

## **VIVAK® Sheet**

VIVAK® Sheet is a transparent thermoplastic sheet. In the point of purchase industry, VIVAK Sheet is the brand and market leader for all clear plastics. Among its advantages, VIVAK Sheet offers superior impact strength over acrylic and cost effectiveness compared to polycarbonate. VIVAK Sheet offers deep draws, complex die-cuts and precise molded-in details without sacrificing structural integrity. It die-cuts and punches easily and can be bonded or fastened with adhesives, ultrasonic welding or rivets. In addition, VIVAK Sheet is easily decorated by painting, silk screening, or hot stamping. Easy to fabricate, form, bond and decorate, VIVAK Sheet is well suited for a variety of point of purchase and sign applications.

## **APPLICATIONS**

Typical applications include video tape shelves, greeting card displays, revolving merchandise racks, indoor signs, point of purchase displays, menu displays, photo frames, and slat wall inventory displays.

| Property         VIVAK° Sheet         Units         Test Method           GENERAL<br>Specific Gravity<br>Water Absorption after 24 hrs.         1.27         -         ASTM D-792<br>ASTM D-570           MECHANICAL<br>Tensile Strength, Ultimate .125″         7,700         psi<br>ASTM D-638         ASTM D-638           Flexural Strength .125″         320,000         psi<br>ASTM D-790         ASTM D-790           Flexural Modulus .125″         11,200         psi<br>ASTM D-790         ASTM D-790           Izod Impact Notched .125″ at 73″         1.7         Ft-Ib/in<br>ASTM D-256         ASTM D-790           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in<br>ASTM D-256         ASTM D-792           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in<br>ASTM D-792         ASTM D-793           Rockwell Hardness         115         R Scale<br>ASTM D-785         ASTM D-785           Shear Strength         9,000         psi<br>ASTM D-792         ASTM D-792           Compressive Strength         8,000         psi<br>ASTM D-793         ASTM D-793           Compressive Strength         157         °F         ASTM D-648           Heat Deflection Temperature @ 264 psi<br>Heat Deflection Temperature @ 66 psi<br>Coefficient of Thermal Expansion         18         In/in/°Fx10°         ASTM D-648           Glass Transition Temperature   | Typical Physical Properties           |                                       |               |             |  |  |
|--|---------------------------------------|---------------------------------------|---------------|-------------|--|--|
| Specific Gravity   1.27  | Property                              | VIVAK® Sheet                          | <u>Units</u>  | Test Method |  |  |
| Water Absorption after 24 hrs.         0.2         %         ASTM D-570           MECHANICAL         Tensile Strength, Ultimate .125″         7,700         psi         ASTM D-638           Tensile Modulus .125″         320,000         psi         ASTM D-638           Flexural Strength .125″         11,200         psi         ASTM D-790           Izod Impact Notched .125″ at 73″         1.7         Ft-Ib/in         ASTM D-790           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in         ASTM D-256           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in         ASTM D-256           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in         ASTM D-256           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in         ASTM D-256           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in         ASTM D-256           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in         ASTM D-363           Rescale         ASTM D-38         ASTM D-378         ASTM D-363           Rescale         ASTM D-785         ASTM D-785         ASTM D-785           The Machine Impact Impac   |                                       | 1 27                                  |               | ASTM D 702  |  |  |
| Tensile Strength, Ultimate .125"         7,700         psi         ASTM D-638           Tensile Modulus .125"         320,000         psi         ASTM D-638           Flexural Strength .125"         11,200         psi         ASTM D-790           Flexural Modulus .125"         310,000         psi         ASTM D-790           Izod Impact Notched .125" at 73"         1.7         Ft-lb/in         ASTM D-256           Izod Impact Notched .125" at 32"         1.2         Ft-lb/in         ASTM D-256           Drop Dart Impact .250" at 73"         83         Ft-lb/in         ASTM D-3763           Rockwell Hardness         115         R Scale         ASTM D-3763           Rockwell Hardness         115         R Scale         ASTM D-785           Shear Strength         9,000         psi         ASTM D-785           Shear Strength         9,000         psi         ASTM D-790           THERMAL           Heat Deflection Temperature @ 66 psi         164         °F         ASTM D-648           Heat Deflection Temperature @ 66 psi         164         °F         ASTM D-696           Flammability ≥ .080"         HB         -         -           Glass Transition Temperature         178         °F         -  | , ,                                   |                                       | %             |             |  |  |
| Tensile Modulus .125″         320,000         psi         ASTM D-638           Flexural Strength .125″         11,200         psi         ASTM D-790           Flexural Modulus .125″         310,000         psi         ASTM D-790           Izod Impact Notched .125″ at 73″         1.7         Ft-Ib/in         ASTM D-256           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in         ASTM D-256           Izod Impact Notched .125″ at 73″         83         Ft-Ib/in         ASTM D-256           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in         ASTM D-256           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in         ASTM D-256           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in         ASTM D-256           Izod Impact Notched .125″ at 32″         1.2         Ft-Ib/in         ASTM D-3763           RSTM D-3763         RSTM D-3763         RSTM D-3763         RSTM D-732           Rockwell Hardness         115         R Scale         ASTM D-732           Shear Strength         9,000         psi         ASTM D-895           THERMAL           Heat Deflection Temperature @ 264 psi         164         °F         ASTM D-648           Coefficient of Thermal Expansion   |                                       |                                       |               |             |  |  |
| Flexural Strength .125"         11,200         psi         ASTM D-790           Flexural Modulus .125"         310,000         psi         ASTM D-790           Izod Impact Notched .125" at 73"         1.7         Ft-lb/in         ASTM D-256           Izod Impact Notched .125" at 32"         1.2         Ft-lb/in         ASTM D-256           Drop Dart Impact .250" at 73"         83         Ft-lbs         ASTM D-3763           Rockwell Hardness         115         R Scale         ASTM D-3763           Shear Strength         9,000         psi         ASTM D-785           Shear Strength         9,000         psi         ASTM D-785           Compressive Strength         8,000         psi         ASTM D-785           Heat Deflection Temperature @ 264 psi         157         °F         ASTM D-648           Heat Deflection Temperature @ 66 psi         164         °F         ASTM D-648           Coefficient of Thermal Expansion         3.8         In/in/°Fx10°         ASTM D-696           Flammability ≥ .080"         HB         -         UL 94           Glass Transition Temperature         178         °F         -           Forming Temperature         280-320         °F         -           OPTICAL   | <b>.</b> .                            | ,                                     | psi           |             |  |  |
| Flexural Modulus .125″         310,000         psi         ASTM D-790           Izod Impact Notched .125″ at 73″         1.7         Ft-lb/in         ASTM D-256           Izod Impact Notched .125″ at 32″         1.2         Ft-lb/in         ASTM D-256           Drop Dart Impact .250″ at 73″         83         Ft-lbs         ASTM D-3763           Rockwell Hardness         115         R Scale         ASTM D-785           Shear Strength         9,000         psi         ASTM D-732           Compressive Strength         8,000         psi         ASTM D-895           THERMAL           Heat Deflection Temperature @ 264 psi         164         °F         ASTM D-648           Heat Deflection Temperature @ 66 psi         164         °F         ASTM D-648           Coefficient of Thermal Expansion         3.8         In/in/°Fx10°         ASTM D-696           Flammability ≥ .080″         HB         -         UL 94           Glass Transition Temperature         178         °F         -           Forming Temperature         280-320         °F         -           OPTICAL           Light Transmission         86         %         ASTM D-1003           Refractive Index         1.57  |                                       |                                       |               |             |  |  |
| Izod Impact Notched .125" at 73"   1.7   Ft-Ib/in   ASTM D-256     Izod Impact Notched .125" at 32"   1.2   Ft-Ib/in   ASTM D-256     Izod Impact Notched .125" at 32"   1.2   Ft-Ib/in   ASTM D-256     Izod Impact Notched .125" at 32"   1.2   Ft-Ib/in   ASTM D-256     Izod Impact Notched .125" at 32"   1.2   Ft-Ib/in   ASTM D-256     Izod Impact Notched .125" at 32"   1.2   Ft-Ib/in   ASTM D-256     Izod Impact Notched .125" at 32"   1.2   Ft-Ib/in   ASTM D-256     Izod Impact Notched .125" at 32"   1.2   Ft-Ib/in   ASTM D-256     Izod Impact Notched .125" at 32"   1.2   Ft-Ib/in   ASTM D-3763     Izod Impact Notched .125" at 32"   1.2   Ft-Ib/in   ASTM D-3763     Izod Impact Notched .125" at 32"   1.5   ASTM D-785     Izod Impact Notched .155"   ASTM D-785     Izod Impact Notched .155"   ASTM D-68     Izod Impact Notched .155"   ASTM D-68     Izod Impact Notched .155"   ASTM D-696     Izod Impact Notched .155"   ASTM D-1003     Izod Impact Notched .155"   ASTM D-100     Izod Impact | _                                     | ,                                     |               |             |  |  |
| Izod Impact Notched .125″ at 32″         1.2         Ft-lb/in Ft-lbs         ASTM D-256           Drop Dart Impact .250″ at 73″         83         Ft-lbs         ASTM D-3763           Rockwell Hardness         115         R Scale ASTM D-785         ASTM D-785           Shear Strength         9,000         psi         ASTM D-732           Compressive Strength         8,000         psi         ASTM D-895           THERMAL         Heat Deflection Temperature @ 264 psi         157         °F         ASTM D-698           Heat Deflection Temperature @ 66 psi         164         °F         ASTM D-648           Coefficient of Thermal Expansion         3.8         In/in/°Fx10⁻⁵         ASTM D-696           Flammability ≥ .080″         HB         -         UL 94           Glass Transition Temperature         178         °F         -           Forming Temperature         280-320         °F         -           OPTICAL         Light Transmission         86         %         ASTM D-1003           Refractive Index         1.57         -         ASTM D-1003           Refractive Index         1.0         %         ASTM D-1003           ELECTRICAL         Dielectric Constant, 1 kHz         2.6   |                                       | ,                                     | '             |             |  |  |
| Drop Dart Impact .250″ at 73″         83         Ft-lbs         ASTM D-3763           Rockwell Hardness         115         R Scale         ASTM D-785           Shear Strength         9,000         psi         ASTM D-732           Compressive Strength         8,000         psi         ASTM D-732           ASTM D-895           THERMAL         Heat Deflection Temperature @ 264 psi         157         °F         ASTM D-648           Heat Deflection Temperature @ 66 psi         164         °F         ASTM D-648           Coefficient of Thermal Expansion         3.8         In/in/°Fx10.°         ASTM D-696           Flammability ≥ .080″         HB         -         UL 94           Glass Transition Temperature         178         °F         -           Forming Temperature         280-320         °F         -           OPTICAL         Light Transmission         86         %         ASTM D-1003           Refractive Index         1.57         -         ASTM D-1503           Refractive Index         1.0         %         ASTM D-1500           ELECTRICAL         Dielectric Constant, 1 kHz         2.6         -         ASTM D-150  |                                       |                                       |               |             |  |  |
| Rockwell Hardness         115         R Scale psi ASTM D-785           Shear Strength         9,000         psi ASTM D-732           Compressive Strength         8,000         psi ASTM D-895           THERMAL           Heat Deflection Temperature @ 264 psi Heat Deflection Temperature @ 66 psi Coefficient of Thermal Expansion         164         °F ASTM D-648           Coefficient of Thermal Expansion         3.8         In/in/°Fx10.5         ASTM D-696           Flammability ≥ .080"         HB         -         UL 94           Glass Transition Temperature         178         °F         -           Forming Temperature         280-320         °F         -           OPTICAL           Light Transmission         86         %         ASTM D-1003           Refractive Index         1.57         -         ASTM D-1003           Refractive Index         1.0         %         ASTM D-1003           ELECTRICAL           Dielectric Constant, 1 kHz         2.6         -         ASTM D-150           Dielectric, 1 mHz         2.4         -         ASTM D-150   |                                       | · · · —                               |               |             |  |  |
| Shear Strength         9,000         psi         ASTM D-732           Compressive Strength         8,000         psi         ASTM D-895           THERMAL           Heat Deflection Temperature @ 264 psi         157         °F         ASTM D-648           Heat Deflection Temperature @ 66 psi         164         °F         ASTM D-648           Coefficient of Thermal Expansion         3.8         In/in/°Fx10⁻⁵         ASTM D-696           Flammability ≥ .080″         HB         -         UL 94           Glass Transition Temperature         178         °F         -           Forming Temperature         280-320         °F         -           OPTICAL           Light Transmission         86         %         ASTM D-1003           Refractive Index         1.57         -         ASTM D-542           Haze         1.0         %         ASTM D-1003    ELECTRICAL  Dielectric Constant, 1 kHz  Dielectric, 1 mHz  2.6  - ASTM D-150  | ·                                     |                                       |               |             |  |  |
| THERMAL         8,000         psi         ASTM D-895           THERMAL         Heat Deflection Temperature @ 264 psi         157         °F         ASTM D-648           Heat Deflection Temperature @ 66 psi         164         °F         ASTM D-648           Coefficient of Thermal Expansion         3.8         In/in/°Fx10⁻⁵         ASTM D-696           Flammability ≥ .080″         HB         -         UL 94           Glass Transition Temperature         178         °F         -           Forming Temperature         280-320         °F         -           OPTICAL         Light Transmission         86         %         ASTM D-1003           Refractive Index         1.57         -         ASTM D-542           Haze         1.0         %         ASTM D-1003    ELECTRICAL  Dielectric Constant, 1 kHz  Dielectric, 1 mHz  2.6  - ASTM D-150   |                                       |                                       |               |             |  |  |
| THERMAL           Heat Deflection Temperature @ 264 psi         157         °F         ASTM D-648           Heat Deflection Temperature @ 66 psi         164         °F         ASTM D-648           Coefficient of Thermal Expansion         3.8         In/in/°Fx10°         ASTM D-696           Flammability ≥ .080″         HB         -         UL 94           Glass Transition Temperature         178         °F         -           Forming Temperature         280-320         °F         -           OPTICAL           Light Transmission         86         %         ASTM D-1003           Refractive Index         1.57         -         ASTM D-542           Haze         1.0         %         ASTM D-1003    ELECTRICAL  Dielectric Constant, 1 kHz  Dielectric, 1 mHz  2.6  - ASTM D-150   | 9                                     | · · · · · · · · · · · · · · · · · · · | ٠             |             |  |  |
| Heat Deflection Temperature @ 264 psi Heat Deflection Temperature @ 66 psi 164 °F ASTM D-648 Coefficient of Thermal Expansion 3.8 In/in/°Fx10° ASTM D-696 Flammability ≥ .080″ HB - UL 94 Glass Transition Temperature 178 °F - Forming Temperature 280-320 °F   OPTICAL Light Transmission 86 % ASTM D-1003 Refractive Index 1.57 - ASTM D-542 Haze 1.0 % ASTM D-1003  ELECTRICAL Dielectric Constant, 1 kHz 2.6 - ASTM D-150 Dielectric, 1 mHz 2.4 - ASTM D-150  | Compressive Strength                  | 6,000                                 | psi           | A31M D-093  |  |  |
| Heat Deflection Temperature @ 66 psi Coefficient of Thermal Expansion Flammability ≥ .080" HB - UL 94 Glass Transition Temperature Forming Temperature  OPTICAL Light Transmission Refractive Index Haze  ELECTRICAL Dielectric Constant, 1 kHz Dielectric, 1 mHz  ASTM D-648 In/in/°Fx10⁻⁵ ASTM D-696 UL 94  SF - UL 94  ASTM D-10⁻⁵ ASTM D-10⁻⁵ ASTM D-1003  ASTM D-1003  ASTM D-1003  ASTM D-1003  ASTM D-1003  ASTM D-1003   |                                       |                                       |               |             |  |  |
| Coefficient of Thermal Expansion         3.8         In/in/°Fx10⁻⁵         ASTM D-696           Flammability ≥ .080″         HB         -         UL 94           Glass Transition Temperature         178         °F         -           Forming Temperature         280-320         °F         -           OPTICAL           Light Transmission         86         %         ASTM D-1003           Refractive Index         1.57         -         ASTM D-542           Haze         1.0         %         ASTM D-1003           ELECTRICAL         Dielectric Constant, 1 kHz         2.6         -         ASTM D-150           Dielectric, 1 mHz         2.4         -         ASTM D-150   |                                       |                                       |               |             |  |  |
| Flammability ≥ .080″         HB         -         UL 94           Glass Transition Temperature         178         °F         -           Forming Temperature         280-320         °F         -           OPTICAL         Light Transmission         86         %         ASTM D-1003           Refractive Index         1.57         -         ASTM D-542           Haze         1.0         %         ASTM D-1003           ELECTRICAL           Dielectric Constant, 1 kHz         2.6         -         ASTM D-150           Dielectric, 1 mHz         2.4         -         ASTM D-150   |                                       |                                       |               |             |  |  |
| Section   Continue   Continue | ·                                     |                                       | In/in/°Fx10⁻⁵ |             |  |  |
| Forming Temperature         280-320         °F         -           OPTICAL         Light Transmission         86         %         ASTM D-1003           Refractive Index         1.57         -         ASTM D-542           Haze         1.0         %         ASTM D-1003           ELECTRICAL         Dielectric Constant, 1 kHz         2.6         -         ASTM D-150           Dielectric, 1 mHz         2.4         -         ASTM D-150   | ,                                     |                                       |               | UL 94       |  |  |
| OPTICAL           Light Transmission         86         %         ASTM D-1003           Refractive Index         1.57         -         ASTM D-542           Haze         1.0         %         ASTM D-1003           ELECTRICAL         Dielectric Constant, 1 kHz         2.6         -         ASTM D-150           Dielectric, 1 mHz         2.4         -         ASTM D-150  | • • • • • • • • • • • • • • • • • • • |                                       |               | -           |  |  |
| Light Transmission       86       %       ASTM D-1003         Refractive Index       1.57       -       ASTM D-542         Haze       1.0       %       ASTM D-1003         ELECTRICAL         Dielectric Constant, 1 kHz       2.6       -       ASTM D-150         Dielectric, 1 mHz       2.4       -       ASTM D-150  | Forming Temperature                   | 280-320                               | °F            | -           |  |  |
| Refractive Index         1.57         -         ASTM D-542           Haze         1.0         %         ASTM D-1003           ELECTRICAL         Dielectric Constant, 1 kHz         2.6         -         ASTM D-150           Dielectric, 1 mHz         2.4         -         ASTM D-150  | OPTICAL                               |                                       |               |             |  |  |
| Haze         1.0         %         ASTM D-1003           ELECTRICAL         Dielectric Constant, 1 kHz         2.6         -         ASTM D-150           Dielectric, 1 mHz         2.4         -         ASTM D-150   | Light Transmission                    | 86                                    | %             | ASTM D-1003 |  |  |
| ELECTRICAL         2.6         - ASTM D-150           Dielectric, 1 mHz         2.4         - ASTM D-150   | Refractive Index                      | 1.57                                  | -             | ASTM D-542  |  |  |
| Dielectric Constant, 1 kHz  Dielectric, 1 mHz  2.6  - ASTM D-150  ASTM D-150  ASTM D-150   | Haze                                  | 1.0                                   | %             | ASTM D-1003 |  |  |
| Dielectric Constant, 1 kHz  Dielectric, 1 mHz  2.6  - ASTM D-150  ASTM D-150  ASTM D-150   | ELECTRICAL                            |                                       |               |             |  |  |
| Dielectric, 1 mHz 2.4 - ASTM D-150   |                                       | 2.6                                   | _             | ASTM D-150  |  |  |
|  | · · · · · · · · · · · · · · · · · · · |                                       | _             |             |  |  |
|  |                                       |                                       | v/mil         |             |  |  |

Recycle Code 2 Polyethylene Terephthalate Glycol Modified

Sheffield Plastics Inc. will not be responsible for the use of this information relative to actual application. Users must make their own determination of its suitability for their specific application. No warranty is made for the fitness of any product, and nothing herein waives any of the seller's conditions of sale.

## **PETG Sheet**

## **VIVAK®** Sheet

Compare VIVAK Sheet's performance for interior fabricated and formed applications. It delivers an optimum balance of performance and economy.

| Performance Comparison  |                            |                                  |                                     |  |
|---|----------------------------|----------------------------------|-------------------------------------|--|
| Impact Strength<br>Falling Dart @ 73"<br>ASTM D-5420 @ .125"                    | Acrylic                    | Polycarbonate                    | VIVAK Sheet                         |  |
| 10 in/lbs.<br>100 in/lbs.<br>300 in/lbs.  | Failed<br>Failed<br>Failed | No break<br>No break<br>No break | No break<br>No break<br>No break    |  |
| Heat Resistance @ 264 psi<br>@ 66 psi<br>Gamma Stability<br>Chemical Resistance | 190°F<br>Poor<br>Poor      | 270°F<br>280°F<br>Fair<br>Fair   | 157°F<br>164°F<br>Excellent<br>Good |  |

For additional or technical information please contact the Sheffield Customer Service Department:

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