**BIP (Oldbury) Limited**
**A Member of the Tennant Group (Est. 1797)**

# Surkopak® & Surkofilm® Polyurethanes

# Surkopak®

Surkopak® plasticising polyurethane resins are intended for nitrocellulose based inks and coating systems. An extensive range of aromatic polyether based Surkopak® products is available in a choice of hardness and plasticising effects, which can be applied to both rigid and flexible substrates. The grades listed in this document represent the most commonly used products with a choice of non-volatile content, viscosity and solvent release characteristics. All conventional Surkopak® products are supplied as isocyanate-free liquids.

| Typical Properties | Viscosity at 25ºC (poise) | Non volatile (%) | Solvent Type | Flash point (°C) | Comments |
|---|---|---|---|---|---|
| Surkopak 2135 | 20 - 30 | 81 - 87 | Ethanol | +12 | Softest, highest plasticising grade, highly flexible, excellent solvent release. |
| Surkopak 5244 | 12 - 16 | 73 - 78 | Ethyl acetate (22%) Ethanol (3%) | -4 | General purpose grade for flexo and gravure inks for surface printing. |
| Surkopak 5241 | 500 - 900 | >97 | Ethyl acetate (<1%) Ethanol (<1%) | >62 | Solvent free version of Surkopak 5244 |
| Surkopak 2829 | 200 - 400 | >98 | Ethyl acetate (< 0.5%) | >62 | Harder version of Surkopak 5241 for surface printing and lamination. |
| Surkopak 5255 | 25 - 30 | 73 - 78 | Ethyl acetate (22%) Ethanol (3%) | -4 | Harder version of Surkopak 5244 for surface printing and lamination. |
| Surkopak 5323 | 5 - 15 | 74 - 76 | Ethyl acetate (18%) Isopropanol (7%) | -4 | Recommended grade for lamination, can also be used for surface printing. |
| Surkopak 5311 | 30 - 40 | 63 - 67 | Ethyl acetate (33%) Ethanol (2%) | -4 | Recommended for lamination. Harder, higher molecular weight grade than Surkopak 5323. |

## Properties Versus Isocyanate Content

| Surkopak® (SP) | MDI Content | Adhesion | Block Resistance | Flexibility | Alcohol Tolerance | Yellowing | Grease Resistance |
|---|---|---|---|---|---|---|---|
| SP 5323 | Higher | *** | *** | * | * | *** | *** |
| SP 5255 | Medium | ** | ** | ** | ** | ** | ** |
| SP 5244 | Low | * | * | *** | *** | * | * |
| SP 5246 | Low | * | * | *** | **** | * | * |
| SP 2135 | Lower | * | * | **** | **** | * | * |

Relative performance where * is lower and **** higher .

# Surkofilm®

Surkofilm® polymers contain both polyether and polyester, aliphatic and some aromatic based high molecular weight structures. Surkofilm® comprise a range of solvent based film forming urethanes, which can be used on a wide variety of substrates where a demanding performance calls for high quality inks. Surkofilm® polymers have been formulated to low non-volatile content for cost effectiveness. Special grades have been developed for substrates in combination with vinyl co-polymers. All Surkofilm® products are supplied as isocyanate-free liquids.

| Product | Viscosity at 25ºC (poise) | Solid Content (% w/w) | Solvents | Characteristics |
|---|---|---|---|---|
| Surkofilm MR132 | 17 -35 | 43 - 47 | Ethyl acetate (25%)<br>Ethanol (30%) | Semi-aliphatic polyurethane for medium bond strength lamination and surface printing. |
| Surkofilm 763 | 45 - 60 | 51.5 - 55.5 | Ethyl acetate (12%)<br>Ethanol (34%) | Similar to MR132 but higher solids content. Suggested product for PET substrates. |
| Surkofilm 653H | 20 - 28 | 41 - 45 | Ethyl acetate (42%)<br>Ethanol (15%) | Aliphatic polyurethane for medium bond strength lamination printing. |
| Surkofilm 67S | 15 - 25 | 48 - 52 | Ethyl acetate (18%)<br>Ethanol (32%) | Higher bond strength than 653H. Suggested aliphatic grade for PET and Nylon films. |
| Surkofilm 2771 | 18 - 34 | 43 - 47 | Ethyl acetate (27%)<br>Ethanol (27%) | Flexo and gravure lamination inks on PE, PET, Nylon and OPP in both nitrocellulose and nitrocellulose free formulations. |
| Surkofilm 64S | 13 – 18 | 38 - 42 | Ethyl acetate (48%)<br>Ethanol (12%) | Aliphatic polyurethane.<br>Improved printability version of 653H. |
| Surkofilm 62H | 20 - 30 | 20 -25 | Ethyl acetate (77%)<br>Ethanol (<1%) | Aliphatic polyurethane for high bond strength mono solvent lamination. |
| Surkofilm 72S | 20 - 30 | 25 - 30 | Ethyl acetate (41%)<br>Ethanol (31%) | Aliphatic polyurethane for medium bond strength lamination printing. |
| Surkofilm 71H | 20 - 30 | 25 - 30 | Ethyl acetate (40%)<br>Ethanol (32%) | Harder version of Surkofilm 72S. |
| Surkofilm 1137 | 120-350 | 48 - 54 | Ethyl acetate (32%)<br>Isopropanol (18%) | Lamination inks, mono-component or in combination with vinyl resins. |

BIP also manufacture bespoke products designed to meet the specific objectives of an individual customer. As many standard and development products are not listed please contact BIP direct.

In addition to solvent based film forming polymers, BIP manufacture a range of WATER BASED polyurethane dispersions under the Beetafin® trademark. Beetafin® polyurethane dispersions offer a water based alternative which enable the production of compliant coatings with excellent abrasion resistance and adhesion to many difficult surfaces. Please contact BIP for further details.

# Surkopak® & Surkofilm® Contact Information

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