0

Toluene 3.6 33 Topcoat damaged 6.5
Acetone 5.1 47 Topcoat damaged
or gone
4.3
Brake Fluid 8.1 74 No change 0
Gasoline 3.9 36 No change 5.8
Diesel Fuel 6.8 62 No change 1
Mineral Spirits 5.9 54 No change 2.4
Hydraulic Fluid 7.2 66 No change 0

Temperature Resistance
149°C for 24 hours: no significant visual change
0.75% MD shrinkage
0.9% CD shrinkage
-40°C for 3 days: no significant visual change

Humidity Resistance 24 hours at 38°C and 100% relative humidity
No significant changes in appearance or adhesion

Signature: Greg Kwak **Title:** Account Manager/Quality Control **Date:** March 6, 2014