

**TEXAS COTTON QUALITY EVALUATION
CROP OF 1991**

Conducted at
**INTERNATIONAL CENTER FOR TEXTILE
RESEARCH and DEVELOPMENT**

Texas Tech University
Lubbock, Texas

Sponsored by
THE TEXAS FOOD AND FIBERS COMMISSION

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This is the twelfth in a series of Annual Reports which attempt to provide interested parties with information regarding the quality of cotton produced in Texas. Processing and testing are performed entirely at the International Center for Textile Research and Development.

To perform this evaluation, we attempt to obtain cottons which are as representative of the crop as possible in terms of quality. Furthermore, recourse is made to data published by the USDA to select the most popular varieties planted. Since there are some constraints on the size of the study, we limit our sampling to about two bales from each of the USDA Marketing Service Office areas within Texas; namely Abilene, Altus (OK), Corpus Christi, El Paso, Harlingen, Lamesa, Lubbock and Waco. Some of these districts extend into neighboring states and occasionally growths from those areas are included. Also, because the quantity of cotton produced in Lamesa and Lubbock districts is usually greatest, a third bale from each of these regions is included.

Samples of fiber are taken from each bale and tested by the traditional individual instruments such as the Stelometer and Fibrograph. High Volume Instrument (HVI) test lines, namely the Motion Control HVI 3000 and Spinlab HVI 900 Series systems, are also used as well as the IIC/Shirley F/MT III and Peyer Texlab AL-101 instruments.

Figure 1 shows the sequence of machinery used to produce the yarns tested in the study. In contrast to the previous two years' crop studies, finisher drawing was performed using a Rieter RSB 851 drawframe rather than the Zinser 720D machine.

Three yarn numbers are produced by rotor and ring spinning. The spinning specifications are presented in Table I. We continue to evaluate yarns from the Rieter m1/1 machine to maintain the database. Like the previous crop study (1990), we provide additional quality information provided by yarns spun using the Schlafhorst Autocoro machine running at elevated speed.

We are grateful to the Texas Food and Fibers Commission for sponsoring this program and assisting in publishing this report. In addition, we would like to acknowledge the efforts expended by the Plains Cotton Cooperative Association of Lubbock, The Southwestern Irrigated Cotton Growers Association of El Paso and the Caney Valley Cotton Company of Caldwell in locating the bales for this study.

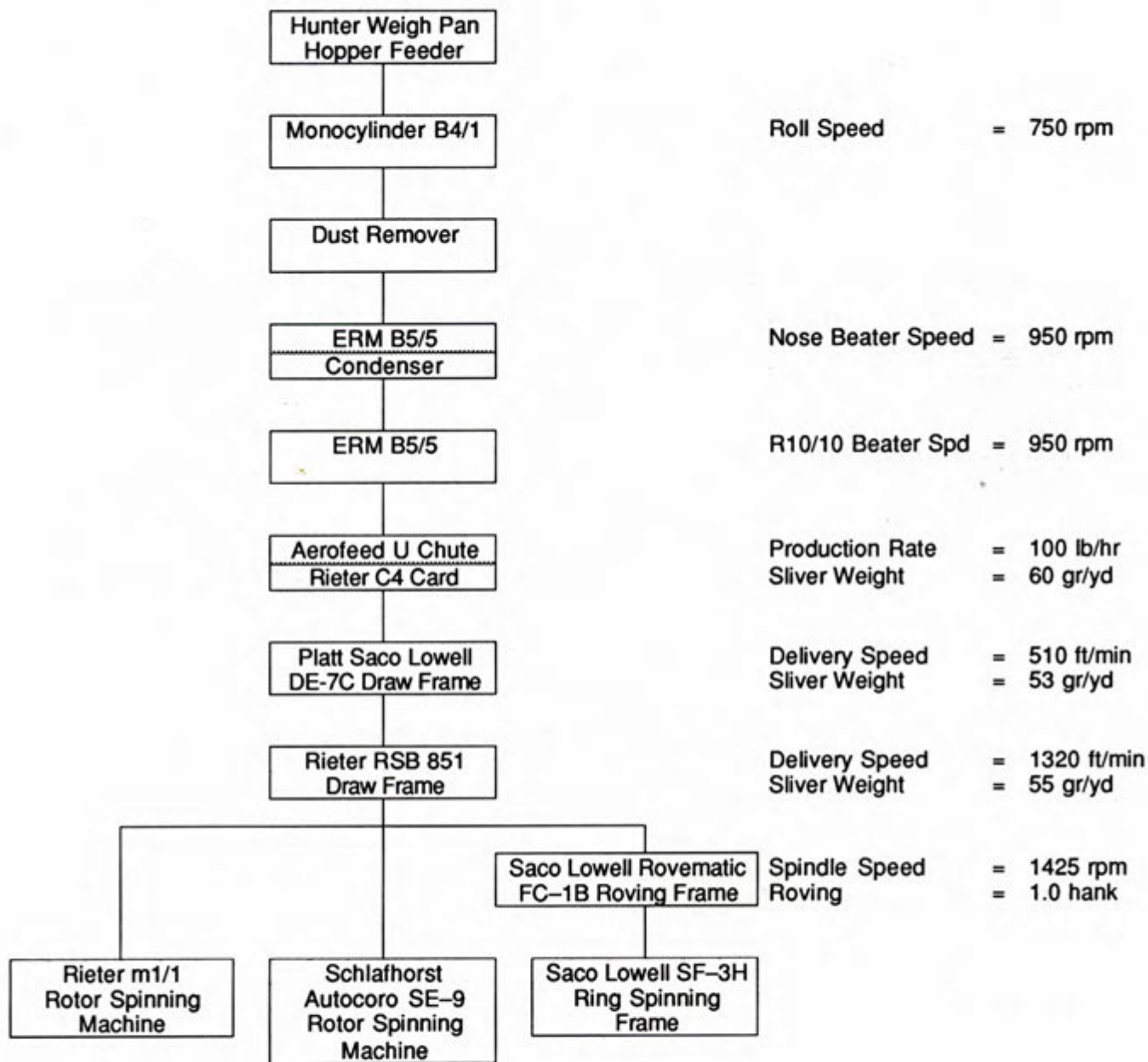


FIGURE 1

OUTLINE OF MECHANICAL PROCESSES

TABLE I
SPINNING SPECIFICATIONS

(a) ROTOR SPINNING

Sliver Machine	55 gr/yd Finisher Drawframe					
	Rieter m1/1			Schlafhorst Autocoro		
Nominal Yarn Number (N_e)	10	22	30	10	22	30
Rotor Type	45 N St			T31		
Rotor Speed (rpm)	55,000			100,000		
Opening Roller Type	T.52			B 174 DN		
Opening Roller Speed (rpm)	6700			7200		
Draft (approximate)	66	145	198	66	145	198
Twist Multiplier (α_e)	4.85	4.80	4.78	4.78	4.79	4.79
Yarn Speed (yd/min)	99.5	67.7	58.3	183.8	123.7	105.9
Navel	Smooth Steel			4-grooved Ceramic		

(b) RING SPINNING

Roving Frame	Saco Lowell
Flyer Speed (rpm)	1425
Roving	1.0 hank
Ring Spinning Frame	Saco Lowell SF-3H
Spindle Speed (rpm)	10,000
Ring Diameter (in)	2
Twist Multiplier (α_e)	4.00

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	23.9 g/tex	1/8" Gauge Strength	24	1/8" Gauge Strength	24.0
Elongation	5.83 %	Elongation	6.8	Elongation	6.4
2.5% Span Length	1.09 in.	Length	1.07	Length	1.07
Uniformity Ratio	46.3 %	Uniformity Ratio	81	Uniformity Ratio	81.0
Short Fiber Content	4.53 %	Micronaire Value	4.6	Micronaire Value	4.6
Micronaire Value	4.50 %	Reflectance	72	Reflectance	73.5
Pressley Strength	88 Mpsi	Yellowness	8.0	Yellowness	8.6
Shirley Non-lint Content	1.43 %	Index of	- Color 41 - Leaf 2	Index of:	- Color 41 - Leaf 6
IIC/Shirley F/MT III	Micronaire: 4.6	Fineness:	180 mtex	Percent Mature Fibers:	86.0
Peyer Textlab AL-101	Upper Quartile Length: 1.05 in.	Mean Length:	0.86 in.	CV% of Mean:	31.1
				Percent Short Fibers:	12.4

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlathorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yam Number (Ne)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
Nominal Twist Multiplier (α_e)									
<u>Skein Test:</u>									
Yam Number (Ne)	10.17	21.97	30.58	10.01	22.03	29.81	16.33	21.30	30.48
CV% of Yam Number	0.7	0.8	1.0	0.7	0.7	0.6	0.7	1.1	1.4
Count-Strength-Product	2245	1862	1724	2368	1901	1759	2141	1988	1874
CV% of CSP	1.7	2.2	2.1	2.1	3.6	2.9	2.6	2.6	5.2
<u>Single-Yarn Strength Test:</u>									
Tenacity (g/tex)	13.27	12.10	11.19	13.48	12.01	11.33	14.13	14.05	12.39
Mean Strength (g)	771	325	216	795	322	224	511	390	240
CV% of Break	6.0	8.7	10.9	6.5	7.9	8.2	10.4	9.9	12.8
Elongation (%)	6.32	5.46	4.77	6.68	5.71	5.37	6.20	5.80	4.85
CV% of Elongation	6.6	8.5	10.7	6.3	7.0	7.3	8.9	10.2	12.0
Specific Work of Rupture (g/tex)	0.481	0.364	0.297	0.510	0.370	0.326	0.447	0.421	0.309
CV% of Work of Rupture	11.3	15.4	19.1	11.6	13.8	14.6	16.6	16.1	22.6
Initial Modulus (g/tex)	284	264	309	230	202	228	204	245	269
<u>Uster Evenness Test:</u>									
Non-Uniformity (CV%)	13.09	15.05	17.85	12.19	14.29	16.80	18.17	19.51	23.31
Thin Places/1,000 yds	4	32	206	1	24	126	129	223	841
Thick Places/1,000 yds	45	89	339	40	50	221	461	772	1626
Neps/1,000 yds	38	109	804	46	65	637	68	135	590
ASTM Yam Grade	B	C+	B	B	B+	B	C	C	C

TABLE III LOT NUMBER 2225 VARIETY DPL 51 GIN POINT/AREA San Benito/Harlingen

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	22.8 g/tex	1/8" Gauge Strength	24 g/tex	1/8" Gauge Strength	23.0 g/tex
Elongation	5.58 %	Elongation	6.4 %	Elongation	6.4 %
2.5% Span Length	1.08 in.	Length	1.11 in.	Length	1.10 in.
Uniformity Ratio	44.8 %	Uniformity Ratio	80 %	Uniformity Ratio	81.4 %
Short Fiber Content	7.13 %	Micronaire Value	3.9 %	Micronaire Value	4.0 %
Micronaire Value	3.80 %	Reflectance	73 %	Reflectance	75.5 %
Pressley Strength	85 Mpsi	Yellowness	8.2 %	Yellowness	8.8 %
Shirley Non-lint Content	2.00 %	Index of -Color	41 - Leaf 1	Index of: -Color	31 - Leaf 3
IIC/Shirley F/MT III	Micronaire: 4.0	Fineness:	160 mtex	Percent Mature Fibers:	81.0
Peyer Texlab AL-101	Upper Quartile Length: 1.07 in	Mean Length:	0.85 in	CV% of Mean:	35.2
				Percent Short Fibers:	17.1

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlafhorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
Nominal Twist Multiplier (α_e)									
<u>Skein Test:</u>									
Yarn Number (Ne)	10.08	22.41	30.46	10.02	21.99	29.98	15.97	21.92	29.76
CV% of Yarn Number	0.7	0.7	0.6	0.5	0.4	0.6	1.0	1.1	1.1
Count-Strength-Product	2196	1851	1796	2292	1882	1729	2089	1908	1844
CV% of CSP	2.1	2.1	2.7	1.7	3.3	3.4	2.2	2.9	3.0
<u>Single-Yarn Strength Test:</u>									
Tenacity (g/tex)	12.97	12.10	11.26	13.24	11.89	11.25	13.54	13.22	12.16
Mean Strength (g)	760	319	218	781	319	222	501	356	241
CV% of Break	6.1	7.5	7.5	6.1	7.4	9.2	9.7	12.2	10.0
Elongation (%)	6.56	5.76	5.08	6.91	6.09	5.63	6.53	5.87	5.03
CV% of Elongation	6.8	8.4	8.6	5.6	6.9	8.5	8.6	11.2	10.8
Specific Work of Rupture (g/tex)	0.495	0.389	0.318	0.521	0.396	0.346	0.452	0.409	0.322
CV% of Work of Rupture	11.7	14.0	14.3	10.3	14.1	15.8	16.1	19.5	17.6
Initial Modulus (g/tex)	277	267	301	226	207	242	192	227	277
<u>Uster Evenness Test:</u>									
Non-Uniformity (CV%)	12.97	14.73	16.90	12.26	13.95	16.32	18.12	20.20	23.70
Thin Places/1,000 yds	2	20	100	0	11	85	130	289	929
Thick Places/1,000 yds	47	84	276	50	38	164	456	936	1852
Neps/1,000 yds	31	145	857	60	77	716	91	207	978
ASTM Yarn Grade	B+	C+	B	A	B	B	C	C	D+

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	22.9 g/tex	1/8" Gauge Strength	25 g/tex	1/8" Gauge Strength	22.6 g/tex
Elongation	6.42 %	Elongation	7.0 %	Elongation	6.5 %
2.5% Span Length	1.12 in.	Length	1.12 in.	Length	1.14 in.
Uniformity Ratio	45.4 %	Uniformity Ratio	82 %	Uniformity Ratio	83.9 %
Short Fiber Content	6.72 %	Micronaire Value	4.7 %	Micronaire Value	4.7 %
Micronaire Value	4.63 %	Reflectance	74 %	Reflectance	74.7 %
Pressley Strength	83 Mpsi	Yellowness	9.0 %	Yellowness	9.3 %
Shirley Non-lint Content	2.25 %	Index of	- Color 31 - Leaf 2	Index of:	- Color 31 - Leaf 3
IIC/Shirley F/MT III	Micronaire: 4.7	Fineness:	186 mtex	Percent Mature Fibers:	85.0
Peyer Texlab AL-101	Upper Quartile Length: 1.08 in	Mean Length:	0.88 in	CV% of Mean:	30.9
				Percent Short Fibers:	11.3

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlafhorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	4.85	4.81	4.78	4.78	4.78	4.79	4.0	4.0	4.0
Nominal Twist Multiplier (α _e)									
Skein Test:									
Yarn Number (Ne)	10.13	21.69	30.19	10.09	22.06	29.90	15.86	21.65	29.62
CV% of Yarn Number	0.5	0.4	0.6	0.4	0.6	0.8	0.9	1.1	1.0
Count-Strength-Product	2298	1886	1741	2403	1902	1746	2230	2022	2004
CV% of CSP	2.2	2.2	3.2	1.6	2.8	3.5	4.3	3.4	2.7
Single-Yarn Strength Test:									
Tenacity (g/tex)	13.31	12.11	11.33	13.38	11.77	11.18	14.53	14.00	13.20
Mean Strength (g)	777	330	222	784	315	221	541	382	263
CV% of Break	5.7	7.1	9.2	6.4	8.2	9.7	9.6	12.0	9.8
Elongation (%)	6.54	6.02	5.46	7.04	6.08	5.66	6.99	6.34	5.42
CV% of Elongation	7.3	9.1	10.7	5.8	8.3	9.4	9.0	12.8	11.0
Specific Work of Rupture (g/tex)	0.507	0.411	0.344	0.541	0.397	0.350	0.522	0.468	0.380
CV% of Work of Rupture	11.6	14.6	18.0	10.9	15.0	17.3	15.9	21.0	16.8
Initial Modulus (g/tex)	300	282	315	236	202	238	206	222	279
Uster Evenness Test:									
Non-Uniformity (CV%)	12.98	14.95	17.61	12.15	14.56	17.28	17.20	19.37	22.47
Thin Places/1,000 yds	3	30	208	1	33	174	80	206	616
Thick Places/1,000 yds	46	83	311	24	58	279	338	755	1472
Neps/1,000 yds83	33	116	760	22	87	909	78	175	582
ASTM Yarn Grade116	B+	B	C+	A	B	B+	B	C	C

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	22.6 g/tex	1/8" Gauge Strength	25 g/tex	1/8" Gauge Strength	20.3 g/tex
Elongation	5.83 %	Elongation	6.8 %	Elongation	6.5 %
2.5% Span Length	1.09 in.	Length	1.11 in.	Length	1.11 in.
Uniformity Ratio	45.0 %	Uniformity Ratio	82 %	Uniformity Ratio	81.5 %
Short Fiber Content	6.02 %	Micronaire Value	4.6 %	Micronaire Value	4.7 %
Micronaire Value	4.60 %	Reflectance	73	Reflectance	73.8
Pressley Strength	81 Mpsi	Yellowness	8.4	Yellowness	9.1
Shirley Non-lint Content	2.37 %	Index of - Color	41	Index of: - Color	31
ILC/Shirley F/MT III	Micronaire: 4.7	Fineness:	188 mtex	Percent Mature Fibers:	85.0
Peyer Texlab AL-101	Upper Quartile Length: 1.05 in	Mean Length:	0.81 in	Percent Short Fibers:	37.8
		CV% of Mean:			20.3

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlafhorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
Nominal Twist Multiplier (αe)									
Skein Test:									
Yarn Number (Ne)	10.20	22.05	30.12	9.96	21.95	29.93	16.50	21.46	30.69
CV% of Yarn Number	0.6	0.5	0.8	0.5	0.6	0.5	0.7	1.1	1.2
Count-Strength-Product	2079	1729	1576	2176	1729	1600	1983	1759	1676
CV% of CSP	1.5	2.2	4.0	0.9	2.3	2.8	3.0	3.9	4.3
Single-Yarn Strength Test:									
Tenacity (g/tex)	12.13	11.30	10.33	12.59	11.28	10.36	12.97	12.43	11.48
Mean Strength (g)	702	303	202	747	304	204	465	342	221
CV% of Break	11.6	7.6	9.7	6.2	8.5	10.7	11.3	11.5	12.6
Elongation (%)	6.29	5.44	4.80	6.79	5.80	5.36	6.25	5.72	4.91
CV% of Elongation	12.2	8.3	11.4	5.7	7.3	9.8	10.1	11.5	11.0
Specific Work of Rupture (g/tex)	0.450	0.344	0.281	0.493	0.361	0.308	0.423	0.374	0.303
CV% of Work of Rupture	16.8	13.9	19.7	10.9	14.7	18.4	18.5	19.9	21.9
Initial Modulus (g/tex)	275	282	306	221	208	213	200	226	260
Uster Evenness Test:									
Non-Uniformity (CV%)	13.15	14.93	17.63	12.53	14.32	16.93	20.17	21.93	25.60
Thin Places/1,000 yds	2	33	175	0	20	138	277	511	1280
Thick Places/1,000 yds	40	76	291	57	43	224	888	1373	2323
Neps/1,000 yds	36	118	890	69	75	816	166	282	1129
ASTM Yarn Grade	B+	B	B	A	B	B+	B	D	D

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	25.6 g/tex	1/8" Gauge Strength	30	1/8" Gauge Strength	33.0
Elongation	6.50 %	Elongation	7.2 in.	Elongation	5.7 %
2.5% Span Length	1.08 in.	Length	1.10 in.	Length	1.03 in.
Uniformity Ratio	42.4 %	Uniformity Ratio	78 %	Uniformity Ratio	77.2 %
Short Fiber Content	10.1 %	Micronaire Value	3.1	Micronaire Value	3.0
Micronaire Value	3.00 %	Reflectance	76	Reflectance	78.5
Pressley Strength	86 Mpsi	Yellowness	8.8	Yellowness	8.9
Shirley Non-lint Content	2.87 %	Index of	- Color 31 - Leaf 3	Index of	- Color 21 - Leaf 6
IIC/Shirley F/MT III	Micronaire: 3.0	Fineness:	137 mtex	Percent Mature Fibers:	66.0
Peyer Texlab AL-101	Upper Quartile Length: 1.04 in	Mean Length:	0.81 in	Percent Short Fibers:	21.5

YARN PROPERTIES

Spinning Machine:	Rieter m1/1				Schlafhorst Autocoro				Saco Lowell SF-3H Ring			
	10/1	22/1	30/1	40/1	10/1	22/1	30/1	40/1	16/1	22/1	30/1	40/1
Nominal Yarn Number (Ne)	10.05	22.08	30.08	10.03	21.92	30.20	16.03	21.96	16.03	21.96	29.76	
Nominal Twist Multiplier (α_e)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0	4.0	4.0	
<u>Skein Test:</u>												
Yarn Number (Ne)	10.05	22.08	30.08	10.03	21.92	30.20	16.03	21.96	16.03	21.96	29.76	
CV% of Yarn Number	0.7	0.6	0.8	0.3	0.6	0.8	1.4	1.4	1.4	1.4	1.6	
Count-Strength-Product	2458	2117	2005	2641	2127	2032	2313	2138	2313	2138	2029	
CV% of CSP	2.1	3.0	3.6	2.5	2.0	1.5	3.6	2.0	3.6	2.0	3.7	
<u>Single-Yarn Strength Test:</u>												
Tenacity (g/tex)	14.36	12.99	12.40	14.87	13.39	12.46	15.43	14.67	15.43	14.67	13.52	
Mean Strength (g)	845	348	243	877	361	244	568	395	568	395	268	
CV% of Break	6.2	7.7	9.2	6.2	7.6	9.1	10.0	9.8	10.0	9.8	12.4	
Elongation (%)	7.48	6.79	6.18	8.12	7.04	6.67	7.65	6.70	7.65	6.70	6.05	
CV% of Elongation	6.7	7.5	9.6	5.8	6.5	7.2	8.1	10.4	8.1	10.4	11.0	
Specific Work of Rupture (g/tex)	0.613	0.490	0.420	0.676	0.517	0.440	0.591	0.516	0.591	0.516	0.423	
CV% of Work of Rupture	10.9	14.3	16.8	10.7	12.9	15.5	15.6	16.5	15.6	16.5	19.6	
Initial Modulus (g/tex)	279	282	304	217	214	242	181	241	181	241	256	
<u>Uster Evenness Test:</u>												
Non-Uniformity (CV%)	12.67	14.13	16.17	12.50	13.57	15.40	18.93	20.99	18.93	20.99	24.40	
Thin Places/1,000 yds	0	8	7	0	6	52	193	422	193	422	1156	
Thick Places/1,000 yds	34	62	18	85	22	104	538	1044	538	1044	2043	
Neps/1,000 yds	24	99	61	108	46	495	50	136	50	136	687	
ASTM Yarn Grade	B	C+	B	A	B	B+	C	C	C	C	D+	

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	25.4 g/tex	1/8" Gauge Strength	28 g/tex	1/8" Gauge Strength	32.6 g/tex
Elongation	6.50 %	Elongation	8.4 %	Elongation	6.6 %
2.5% Span Length	1.09 in.	Length	1.06 in.	Length	1.11 in.
Uniformity Ratio	45.1 %	Uniformity Ratio	80 %	Uniformity Ratio	81.5 %
Short Fiber Content	6.07 %	Micronaire Value	3.0	Micronaire Value	3.0
Micronaire Value	2.90 %	Reflectance	79	Reflectance	80.2
Pressley Strength	83 Mpsi	Yellowness	8.4	Yellowness	8.5
Shirley Non-lint Content	2.60 %	Index of - Color	21	Index of: - Color	21
IC/Shirley F/MT III	Micronaire: 3.0	Fineness:	129 mtex	Percent Mature Fibers:	68.0
Peyer Texlab AL-101	Upper Quartile Length: 1.00 in	Mean Length:	0.77 in	CV% of Mean:	39.6
				Percent Short Fibers:	24.0

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlafhorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
Nominal Twist Multiplier (α _e)									
<u>Skein Test:</u>									
Yarn Number (Ne)	10.21	22.59	30.27	10.01	22.11	30.01	15.73	21.93	29.08
CV% of Yarn Number	0.6	0.7	0.7	0.6	0.4	0.6	0.7	1.1	1.2
Count-Strength-Product	2302	1998	1915	2471	2014	1913	2343	2159	2089
CV% of CSP	1.5	2.0	2.7	1.4	2.7	3.3	2.0	2.8	2.8
<u>Single-Yarn Strength Test:</u>									
Tenacity (g/tex)	13.43	12.89	12.16	14.15	12.59	12.11	14.87	14.11	13.69
Mean Strength (g)	777	337	237	835	336	238	559	380	278
CV% of Break	5.9	7.3	7.0	5.7	6.7	7.5	9.5	10.3	11.6
Elongation (%)	8.17	7.47	6.71	8.70	7.41	7.13	8.12	7.26	6.76
CV% of Elongation	6.9	7.6	7.7	5.5	7.4	7.0	8.5	8.7	10.7
Specific Work of Rupture (g/tex)	0.636	0.537	0.454	0.703	0.528	0.480	0.624	0.545	0.486
CV% of Work of Rupture	11.4	13.2	14.0	10.3	13.0	13.8	15.7	16.4	20.4
Initial Modulus (g/tex)	243	250	285	209	221	221	174	219	259
<u>Uster Evenness Test:</u>									
Non-Uniformity (CV%)	12.88	14.27	16.13	12.72	13.45	15.42	17.91	19.87	23.06
Thin Places/1,000 yds	0	8	49	0	8	47	104	231	704
Thick Places/1,000 yds	55	88	230	110	35	111	431	902	1729
Neps/1,000 yds	72	197	870	139	80	653	146	300	866
ASTM Yarn Grade	B+	B	B	A	B	B	C	C	C+

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	26.9 g/tex	1/8" Gauge Strength	29 g/tex	1/8" Gauge Strength	34.6 g/tex
Elongation	5.67 %	Elongation	6.4 %	Elongation	6.2 %
2.5% Span Length	1.14 in.	Length	1.15 in.	Length	1.13 in.
Uniformity Ratio	41.7 %	Uniformity Ratio	79 %	Uniformity Ratio	80.1 %
Short Fiber Content	11.53 %	Micronaire Value	2.8	Micronaire Value	2.8
Micronaire Value	2.80 %	Reflectance	78	Reflectance	77.8
Pressley Strength	97 Mpsi	Yellowness	9.6	Yellowness	9.2
Shirley Non-lint Content	2.76 %	Index of	- Color 21 - Leaf 2	Index of:	- Color 21 - Leaf 7
IIC/Shirley F/MT III	Micronaire: 2.8	Fineness:	120 mtex	Percent Mature Fibers:	67.0
Peyer Textlab AL-101	Upper Quartile Length: 1.07 in	Mean Length:	0.87 in	CV% of Mean:	32.5
				Percent Short Fibers:	13.2

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlafhorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Twist Multiplier (α _e)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
<u>Skein Test:</u>									
Yarn Number (Ne)	10.22	21.90	30.25	9.98	21.91	29.85	15.81	22.59	30.29
CV% of Yarn Number	0.8	0.8	0.8	0.5	0.7	0.7	1.3	2.7	1.4
Count-Strength-Product	2629	2304	2232	2755	2318	2184	2675	2509	2377
CV% of CSP	2.2	2.0	1.7	1.4	3.0	2.0	2.4	3.0	3.6
<u>Single-Yarn Strength Test:</u>									
Tenacity (g/tex)	15.24	14.63	13.86	16.23	14.46	13.56	17.59	16.87	15.57
Mean Strength (g)	882	393	271	960	390	268	657	441	304
CV% of Break	6.4	7.1	7.1	5.4	7.5	8.8	8.2	10.1	9.6
Elongation (%)	6.93	6.29	5.85	7.47	6.58	6.25	6.83	6.11	5.29
CV% of Elongation	6.5	8.5	7.7	5.4	6.4	7.3	8.5	9.6	11.1
Specific Work of Rupture (g/tex)	0.579	0.497	0.425	0.650	0.507	0.439	0.588	0.523	0.420
CV% of Work of Rupture	11.6	13.3	13.2	10.1	13.0	14.9	13.3	15.8	17.8
Initial Modulus (g/tex)	265	313	288	204	254	259	238	271	324
<u>Uster Evenness Test:</u>									
Non-Uniformity (CV%)	12.20	13.61	15.51	11.58	12.91	14.73	16.72	18.56	21.65
Thin Places/1,000 yds	0	4	35	0	1	22	57	131	458
Thick Places/1,000 yds	28	58	165	53	20	61	294	627	1333
Neps/1,000 yds	26	133	603	64	53	328	93	177	678
ASTM Yarn Grade	B+	B+	B+	A	B+	A	B	C	C+

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	24.3 g/tex	1/8" Gauge Strength	26 g/tex	1/8" Gauge Strength	30.5 g/tex
Elongation	6.33 %	Elongation	7.2 %	Elongation	6.4 %
2.5% Span Length	1.03 in.	Length	1.04 in.	Length	1.01 in.
Uniformity Ratio	43.5 %	Uniformity Ratio	78 %	Uniformity Ratio	80.1 %
Short Fiber Content	10.77 %	Micronaire Value	2.9	Micronaire Value	2.9
Micronaire Value	2.90 %	Reflectance	76	Reflectance	77.7
Pressley Strength	90 Mpsi	Yellowness	8.8	Yellowness	8.7
Shirley Non-lint Content	3.15 %	Index of - Color	31	Index of: - Color	31
IIC/Shirley F/MT III	Micronaire: 2.9	Fineness:	129 mtex	Percent Mature Fibers:	66.0
Peyer Textlab AL-101	Upper Quartile Length: 0.98 in	Mean Length:	0.77 in	CV% of Mean:	36.2
				Percent Short Fibers:	20.4

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlafhorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
Nominal Twist Multiplier (α _e)									
<u>Skein Test:</u>									
Yarn Number (Ne)	10.28	22.15	29.85	10.00	21.82	29.67	16.13	21.81	30.34
CV% of Yarn Number	0.8	0.8	0.5	0.4	0.6	0.5	0.9	1.2	1.5
Count-Strength-Product	2400	2047	1975	2518	2076	1998	2245	2110	1975
CV% of CSP	3.3	2.8	2.0	1.5	3.9	1.9	3.6	3.3	3.7
<u>Single-Yarn Strength Test:</u>									
Tenacity (g/tex)	14.03	13.03	11.95	14.78	12.94	12.24	14.97	14.15	13.35
Mean Strength (g)	806	348	236	873	350	244	548	383	260
CV% of Break	6.1	7.2	8.8	5.7	7.9	8.0	9.0	11.1	12.8
Elongation (%)	7.40	6.58	6.82	7.88	6.87	6.40	7.38	6.33	5.65
CV% of Elongation	8.6	7.3	8.9	5.1	6.6	7.0	6.8	10.9	11.5
Specific Work of Rupture (g/tex)	0.588	0.481	0.396	0.651	0.490	0.426	0.559	0.473	0.399
CV% of Work of Rupture	11.6	13.4	16.2	9.7	13.3	14.2	12.9	18.5	20.9
Initial Modulus (g/tex)	268	273	288	218	208	234	182	248	276
<u>USTER Evenness Test:</u>									
Non-Uniformity (CV%)	13.16	14.55	16.53	11.75	13.38	15.30	18.96	20.74	24.42
Thin Places/1,000 yds	0	18	83	0	3	34	211	404	1085
Thick Places/1,000 yds	54	88	224	16	30	96	513	931	1940
Neps/1,000 yds	42	163	741	24	45	458	88	188	778
ASTM Yarn Grade	A	C+	B	A	B	B	C	C	C

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	26.0 g/tex	1/8" Gauge Strength	30 g/tex	1/8" Gauge Strength	27.8 g/tex
Elongation	8.25 %	Elongation	8.6 %	Elongation	7.2 %
2.5% Span Length	1.04 in.	Length	1.03 in.	Length	1.05 in.
Uniformity Ratio	45.2 %	Uniformity Ratio	82 %	Uniformity Ratio	83 %
Short Fiber Content	6.20 %	Micronaire Value	4.1 %	Micronaire Value	4.1 %
Micronaire Value	4.07 %	Reflectance	71 %	Reflectance	73.7 %
Pressley Strength	86 Mpsi	Yellowness	8.0 %	Yellowness	8.6 %
Shirley Non-lint Content	4.72 %	Index of -Color	41 - Leaf	Index of: -Color	41 - Leaf
IIC/Shirley F/MT III	Micronaire: 4.1	Fineness:	172 mtex	Percent Mature Fibers:	78.0
Peyer Textlab AL-101	Upper Quartile Length: 0.96 in	Mean Length:	0.77 in	CV% of Mean:	33.5
				Percent Short Fibers:	17.9

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlafhorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
Nominal Twist Multiplier (α _e)									
<u>Skein Test:</u>									
Yarn Number (Ne)	9.99	22.18	30.45	10.08	22.06	29.96	16.12	21.05	30.21
CV% of Yarn Number	0.6	0.6	0.6	0.5	0.9	0.8	0.7	1.2	1.2
Count-Strength-Product	2340	1960	1804	2454	1964	1797	2267	2086	2015
CV% of CSP	1.4	3.0	2.3	2.0	2.4	2.3	2.2	3.5	2.3
<u>Single-Yarn Strength Test:</u>									
Tenacity (g/tex)	13.93	12.61	11.64	14.28	12.15	11.54	14.63	14.19	12.93
Mean Strength (g)	823	336	226	836	225	228	536	398	253
CV% of Break	6.5	7.5	8.8	6.4	8.6	9.0	10.4	10.0	11.2
Elongation (%)	7.58	6.53	5.99	7.80	6.74	6.16	7.41	6.76	5.84
CV% of Elongation	7.7	8.1	8.6	6.0	7.9	8.7	8.5	11.2	11.5
Specific Work of Rupture (g/tex)	0.609	0.462	0.390	0.627	0.450	0.390	0.561	0.510	0.407
CV% of Work of Rupture	12.4	14.1	16.7	11.1	15.2	16.6	16.5	17.9	19.1
Initial Modulus (g/tex)	270	283	284	203	213	228	193	238	272
<u>Uster Evenness Test:</u>									
Non-Uniformity (CV%)	13.17	15.09	17.51	13.44	14.37	16.74	18.17	19.59	23.26
Thin Places/1,000 yds	2	30	18	1	18	129	136	272	858
Thick Places/1,000 yds	50	92	29	103	48	216	422	712	1645
Neps/1,000 yds	48	117	80	124	72	698	82	158	592
ASTM Yarn Grade	B+	B	B	B+	B	B	C+	C	C

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	22.9 g/tex	1/8" Gauge Strength	26	1/8" Gauge Strength	29.4
Elongation	6.58 %	Elongation	7.2	Elongation	6.4
2.5% Span Length	0.98 in.	Length	0.96	Length	0.96
Uniformity Ratio	43.8 %	Uniformity Ratio	79	Uniformity Ratio	79.4
Short Fiber Content	9.32 %	Micronaire Value	3.0	Micronaire Value	3.1
Micronaire Value	3.00 %	Reflectance	75	Reflectance	77.3
Pressley Strength	83 Mpsi	Yellowness	8.4	Yellowness	8.3
Shirley Non-lint Content	4.70 %	Index of	- Color 31 - Leaf 3	Index of	- Color 31 - Leaf 6
IIC/Shirley F/MT III	Micronaire: 3.1	Fineness:	144 mtex	Percent Mature Fibers:	63.0
Peyer Textlab AL-101	Upper Quartile Length: 0.94 in	Mean Length:	0.76 in	CV% of Mean:	33.4
				Percent Short Fibers:	18.5

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlathorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
Nominal Twist Multiplier (α_e)									
<u>Skein Test:</u>									
Yarn Number (Ne)	10.07	22.20	30.16	10.05	21.82	29.90	16.81	20.99	28.71
CV% of Yarn Number	0.6	1.0	0.9	0.5	0.6	0.8	1.1	0.9	1.2
Count-Strength-Product	2104	1755	1613	2180	1754	1672	1778	1699	1534
CV% of CSP	1.6	1.8	2.0	1.9	2.9	1.8	5.2	2.3	4.2
<u>Single-Yarn Strength Test:</u>									
Tenacity (g/tex)	12.24	11.10	10.57	12.76	11.15	10.61	12.02	12.17	11.03
Mean Strength (g)	718	295	207	750	202	210	422	342	227
CV% of Break	6.9	8.6	8.9	7.0	8.9	8.1	13.0	13.8	13.4
Elongation (%)	6.78	5.95	5.43	7.19	6.19	5.82	6.32	6.14	4.97
CV% of Elongation	6.9	7.8	10.7	5.9	7.7	7.4	11.2	10.7	15.0
Specific Work of Rupture (g/tex)	0.490	0.373	0.325	0.529	0.384	0.344	0.404	0.396	0.300
CV% of Work of Rupture	11.8	14.8	18.0	11.2	14.6	14.8	20.4	20.8	24.6
Initial Modulus (g/tex)	141	269	298	235	194	225	186	205	284
<u>Uster Evenness Test:</u>									
Non-Uniformity (CV%)	13.47	14.98	17.33	12.69	14.21	15.95	22.40	23.90	27.57
Thin Places/1,000 yds	2	24	129	1	10	74	766	982	2198
Thick Places/1,000 yds	42	69	229	20	42	127	1096	1580	2617
Neps/1,000 yds	34	102	774	20	63	549	108	193	818
ASTM Yarn Grade	B	C+	B	A	B+	B	D	C	D

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	24.1 g/tex	1/8" Gauge Strength	28	1/8" Gauge Strength	26.0
Elongation	8.17 %	Elongation	8.8 %	Elongation	7.3 %
2.5% Span Length	1.07 in.	Length	1.05 in.	Length	1.05 in.
Uniformity Ratio	45.9 %	Uniformity Ratio	83 %	Uniformity Ratio	83.3 %
Short Fiber Content	5.00 %	Micronaire Value	4.0	Micronaire Value	4.0
Micronaire Value	3.97 %	Reflectance	61	Reflectance	64.1
Pressley Strength	79 Mpsi	Yellowness	11.8	Yellowness	11.4
Shirley Non-lint Content	4.07 %	Index of - Color	54	Index of: - Color	43
IIC/Shirley F/MT III	Micronaire: 4.0	Fineness:	165 mtex	Percent Mature Fibers:	79.0
Peyer Texlab AL-101	Upper Quartile Length: 0.98 in	Mean Length:	0.81 in	CV% of Mean:	29.1
				Percent Short Fibers:	11.2

YARN PROPERTIES

Spinning Machine:	Rieter m1/1				Schiafforst Autocoro				Saco Lowell SF-3H Ring			
	10/1	22/1	30/1	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yam Number (Ne)	10.06	22.32	30.37	10.10	21.99	30.08	10.10	21.99	30.08	16.14	22.62	29.83
Nominal Twist Multiplier (α_e)	4.85	4.81	4.78	4.78	4.79	4.79	4.78	4.79	4.79	4.0	4.0	4.0
<u>Skein Test:</u>												
Yam Number (Ne)	10.06	22.32	30.37	10.10	21.99	30.08	10.10	21.99	30.08	16.14	22.62	29.83
CV% of Yam Number	0.7	0.6	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.8	1.0	0.7
Count-Strength-Product	2252	1869	1763	2442	1944	1858	2442	1944	1858	2260	2068	2012
CV% of CSP	2.2	2.9	2.4	1.9	4.9	1.9	1.9	4.9	1.9	2.2	3.6	3.3
<u>Single-Yarn Strength Test:</u>												
Tenacity (g/tex)	13.20	11.81	11.22	13.92	12.08	11.20	13.92	12.08	11.20	14.58	13.71	13.08
Mean Strength (g)	776	313	218	814	324	220	814	324	220	534	358	259
CV% of Break	7.0	7.2	10.7	6.3	9.0	9.2	6.3	9.0	9.2	9.8	9.9	13.5
Elongation (%)	7.87	6.90	6.29	8.50	7.13	6.70	8.50	7.13	6.70	7.95	6.64	6.38
CV% of Elongation	7.6	8.1	11.0	5.8	7.8	7.4	5.8	7.8	7.4	7.7	12.1	14.5
Specific Work of Rupture (g/tex)	0.605	0.459	0.398	0.663	0.483	0.409	0.663	0.483	0.409	0.607	0.504	0.452
CV% of Work of Rupture	12.7	13.5	19.9	10.9	15.4	15.4	10.9	15.4	15.4	15.4	18.3	20.7
Initial Modulus (g/tex)	257	247	273	198	196	200	198	196	200	186	269	250
<u>Uster Evenness Test:</u>												
Non-Uniformity (CV%)	12.99	14.83	17.39	12.08	14.05	16.37	12.08	14.05	16.37	17.20	19.78	22.58
Thin Places/1,000 yds	3	25	166	1	16	114	1	16	114	93	324	652
Thick Places/1,000 yds	51	99	301	32	51	150	32	51	150	332	798	1469
Neps/1,000 yds	39	172	847	36	54	628	36	54	628	126	279	704
ASTM Yam Grade	A	B	B	A	B+	B	A	B+	B	C	C	C+

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI3000		HVI Data: Spinlab 900	
Stelometer Strength	23.6 g/tex	1/8" Gauge Strength	25 g/tex	1/8" Gauge Strength	31.4 g/tex
Elongation	6.08 %	Elongation	6.6 %	Elongation	5.6 %
2.5" Span Length	1.06 in.	Length	1.04 in.	Length	1.04 in.
Uniformity Ratio	41.6 %	Uniformity Ratio	79 %	Uniformity Ratio	79.5 %
Short Fiber Content	13.27 %	Micronaire Value	2.7	Micronaire Value	2.6
Micronaire Value	2.70 %	Reflectance	59	Reflectance	60.9
Pressley Strength	84 Mpsi	Yellowness	12.4	Yellowness	12.6
Shirley Non-lint Content	9.00 %	Index of	- Color 54 - Leaf 3	Index of:	- Color 44 - Leaf 7
ILC/Shirley F/MT III	Micronaire: 2.6	Fineness:	126 mtex	Percent Mature Fibers:	58.0
Peyer Textlab AL-101	Upper Quartile Length: 1.01 in	Mean Length:	0.80 in	CV% of Mean:	36.5
				Percent Short Fibers:	18.9

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlathorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
Nominal Twist Multiplier (α _e)									
<u>Skein Test:</u>									
Yarn Number (Ne)	10.17	21.79	29.95	9.98	22.03	30.41	15.87	21.85	29.65
CV% of Yarn Number	0.7	0.6	0.7	0.2	0.7	0.8	0.7	1.6	0.8
Count-Strength-Product	2215	1925	1836	2414	1952	1805	2098	1914	1838
CV% of CSP	1.5	2.2	3.2	1.8	3.7	4.1	3.9	2.4	2.4
<u>Single-Yarn Strength Test:</u>									
Tenacity (g/tex)	13.35	12.06	11.34	13.78	12.56	11.24	13.74	13.47	12.37
Mean Strength (g)	775	330	224	816	337	218	511	364	246
CV% of Break	6.2	9.8	8.9	6.9	7.2	9.9	10.8	10.9	10.0
Elongation (%)	7.37	6.22	5.82	7.83	6.88	6.23	7.22	6.26	5.70
CV% of Elongation	7.0	11.2	10.0	5.9	6.7	8.5	8.1	12.3	11.3
Specific Work of Rupture (g/tex)	0.571	0.433	0.366	0.606	0.476	0.382	0.507	0.452	0.374
CV% of Work of Rupture	11.7	17.8	17.3	11.3	13.2	18.1	16.9	19.0	18.5
Initial Modulus (g/tex)	265	286	292	206	210	221	179	257	262
<u>Uster Evenness Test:</u>									
Non-Uniformity (CV%)	13.38	14.35	16.25	11.72	13.39	15.29	20.33	23.18	26.29
Thin Places/1,000 yds	1	5	57	0	6	37	342	807	1721
Thick Places/1,000 yds	72	94	229	14	28	102	790	1526	2522
Neps/1,000 yds	101	246	1040	16	57	571	205	503	1751
ASTM Yarn Grade	B	B	B	A	B+	B+	D	C	D

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	21.5 g/tex	1/8" Gauge Strength	23 g/tex	1/8" Gauge Strength	29.0 g/tex
Elongation	7.58 %	Elongation	8.2 %	Elongation	6.6 %
2.5% Span Length	0.99 in.	Length	0.99 in.	Length	0.99 in.
Uniformity Ratio	42.7 %	Uniformity Ratio	78 %	Uniformity Ratio	78.6 %
Short Fiber Content	11.52 %	Micronaire Value	2.8	Micronaire Value	2.7
Micronaire Value	2.73 %	Reflectance	71	Reflectance	71.8
Pressley Strength	73 Mpsi	Yellowness	9.8	Yellowness	9.8
Shirley Non-lint Content	5.55 %	Index of - Color	42	Index of: - Color	32
IIC/Shirley F/MT III	Micronaire: 2.7	Fineness:	128 mtex	Percent Mature Fibers:	60.0
Peyer Texlab AL-101	Upper Quartile Length: 0.93 in	Mean Length:	0.72 in	CV% of Mean:	38.7
				Percent Short Fibers:	25.8

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlafhorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
Nominal Twist Multiplier (α _e)									
<u>Skein Test:</u>									
Yarn Number (Ne)	10.03	22.17	30.15	10.03	21.96	30.17	16.40	21.58	30.92
CV% of Yarn Number	0.5	0.7	1.0	0.5	0.6	0.6	1.2	1.2	1.7
Count-Strength-Product	1893	1628	1530	2113	1714	1588	1732	1549	1416
CV% of CSP	3.4	1.5	2.9	1.8	3.3	4.4	2.8	3.8	4.5
<u>Single-Yarn Strength Test:</u>									
Tenacity (g/tex)	11.24	10.46	10.18	12.13	10.71	10.09	11.47	11.03	10.13
Mean Strength (g)	662	279	200	715	288	198	413	302	193
CV% of Break	7.5	8.0	9.9	5.9	9.8	10.3	11.5	14.0	13.0
Elongation (%)	7.64	6.99	6.45	8.73	7.41	6.77	7.71	6.71	5.91
CV% of Elongation	9.9	11.5	11.4	5.7	8.2	10.0	9.5	15.4	13.7
Specific Work of Rupture (g/tex)	0.527	0.433	0.382	0.623	0.464	0.393	0.483	0.415	0.339
CV% of Work of Rupture	14.2	17.7	18.8	10.6	17.2	19.1	18.2	24.8	22.5
Initial Modulus (g/tex)	226	242	255	197	179	205	171	210	244
<u>Uster Evenness Test:</u>									
Non-Uniformity (CV%)	13.85	15.08	17.08	12.61	13.93	16.07	22.05	24.07	28.14
Thin Places/1,000 yds	3	19	102	0	12	76	654	1116	2535
Thick Places/1,000 yds	72	102	254	18	34	116	989	1672	2839
Neps/1,000 yds	60	182	959	13	54	531	134	296	1167
ASTM Yarn Grade	B	B	B	A	B+	B	D	C	BG

TABLE XV LOT NUMBER 2284 VARIETY Paymaster HS-26 GIN POINT/AREA Ellio1/Altus, OK

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	27.4	1/8" Gauge Strength	28	1/8" Gauge Strength	27.8
Elongation	5.42	Elongation	6.4	Elongation	6.4
2.5% Span Length	1.07	Length	1.06	Length	1.04
Uniformity Ratio	46.1	Uniformity Ratio	80	Uniformity Ratio	81.6
Short Fiber Content	5.57	Micronaire Value	4.2	Micronaire Value	4.1
Micronaire Value	4.17	Reflectance	76	Reflectance	77.8
Pressley Strength	98	Yellowness	8.8	Yellowness	8.5
Shirley Non-lint Content	2.38	Index of -Color	31	Index of: -Color	31
IIIC/Shirley F/MT III	Micronaire: 4.1	Fineness:	172 mtex	Percent Mature Fibers:	80.0
Peyer Texlab AL-101	Upper Quartile Length: 0.99 in	Mean Length:	0.80 in	CV% of Mean:	33.6
				Percent Short Fibers:	17.3

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlafhorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Twist Multiplier (αe)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
Skein Test:									
Yarn Number (Ne)	10.02	22.29	30.27	9.99	22.16	29.97	16.07	21.89	30.00
CV% of Yarn Number	0.9	0.7	0.7	0.3	0.7	0.6	1.0	1.2	1.7
Count-Strength-Product	2378	1993	1893	2501	2085	1970	2324	2144	2095
CV% of CSP	3.3	2.9	2.1	2.1	3.1	2.0	5.3	4.8	5.0
Single-Yarn Strength Test:									
Tenacity (g/tex)	14.20	12.77	12.70	14.61	13.21	12.37	15.33	15.09	14.39
Mean Strength (g)	837	338	248	864	352	244	564	407	283
CV% of Break	11.5	7.6	8.2	6.3	7.7	9.1	10.3	10.0	11.9
Elongation (%)	6.08	5.37	5.00	6.48	5.75	5.38	6.21	5.75	5.08
CV% of Elongation	13.2	8.6	7.5	6.0	6.6	7.3	9.1	10.3	12.3
Specific Work of Rupture (g/tex)	0.488	0.369	0.344	0.522	0.405	0.351	0.471	0.439	0.368
CV% of Work of Rupture	15.8	14.1	13.9	11.4	12.6	14.9	16.5	16.4	21.4
Initial Modulus (g/tex)	272	306	308	219	229	242	208	265	279
Uster Evenness Test:									
Non-Uniformity (CV%)	13.36	15.10	17.97	12.73	14.26	16.68	18.05	20.35	23.33
Thin Places/1,000 yds	0	34	199	1	18	123	134	318	826
Thick Places/1,000 yds	65	130	372	55	70	215	436	936	1649
Neps/1,000 yds	68	224	1089	71	92	759	152	296	784
ASTM Yarn Grade	A	C+	B	B+	B	B	C	C	D+

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI 3000		HVI Data: Spinlab 900	
Stelometer Strength	26.1 g/tex	1/8" Gauge Strength	28 g/tex	1/8" Gauge Strength	26.3 g/tex
Elongation	8.00 %	Elongation	8.2 %	Elongation	7.9 %
2.5% Span Length	1.07 in.	Length	1.06 in.	Length	1.06 in.
Uniformity Ratio	47.0 %	Uniformity Ratio	85 %	Uniformity Ratio	84.2 %
Short Fiber Content	4.87 %	Micronaire Value	4.3 %	Micronaire Value	4.2 %
Micronaire Value	4.20 %	Reflectance	66	Reflectance	67.6
Pressley Strength	84 Mpsi	Yellowness	10.2	Yellowness	10.3
Shirley Non-lint Content	4.45 %	Index of - Color	43	Index of: - Color	43
ILC/Shirley F/MT III	Micronaire: 4.2	Fineness:	174 mtex	Index of: - Leaf	2
Peyer Textlab AL-101	Upper Quartile Length: 1.01 in	Mean Length:	0.83 in	Percent Mature Fibers:	80.0
		CV% of Mean:	29.9	Percent Short Fibers:	12.4

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlafhorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
Nominal Twist Multiplier (αe)									
Skein Test:									
Yarn Number (Ne)	9.97	22.15	30.42	10.02	22.07	29.89	15.72	21.51	30.23
CV% of Yarn Number	0.6	0.9	0.8	0.6	0.5	0.9	0.6	1.0	0.8
Count-Strength-Product	2394	1972	1906	2519	2051	1878	2401	2297	2170
CV% of CSP	2.9	2.2	2.7	1.4	1.0	4.5	2.1	3.1	2.3
Single-Yarn Strength Test:									
Tenacity (g/tex)	13.80	12.82	12.17	14.21	12.68	11.90	15.56	14.60	13.79
Mean Strength (g)	818	342	236	837	339	235	584	401	269
CV% of Break	6.2	8.7	10.6	5.4	8.0	9.3	9.0	9.6	10.5
Elongation (%)	7.56	6.64	6.18	7.79	6.91	6.44	7.74	6.77	6.19
CV% of Elongation	7.4	9.0	10.7	6.3	7.3	8.3	7.9	10.4	9.8
Specific Work of Rupture (g/tex)	0.601	0.477	0.424	0.625	0.489	0.419	0.618	0.527	0.450
CV% of Work of Rupture	11.9	15.9	19.2	10.8	14.1	15.8	14.7	16.6	17.7
Initial Modulus (g/tex)	257	248	296	212	234	239	200	282	262
Uster Evenness Test:									
Non-Uniformity (CV%)	13.32	15.40	17.74	13.52	14.52	16.63	16.47	18.54	21.78
Thin Places/1,000 yds	2	38	189	2	21	136	41	152	511
Thick Places/1,000 yds	78	152	369	122	75	209	262	636	1313
Neps/1,000 yds	79	242	1018	144	106	634	171	336	780
ASTM Yarn Grade	B+	C	C+	B+	B	B	B	B	C

TABLE XVII LOT NUMBER 2286 VARIETY Paymaster HS-26 GIN POINT/AREA Snyder/Abilene

FIBER PROPERTIES

Individual Instrument Data		HVI Data: MCI3000		HVI Data: Spinlab 900	
Stelometer Strength	24.8	1/8" Gauge Strength	28	1/8" Gauge Strength	30.0
Elongation	7.08	Elongation	7.0	Elongation	6.5
2.5% Span Length	1.06	Length	1.02	Length	1.01
Uniformity Ratio	44.5	Uniformity Ratio	81	Uniformity Ratio	80.2
Short Fiber Content	8.20	Micronaire Value	3.4	Micronaire Value	3.4
Micronaire Value	3.30	Reflectance	71	Reflectance	71.7
Pressley Strength	86	Yellowness	8.8	Yellowness	8.8
Shirley Non-lint Content	3.12	Index of	- Color 41	Index of:	- Color 41
IIc/Shirley F/MT III	Micronaire: 3.4	Fineness:	128 mtex	Percent Mature Fibers:	84.0
Peyer Textlab AL-101	Upper Quartile Length: 0.98 in	Mean Length:	0.78 in	CV% of Mean:	34.8
				Percent Short Fibers:	19.0

YARN PROPERTIES

Spinning Machine:	Rieter m1/1			Schlafhorst Autocoro			Saco Lowell SF-3H Ring		
	10/1	22/1	30/1	10/1	22/1	30/1	16/1	22/1	30/1
Nominal Yarn Number (Ne)	10.15	22.38	29.99	10.05	22.08	29.93	15.45	22.11	28.26
Nominal Twist Multiplier (α _e)	4.85	4.81	4.78	4.78	4.79	4.79	4.0	4.0	4.0
<u>Skein Test:</u>									
Yarn Number (Ne)	10.15	22.38	29.99	10.05	22.08	29.93	15.45	22.11	28.26
CV% of Yarn Number	0.6	0.7	0.6	0.5	0.6	0.7	1.0	1.4	1.4
Count-Strength-Product	2372	1996	1911	2446	2006	1851	2450	2242	2137
CV% of CSP	2.4	1.9	3.2	2.1	2.7	2.1	1.0	4.3	2.3
<u>Single-Yarn Strength Test:</u>									
Tenacity (g/tex)	13.70	12.87	7.24	14.11	12.10	11.60	15.33	14.36	14.13
Mean Strength (g)	797	340	242	830	331	229	586	384	295
CV% of Break	6.2	7.3	8.1	5.6	6.8	9.3	10.0	10.7	11.0
Elongation (%)	6.91	6.27	5.78	7.50	6.35	5.88	6.68	6.01	5.95
CV% of Elongation	7.2	8.1	8.7	4.9	7.4	8.4	10.8	9.5	9.6
Specific Work of Rupture (g/tex)	0.549	0.452	0.241	0.601	0.437	0.376	0.542	0.468	0.442
CV% of Work of Rupture	11.7	13.7	15.0	9.8	12.9	15.7	16.9	17.1	18.3
Initial Modulus (g/tex)	300	266	172	228	242	248	259	290	317
<u>Uster Evenness Test:</u>									
Non-Uniformity (CV%)	12.62	14.42	16.40	12.46	13.84	15.88	17.31	19.54	22.21
Thin Places/1,000 yds	2	22	72	0	11	65	102	253	646
Thick Places/1,000 yds	40	79	196	69	40	149	276	727	1382
Neps/1,000 yds	16	86	413	77	54	607	26	70	327
ASTM Yarn Grade	A	B	B	A	B	B	B	C+	C

