| | NYLON | | 'TERYLENE' 'DACRON' | | 'ORLON' | 'DYNEL' | 'RHOVYL' 'FIBRAVYL' | 'SARAN' 'VELON' | 'VINYLON' |
|---|---|---|---|---|---|---|---|---|---|
| FIBRE TYPE | POLYAMIDE | | POLYESTER | | POLYVINYL (ACRYLIC) | POLYVINYL (ACRYLIC) | POLYVINYL (NON-ACRYL.) | POLYVINYL (NON-ACRYL.) | POLYVINYL (NON-ACRYL.) |
| PRODUCED AS | CF, STAPLE MON.& TOW | | CF, STAPLE AND TOW | | CF, STAPLE AND TOW | STAPLE AND TOW | CF. AND STAPLE | CF, STAPLE MON.& TOW | STAPLE |
| SPINNING METHOD | MELT | | MELT | | WET OR DRY | DRY | DRY | MELT OR DRY | WET OR DRY |
| TENACITY (DRY) ※ (grams/denier) | 4.5/5.5 | 7.0/8.0 | 4.5/5.5 | 6.9/7.0 | 4.7-5.2 ST. 1.5-2.3 | 3.0 - 3.8 | 2.6 - 3.5 | 1.4 - 2.3 | 2.0 - 6.0 |
| ELONGATION % (at break) | 20/30 | 15/19 | 23/30 | 7/12 | 15 - 17 ST. 26-35 | 30 - 45 | 10 - 15 | 20 - 30 | 15 - 30 |
| FIBRE DENSITY | 1.14 | | 1.38 | | 1.17 ST. 1.14 | 1.28 | 1.40 | c. 1.70 | 1.30 |
| MOISTURE REGAIN % (at 65% R.H.) | 4.0 | | 0.4 | | 1 - 2 | 0.4 | <0.1 | NONE | 5 |
| MOISTURE REGAIN % (at 95% R.H.) | 7.0 | | 0.7 | | 3 - 5 | 1.0 | <0.5 | <0.05 | 10 |
| SOFTENING POINT °F. | c. 480° | | c. 480° | | BURNS | 240° - 300° | 200° - 300° | 240° - 300° | c. 400° |
| STICKING TEMP. °F. (Ironing) | c. 450° | | c. 450° | | c. 450° | ? | ? | ? | ? |
| CROSS SECTION | CIRCULAR | | CIRCULAR | | DOGBONE | DOGBONE | BEANSHAPE | CIRCULAR | DOGBONE |
| RESISTANCE TO LIGHT DEGRADATION | MODERATE TO POOR (depends on dullness) | | GOOD TO POOR (depends on dullness) | | EXCELLENT | VERY GOOD | GOOD | EXCELLENT | GOOD |
| ACID RESISTANCE | MODERATE | | EXCELLENT | | EXCELLENT | EXCELLENT | EXCELLENT | EXCELLENT | GOOD |
| ALKALI RESISTANCE | EXCELLENT | | MODERATE | | MODERATE | EXCELLENT | EXCELLENT | VERY GOOD | VERY GOOD |
| ABRASION RESISTANCE | EXCELLENT | | GOOD | | MODERATE | MODERATE | MODERATE | VERY GOOD | MODERATE |
| DYEABILITY | GOOD | | POOR (by normal methods) | | POOR (by normal methods) | GOOD | MODERATE | POOR | GOOD |
| WORLD FIBRE ※ PRODUCTION. MIL.LB.P.A. | 230 | | 26 | | 25 | 6 | 5 | 30 | 9 |
| U.K. FIBRE ※ PRODUCTION. MIL.LB.P.A. | 11 | | 1 | | NONE | NONE | NONE | NONE | NONE |
| U.S.A. FIBRE ※ PRODUCTION. MIL.LB.P.A. | 200 | | 25 | | 25 | 6 | NONE | 25 | NONE |
| PRICE PER LB. APRIL 1957 PENCE STERLING (DEN./ FILS.) | STAPLE 135 (60/20) 179 | | STAPLE 180 (75/36) 219 | | STAPLE 163 (75/30) 322 | 110 | STAPLE 101 (120/36) 157 | STAPLE 79 | 80 |
| MAIN PRODUCERS | B.N.S. (UK) DuPONT (USA) | | I.C.I. (UK) DuPONT (USA) | | DU PONT (U.S.A.) | CARBIDE & CARBON (USA) | SOC. RHOVYL (FRANCE) | DOW AND SARAN (USA) | KURASHIKI (JAPAN) |

| | 'COURLENE' 'POLYTHENE | 'FIBREGLASS' | 'VICARA' | 'ARDIL' | VISCOSE (Normal) | ACETATE (Normal) | CUPR-AMMONIUM |
|---|---|---|---|---|---|---|---|
| FIBRE TYPE | POLY-ETHYLENE | MINERAL | PROTEIN (MAIZE) | PROTEIN (PEANUT) | RAYON | RAYON | RAYON |
| PRODUCED AS | MONOFIL | CF. AND STAPLE | STAPLE AND TOW | STAPLE | CF, STAPLE MON.& TOW | CF, STAPLE MON. & TOW | CF. AND STAPLE |
| SPINNING METHOD | MELT OR DRY | MELT | WET | WET | WET | DRY | WET |
| TENACITY (DRY) ※ (grams/denier) | 1.0 - 2.5 | 6.3 - 6.9 | 1.0 - 1.2 | 0.7 - 1.0 | 1.5 - 2.4 | 1.3 - 1.5 | 1.7 - 2.3 |
| ELONGATION % (at break) | 20 - 80 | 2 - 4 | 35 - 45 | 30 - 60 | 15 - 30 | 23 - 30 | 10 - 17 |
| FIBRE DENSITY | 0.92 | 2.54 | 1.25 | 1.3 | 1.5 | 1.32 | 1.52 |
| MOISTURE REGAIN % (at 65% R.H.) | NONE | NONE | 12 | 13 | 13 | 6 | 12.5 |
| MOISTURE REGAIN % (at 95% R.H.) | <0.01 | <0.1 | 25 - 30 | 29 | 27 | 14 | 27 |
| SOFTENING POINT °F. | 220° - 240° | c. 1500° | BURNS | BURNS | BURNS | c. 400° | BURNS |
| STICKING TEMP. °F. (Ironing) | ? | ? | c. 450° | - | - | 350° - 375° | - |
| CROSS SECTION | CIRCULAR | CIRCULAR | NEARLY CIRCULAR | NEARLY CIRCULAR | SERRATED | SERRATED | NEARLY CIRCULAR |
| RESISTANCE TO LIGHT DEGRADATION | EXCELLENT | EXCELLENT | GOOD | GOOD | GOOD TO POOR (depends on dullness) | GOOD TO POOR (depends on dullness) | GOOD |
| ACID RESISTANCE | EXCELLENT | EXCELLENT | GOOD | MODERATE | MODERATE | MODERATE | MODERATE |
| ALKALI RESISTANCE | EXCELLENT | MODERATE | MODERATE | POOR | MODERATE | MODERATE | MODERATE |
| ABRASION RESISTANCE | GOOD | BAD | POOR | POOR | POOR | POOR | POOR |
| DYEABILITY | Impossible except melt colour | Impossible except when coated | GOOD | GOOD | GOOD | MODERATE | GOOD |
| WORLD FIBRE ※ PRODUCTION. MIL.LB.P.A. | ¼ | 35 | 20 | 4 | 2850 | 550 | Included in Viscose |
| U.K. FIBRE ※ PRODUCTION. MIL.LB.P.A. | 2 | 4 | NONE | 4 | 179 | 38 | 10 |
| U.S.A. FIBRE ※ PRODUCTION. MIL.LB.P.A. | ¼ | 25 | 20 | NONE | 394 | 329 | Included in Viscose |
| PRICE PER LB. APRIL 1953 (DEN./FILS.) PENCE STERLING | ? | STAPLE 72 (900/1/0) 149 | 86 | 50 | STAPLE 27 (75/18) 70 | STAPLE 41 (75/19) 70 | (60/45) 91 |
| MAIN PRODUCERS | COURTAULDS (U.K.) A.V.C. (USA) | FIBERGLASS (UK) O. CORNING (USA) | VIRGINIA CAROLINA CORP. (USA) | I.C.I. (U.K.) | MANY FIRMS | MANY FIRMS | BEMBERG (UK & USA) |

| | 'FORTISAN' | 'TENASCO' | COTTON | WOOL | FLAX | SILK | JUTE |
|---|---|---|---|---|---|---|---|
| FIBRE TYPE | RAYON | RAYON | NATURAL | NATURAL | NATURAL | NATURAL | NATURAL |
| PRODUCED AS | C.F. | C.F. | STAPLE | STAPLE | STAPLE | CF. AND STAPLE | STAPLE |
| SPINNING METHOD | DRY (Saponified) | WET | - | - | - | - | - |
| TENACITY (DRY) ※ (grams/denier) | 4.5 - 7.0 | 3.0 - 4.0 | 3.0 - 6.0 | 1.0 - 1.7 | 5.0 - 6.0 | 3.5 - 4.5 | 6.0 - 7.0 |
| ELONGATION % (at break) | 6.0 - 6.5 | 9 - 17 | 3 - 8 | 25 - 35 | 2 - 4 | 20 - 25 | 2.5 - 3.0 |
| FIBRE DENSITY | 1.5 | 1.5 | 1.52 | 1.32 | 1.48 | 1.35 | 1.5 |
| MOISTURE REGAIN % (at 65% R.H.) | 10 | 13 | 7 | 15 | 8 | 11 | 13 |
| MOISTURE REGAIN % (at 95% R.H.) | 22 | 20 | 18 | 27 | 18 | 30 | 29 |
| SOFTENING POINT °F. | BURNS | BURNS | BURNS | BURNS | BURNS | BURNS | BURNS |
| STICKING TEMP. °F. (Ironing) | - | - | - | - | - | - | - |
| CROSS SECTION | SLIGHTLY SERRATED | SERRATED | BEANSHAPE TO CIRCULAR | NEARLY CIRCULAR | POLYGONAL (in groups) | TRIANGULAR TO RIBBONLIKE | POLYGONAL (in groups) |
| RESISTANCE TO LIGHT DEGRADATION | GOOD | GOOD | GOOD | GOOD | GOOD | MODERATE | POOR |
| ACID RESISTANCE | MODERATE | MODERATE | MODERATE | GOOD | MODERATE | POOR | MODERATE |
| ALKALI RESISTANCE | MODERATE | MODERATE | GOOD | POOR | GOOD | MODERATE | POOR |
| ABRASION RESISTANCE | BAD | POOR | MODERATE | MODERATE | MODERATE | POOR | POOR |
| DYEABILITY | MODERATE | MODERATE | EXCELLENT | EXCELLENT | GOOD | EXCELLENT | POOR |
| WORLD FIBRE ※ PRODUCTION. MIL.LB.P.A. | Included in Viscose and Acetate | | 16595 | 2290 (clean) | 1913 (scutched) | 43 | 4489 |
| U.K. FIBRE ※ PRODUCTION. MIL.LB.P.A. | 1 | 44 | 841 | 397 | 105 | 1.2 | 403 |
| U.S.A. FIBRE ※ PRODUCTION. MIL.LB.P.A. | HIGH TENACITY 413 | | 4407 | 494 | 14 | 6 | ? |
| PRICE PER LB. APRIL 1957 (DEN./FILS.) PENCE STERLING | (1100) 156 (60/147)264 | (1180) 49 (100/40) 80 | 32 (Amer.Midd) | 159 (64's tops) | 284 (Grade DD) | 466 (20/22-90%) | 9 G. Daisee |
| MAIN PRODUCERS | CELANESE (UK & USA) | COURTAULDS (UK) A.V.C.(USA) | - | - | - | - | - |

## NOTES ON THE TABLE

※ THE TENACITY FIGURE QUOTED FOR STAPLE FIBRES REFERS TO SINGLE FILAMENT TENACITY. STAPLE SPUN YARN TENACITY USUALLY RANGES BETWEEN 30% AND 60% OF THE SINGLE FILAMENT TENACITY.

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※ THE FIGURES REFER TO:-

1953 PRODUCTION OF SYNTHETIC FIBRES (PLANNED)
1952 PRODUCTION OF RAYON FIBRES
1951 CONSUMPTION OF NATURAL FIBRES.

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✖ THE C.F. YARN PRICES QUOTED ARE FOR THE NEAREST YARN DENIER TO 70 IN PRODUCTION. WHERE THE FIBRE IS PRODUCED BOTH IN THE U.K. AND ELSEWHERE, THE U.K. PRICE ONLY IS QUOTED.

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÷ THIS CONTINUOUS FILAMENT GLASS COUNT IS THE EQUIVALENT OF 50 DENIER.

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## ADDITIONAL INFORMATION

PERLON (OR NYLON '6') IS FAIRLY SIMILAR TO NYLON '66' IN PROPERTIES EXCEPT THAT THE SOFTENING POINT IS ABOUT 420°F.

THERE ARE MANY PROPRIETARY TRADE NAMES FOR NYLON '6' FIBRES, THE NAME PERLON BELONGS TO THE ASSOCIATED GROUP OF COMPANIES WHICH WAS PREVIOUSLY THE I.G. FARBENINDUSTRIE. OTHER TRADE NAMES IN USE ARE:-

| | | | |
|---|---|---|---|
| AMILAN | (JAPAN) | NAILON | (ITALY) |
| AUSTRYLON | (AUSTRIA) | NIPLON | (JAPAN) |
| EDLON | (SWITZERLAND) | PERILON | (GERMANY) |
| ENKALON | (HOLLAND) | POLAN | (POLAND) |
| GRILON | (SWITZERLAND) | SILON | (CZECHOSLOVAKIA) |
| KAPRON | (U.S.S.R.) | STEELON | (POLAND) |
| MIRLON | (SWITZERLAND) | | |

THE WORLD PRODUCTION FOR 1953 OF NYLON '6' AND NYLON '66' FIBRES IS ESTIMATED AT:-

| | |
|---|---|
| NYLON '6' | 35 M. LB. |
| NYLON '66' | 230 M. LB. |

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2. THE I.G. FARBEN ORIGINALLY USED THE FOLLOWING FIBRE NAMES:-

PERLON T FOR NYLON '66' FIBRES
PERLON L FOR NYLON '6' FIBRES
PERLON U FOR POLYURETHANE FIBRES

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3. RILSAN IS A POLYAMIDE FIBRE MADE FROM CASTOR OIL. IT IS PRODUCED BY ORGANICO CIE. IN FRANCE. THE SOFTENING POINT IS ABOUT 180°F.

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4. 'X.51' IS AN ACRYLIC TYPE OF POLYVINYL FIBRE MADE BY THE AMERICAN CYANAMID CO., IN BOTH STAPLE AND CONTINUOUS FILAMENT. IN MOST PROPERTIES IT IS SIMILAR TO ORLON AND ACRILAN. IT IS, HOWEVER, MORE READILY DYED.

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5. ACRILAN IS A STAPLE FIBRE SIMILAR TO ORLON IN MOST PHYSICAL PROPERTIES. IT IS, HOWEVER, EASIER TO DYE. IT IS MADE BY THE CHEMSTRAND CORPORATION. THE PLANNED OUTPUT FOR 1953 IS ABOUT 30 M. LB.

---

6. ACRYLIC POLYVINYL TYPE FIBRES ARE ALSO BEING MADE BY THE FOLLOWING FIRMS:-

| FIBRE NAME | PRODUCER | 1953 PRODUCTION |
|---|---|---|
| DOLAN | SUDDEUTSCHE ZELLWOLLE (GERMANY) | ? |
| FIBRE D | RHODIACETA (FRANCE) | ½ M. |
| PAN | CASSELLA FARBWERKE (GERMANY) | 2 M. |
| REDON | PHRIX WERKE (GERMANY) | 2 M. |

OTHER FIRMS ARE DEVELOPING ACRYLIC TYPE FIBRES.

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7. THERE ARE THREE OTHER POLYETHYLENE FIBRES SIMILAR TO COURLENE.

POLYTHENE MADE BY A.V.C. (U.S.A.)
REEVON MADE BY REEVES BROS. (U.S.A.)
WYNENE MADE BY NATIONAL PLASTICS PRODUCTS (U.S.A.)

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8. THERE ARE A NUMBER OF POLYVINYL (NON-ACRYLIC) TYPE FIBRES IN PRODUCTION, MOST OF WHICH ARE MADE FROM EITHER POLYVINYL CHLORIDE OR POLYVINYLIDENE CHLORIDE ETC. THEY ARE MAINLY MADE IN COARSE DENIER MONOFILAMENTS.

SOME FIBRE NAMES AND PRODUCERS ARE AS FOLLOWS:

| FIBRE NAME | PRODUCER |
|---|---|
| BEXAN | B.X. PLASTICS (U.K.) |
| GEON | GOODYEAR TIRE & RUBBER CO. (U.S.A.) |
| KUREHALON | KUREHA SPINNING CO. (JAPAN) |
| LUMITE | CHICOPEE MANUFACTURING CORP. (U.S.A.) |
| P.C.U. | BADISCHE ANILIN SODA FABRIK (GERMANY) |
| PERMALON | PIERCE PLASTICS (U.S.A.) |
| SARAN | SARAN YARNS CO. (U.S.A.) |
| VELON | FIRESTONE PLASTICS (U.S.A.) |
| VISKORD | VISKING CORPORATION (U.S.A.) |

THE TOTAL WORLD PRODUCTION IS ABOUT 30 M. LB. U.K. PRODUCTION ½ M. LB.

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9. THERE ARE A NUMBER OF PROTEIN TYPE FIBRES SUCH AS:-

| | |
|---|---|
| ARALAC | (U.S.A.) |
| CARGAN | (BELGIUM AND ITALY) |
| CASLEN | (U.S.A.) |
| CASOLANA | (HOLLAND) |
| FIBROLANE | (U.K.) |
| LACTOFIL | (HOLLAND) |
| LANITAL | (BELGIUM, ITALY AND POLAND) |
| MERINOVA | (ITALY) |
| THIOZELL | (GERMANY) |

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10. THERE ARE OTHER PROTEIN TYPE FIBRES MADE FROM THE FOLLOWING PROTEINS:-

| | | |
|---|---|---|
| ARDIL | (U.K.) | PEANUT ARACHIN |
| SARELON | (U.S.A.) | • • |
| SILKOOL | (JAPAN) | • • |
| SOYBEAN | (U.S.A.) | SOYABEAN |
| SOYLON | (U.S.A.) | • |

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FHC/MB 20.4.53.

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| ENKALON | (HOLLAND) | POLAN | (POLAND) |
| GRILON | (SWITZERLAND) | SILON | (CZECHOSLOVAKIA |
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