

# Ensinger TECARAN™ ABS

Acrylonitrile Butadiene Styrene

Ensinger Inc.

## Message:

Ensinger TECARAN™ ABS is a terpolymer and an amorphous resin. It is manufactured by combining three different compounds. The three that make up TECARAN™ ABS are acrylonitrile, butadiene, and styrene. TECARAN™ ABS occupies the unique position of being a bridge between the commodity and other higher performance engineering thermoplastics. Its performance is characterized by toughness and impact strength even at low temperatures, good stiffness and machinability. The applications for TECARAN™ ABS range from Aerospace and automotive parts and housings, to parts for agricultural lawn and garden equipment and components for medical and business equipment, as well as many others.

| General Information |                                   |       |             |
|---------------------|-----------------------------------|-------|-------------|
| Features            | Low Temperature Flexibility       |       |             |
|                     | Rigid, good                       |       |             |
|                     | Impact resistance, good           |       |             |
|                     | Machinable                        |       |             |
|                     | Adhesiveness                      |       |             |
|                     | Low temperature impact resistance |       |             |
|                     | Good toughness                    |       |             |
|                     | Terpolymer                        |       |             |
|                     | amorphous                         |       |             |
| Uses                | Lawn and Garden Equipment         |       |             |
|                     | Aerospace applications            |       |             |
|                     | Application in Automobile Field   |       |             |
|                     | Business equipment                |       |             |
|                     | Shell                             |       |             |
|                     | Medical/nursing supplies          |       |             |
| Agency Ratings      | FDA Not Rated 2                   |       |             |
|                     | USDA 3A 2                         |       |             |
|                     | USDA Unspecified Approval 2       |       |             |
| Appearance          | Black                             |       |             |
|                     | Natural color                     |       |             |
| Forms               | Shapes                            |       |             |
| Physical            | Nominal Value                     | Unit  | Test Method |
| Specific Gravity    | 1.04                              | g/cm³ | ASTM D792   |
| Water Absorption    |                                   |       | ASTM D570   |
| 23°C, 24 hr         | 0.30                              | %     | ASTM D570   |
| Saturated, 23°C     | 0.70                              | %     | ASTM D570   |

| Hardness  | Nominal Value  | Unit                                  | Test Method |
|---|----------------|---------------------------------------|-------------|
| Rockwell Hardness (R-Scale, 23°C)               | 102            |                                       | ASTM D785   |
| Mechanical                                      | Nominal Value  | Unit                                  | Test Method |
| Tensile Modulus                                 | 1860           | MPa                                   | ASTM D638   |
| Tensile Strength (Yield, 23°C)                  | 35.2           | MPa                                   | ASTM D638   |
| Tensile Elongation (Break, 23°C)                | 15             | %                                     | ASTM D638   |
| Flexural Modulus (23°C)                         | 1860           | MPa                                   | ASTM D790   |
| Flexural Strength (23°C)                        | 55.2           | MPa                                   | ASTM D790   |
| Coefficient of Friction                         |                |                                       |             |
| With self-dynamics <sup>1</sup>                 | 0.35           |                                       | ASTM D1894  |
| With Self-Static                                | 0.19 - 0.21    |                                       |             |
| Wear Factor <sup>2</sup> (0.28 MPa, 0.25 m/sec) | 7100           | 10 <sup>-8</sup> mm <sup>3</sup> /N·m | ASTM D3702  |
| Impact  | Nominal Value  | Unit                                  | Test Method |
| Unnotched Izod Impact (23°C)                    | 340            | J/m                                   | ASTM D256   |
| Thermal   | Nominal Value  | Unit                                  | Test Method |
| Deflection Temperature Under Load               |                |                                       | ASTM D648   |
| 0.45 MPa, not annealed                          | 98.9           | °C                                    | ASTM D648   |
| 1.8 MPa, not annealed                           | 92.2           | °C                                    | ASTM D648   |
| Vicat Softening Temperature                     | 104            | °C                                    |             |
| CLTE - Flow                                     | 9.4E-5         | cm/cm/°C                              | ASTM D696   |
| Specific Heat                                   | 1170           | J/kg/°C                               |             |
| Maximum Service Temperature                     |                |                                       |             |
| Intermittent                                    | 99             | °C                                    |             |
| Long Term                                       | 71             | °C                                    | UL 746B     |
| Electrical                                      | Nominal Value  | Unit                                  | Test Method |
| Volume Resistivity                              | 1.0E+16        | ohms·cm                               | ASTM D257   |
| Dielectric Strength                             | 18             | kV/mm                                 | ASTM D149   |
| Dielectric Constant <sup>3</sup> (23°C, 60 Hz)  | 3.30           |                                       | ASTM D150   |
| Dissipation Factor (23°C, 60 Hz)                | 0.020          |                                       | ASTM D150   |
| Flammability                                    | Nominal Value  | Unit                                  | Test Method |
| Flame Rating                                    | HB             |                                       | UL 94       |
| Additional Information                          |                |                                       |             |
| Values obtained from extruded samples.          |                |                                       |             |
| NOTE  |                |                                       |             |
| 1.  | 40 psi, 50 fpm |                                       |             |
| 2.  | Against Steel  |                                       |             |
| 3.  | 50% RH         |                                       |             |

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# Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

