



**KNACK ENERGY PVT. LTD.**

Empowering the future...

## **Solar PV Encapsulant**

### **KNACK 360 PFC**

**It is a fast cure PID and snail trails resistance, UV and weather stable EVA solar PV Encapsulant. It has wide process window, proven for single stage as well as short cycle multi stage lamination processes. This Encapsulant can be used for all Crystalline and many Thin-Film PV Modules. It has standard UV cut off wavelength.**



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# KNACK 360 PFC

## PROPERTIES

| Particulars                  | Test Method                                  | Unit                              | Values                            |
|------------------------------|--|-----------------------------------|-----------------------------------|
| Thickness                    | ASTM D 6988 - 21                             | mm                                | 0.45 to 0.8 ± 5%                  |
| Width                        | Scale  | mm                                | Up to 1400                        |
| Melting Point                | ISO 11357 - 3                                | °C                                | 70 ± 2                            |
| Surface type                 | Visual                                       |                                   | Orange peel                       |
| Tensile Strength             | ASTM D 882-18                                | MPa                               | 15 ± 3                            |
| Elongation                   | ASTM D 882-18                                | %                                 | ≥600                              |
| Shore Hardness               | ASTM D 2240-15                               | Shore - A                         | 70 ± 5                            |
| Water Absorption             | ISO 62 - 200805                              | %                                 | ≤0.1                              |
| Adhesion to Glass            | ASTM D 903                                   | N/cm                              | ≥75                               |
| Adhesion to Back sheet       | ASTM D 903                                   | N/cm                              | ≥75                               |
| Thermal Shrinkage            | ISO1150<br>(160°C, 5 min.<br>on Glass Plate) | %                                 | ≤2                                |
| Optical Transmittance        | ASTM E 424                                   | %                                 | ≥91                               |
| UV Cut Off Wavelength        | ASTM E 424                                   | nm                                | 360 ± 30                          |
| Refractive Index             | ISO 489                                      |                                   | 1.48                              |
| Dielectric Strength          | ASTM D149                                    | kV/mm                             | ≥25                               |
| Volume Resistivity           | IEC 62788-1-2                                | Ohm.cm                            | ≥1x10 <sup>15</sup>               |
| Gel Content                  | IEC 62788-1-6                                | %                                 | ≥80                               |
| <b>Lamination Parameters</b> | <b>Single Stage</b>                          | <b>Double Stage<br/>(Stage 1)</b> | <b>Double Stage<br/>(Stage 2)</b> |
| Evacuation Time (Minute)#    | 4 - 6  | 4 - 6                             |                                   |
| Lamination Time (Minute)     | 8 - 12                                       | 2 - 4                             | 6 - 9                             |
| Temperature (°C)*            | 135 - 150                                    | 135 - 150                         | 135 - 150                         |

\*Temperature and #Vacuum to be uniformly maintained across the laminator. #Vacuum to be applied at -760 mm Hg, Periodic calibration of the machine input parameters to be done by Machine user.

### Packing:

- Length/Roll: 150 meter
- No. of Rolls/Pallet: 9/12
- Total Linear Meters/Pallet: 1350/1800
- Each roll is sealed in a protective bag in corrugated box
- Boxes are strapped on suitable pallets

### Storage Condition and Shelf Life:

- Store in undamaged original packaging, temperature between 20°C- 30°C and humidity between 40-60% RH
- Recommended use within 9 months from date of manufacture
- Consume within 24 hrs. once opened from original packing

**Note:** The above technical information represents the typical range of properties and is believed to be correct as on date. We recommend the user to carry out intensive trials to test suitability of this product and module laminating conditions. Knack gives no warranty and assumes no liability in connection with any use of this information.