





**Table 1**  
**Typical Properties of Kapton® JP Polyimide Film versus Kapton® 500HA**

Property	100JP	200JP	300JP	500JP	500HA	Test Method
<b>Physical</b>						
Ultimate Tensile Strength, kpsi at 23°C (73°F) at 200°C (392°F)	28.8 14.7	30.5 16.2	31.4 15.3	28.5 14.1	25.0 14.9	ASTM D-882
Yield Point at 3%, kpsi at 23°C (73°F) at 200°C (392°F)	10.9 5.5	10.6 5.6	11.4 4.6	10 4.2	9.5 4.8	ASTM D-882
Stress to Produce 5% Elongation, kpsi at 23°C (73°F) at 200°C (392°F)	14.7 7.2	14.4 7.3	15.1 6.9	13.9 6.3	15.0 6.8	ASTM D-882
Ultimate Elongation, % at 23°C (73°F) at 200°C (392°F)	89 142	99 148	115 155	120 170	115 126	ASTM D-882
Tensile Modulus, kpsi at 23°C (73°F) at 200°C (392°F)	412 205	410 220	405 188	370 173	400 204	ASTM D-882
Density, g/cc or g/mL	1.3973	1.4001	1.3997	1.3999	1.4170	ASTM D-1505
Yield, ft <sup>2</sup> /lb	137.8	68.9	45.9	27.6	27	
<b>Thermal</b>						
Coefficient of Linear Expansion, ppm/C	41	41	41	41	47	ASTM D-696
Specific Heat, J/g·K	1.21	1.19	1.23	1.28	1.26	Diff. Calor.
Glass Transition Temperature (T <sub>g</sub> ), C	300	300	300	300	420	Diff. Calor.
Dimensional Stability, MD/TD at 400°C (752°F) at 250°C (482°F)	— 0.18/0.13	— 0.30/0.24	2.34/1.89 0.24/0.20	2.78/2.10 0.31/0.22	2.66/2.22 0.28/0.16	ASTM D-5214
<b>Electrical</b>						
Dielectric Strength, V/mil	6870	5500	4300	3500	3500	ASTM D-149
Dielectric Constant, 50% RH, 1 kHz at 25°C (77°F)	3.34	3.44	3.46	3.46	3.40	ASTM D-150
Dissipation Factor	0.0013	0.0011	0.0018	0.0019	0.0025	ASTM D-150
<b>Chemical</b>						
Moisture Absorption, % 24 hr in boiling water	1.5	1.8	1.9	2.1	3.3	ASTM D-570

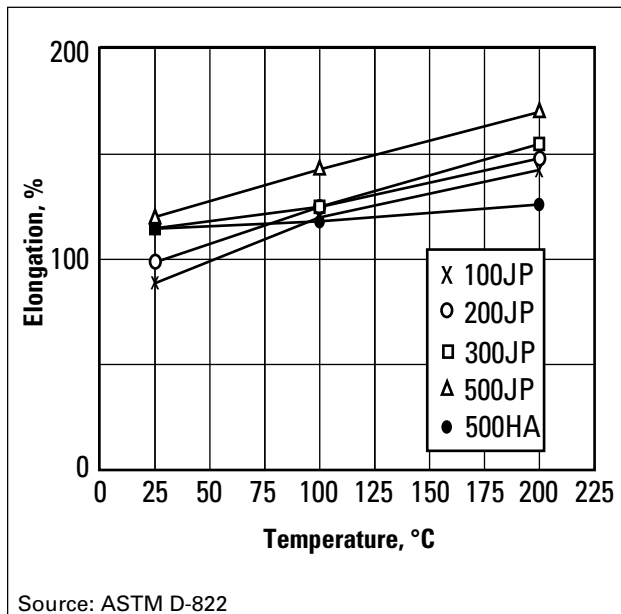
## Forming Information

JP films can be thermoformed using high temperature forming technology developed by DuPont. JP films can be formed at temperatures approximately 93°C (200°F) lower than those needed to form conventional Kapton® films such as HN and HA.

Some guidelines for forming JP films include:

- forming temperature of 280–300°C (535–570°F)
- 400–500 psi pressure
- annealing of the part

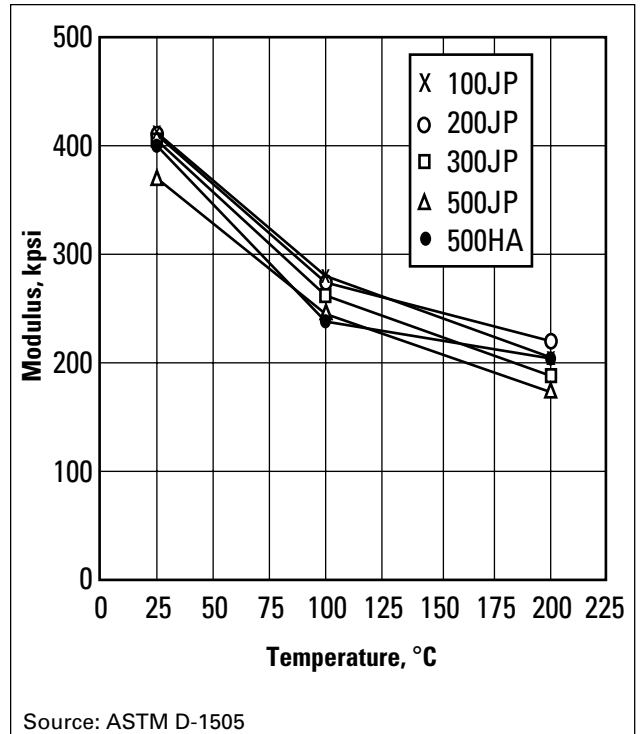
**Figure 1. Elongation of Kapton® JP Films as a Function of Temperature**



Parts formed using optimum forming conditions have shrinkage of <4% after 8 hr exposure to temperatures up to 260°C (500°F).

DuPont can provide additional forming information for specific applications if requested. DuPont has also established a list of experienced forming partners to provide parts to customers.

**Figure 2. Modulus of Kapton® JP Films as a Function of Temperature**



## North America

### *United States*

DuPont High Performance Films  
P.O. Box 89  
Route 23 South and DuPont Road  
Circleville, OH 43113  
Ordering Information:  
Tel: (800) 967-5607  
Product Information:  
Tel: (800) 237-4357  
Fax: (800) 879-4481

### *Canada*

DuPont Canada, Inc.  
P.O. Box 2200, Streetsville  
Mississauga, Ontario, Canada  
L5M 2H3  
Inquiries: (905) 821-5603  
Customer Service: (800) 263-2742  
Fax: (905) 821-5230

## Latin America

### *Argentina*

DuPont Argentina  
Av. Mitre y Calle 5  
CP 1884, Berazategui, Argentina  
Pcia de Buenos Aires  
Tel: 54-1-256-2435  
Fax: 54-1-319-4451

### *Brazil*

DuPont do Brasil  
Al. Itapecuru, 506  
06454-080, Alphaville  
Barueri, Sao Paulo  
Tel: 55-11-421-8689  
Fax: 55-11-421-8686

### *Mexico*

DuPont S.A. de C.V.  
Homero 206  
Col. Chapultepec Morales  
Mexico, D.F. 11570  
Tel: 525-722-1184  
Fax: 525-722-1370

### *Venezuela*

DuPont Venezuela  
Edificio "Los Frailes"  
Calle la Guarita  
Urbanization Chuao  
CP 1060, Caracas, Venezuela  
Tel: 58-2-92-8547  
Fax: 58-2-91-5638

## Europe

### *Luxembourg*

DuPont de Nemours  
(Luxembourg) S.A.  
Rue Général Patton  
L-2984 Luxembourg  
Grand Duchy of Luxembourg  
Tel: 352-3666-5575  
Fax: 352-3666-5000

### *Community of Independent States*

DuPont de Nemours Intl. S.A.  
Representative Office—Corporate  
B. Palashevsky per. 13/2  
103104 Moscow  
Russia  
Tel: 7-095-956-3850  
Fax: 7-095-956-3853

### *Deutschland*

DuPont de Nemours (Deutschland)  
GmbH  
DuPont Straße 1  
D-61343 Bad Homburg v.d.H.  
Tel: 49-6172-87-2790  
Fax: 49-6172-87-2930

### *France*

DuPont de Nemours (France) S.A.  
Z.A. de Courtaboeuf  
3 Av. du Canada—B.P. 85  
F-91943 Les Ulis Cedex A  
Tel: 33-1-69 82 54 76  
Fax: 33-1-69-82 54 98

### *Italy*

DuPont de Nemours (Italiana) S.p.A.  
16, Via A. Volta  
I-20093 Cologno Monzese (MI)  
Tel: 39-2-25-302 326  
Fax: 39-2-25-43310

### *United Kingdom*

DuPont (U.K.) Ltd.  
Maylands Avenue  
GB-Hemel Hempstead  
Herts HP2 7DP  
Tel: 44-1442-21-8637  
Fax: 44-1442-21-8639

## Asia Pacific

### *Japan*

DuPont Kabushiki Katsha  
Arco Tower  
8-1, Shimomeguro 1-chome  
Meguro-ku, Tokyo 153  
Japan  
Tel: 81-3-5434-6139  
Fax: 81-3-5434-6193

### *Hong Kong/China*

DuPont China Ltd.  
1122 New World Office Bldg.  
East Wing  
Salisbury Road, Kowloon  
Hong Kong  
Tel: 852-2734-5401  
Fax: 852-2721-4117

### *India*

DuPont South Asia Ltd.  
503-505, Madhava  
Bandra Kurla Commercial Complex  
Bandra (E)  
Bombay 400 051  
India  
Tel: 91-22-6438255  
Fax: 91-22-6438297

### *Korea*

DuPont Korea Ltd.  
4/5th Floor, Asia Tower  
#726, Yeoksam-dong, Kangnam-ku  
Seoul 135-082, Korea  
Tel: 82-2-222-5398  
Fax: 82-2-222-5476

### *Singapore*

DuPont Singapore Pte Ltd.  
1 Maritime Square  
#07-01 World Trade Centre  
Singapore 099253  
Tel: 65-279-3434  
Fax: 65-279-3456

### *Taiwan*

DuPont Taiwan Ltd.  
7, Tsu-Chiang 1st Road  
Chungli, Taoyuan  
Taiwan, ROC  
Tel: 866-3-4549204  
Fax: 866-3-4620676

Contact DuPont on the Internet at [www.dupont.com](http://www.dupont.com)

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**Caution:** Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102.

