

## Properties

Displays, showcases and other publicity material at sales points

Articles for use with foodstuffs

Town furniture (anti-vandal)

Orthopaedic parts and medical equipment components

Security glazing

Dispensing and recreational machines

Industrial protection

Protective shields (anti-disturbance)

### Dimensional stability to heat

Articles manufactured with this product must not be exposed to continuous use at more than 60°C, depending on application.

### Transformation

It does not whiten when cold-bent up to 2.5 mm.  
Can be cut with a guillotine.  
They can be easily sawn, edged and drilled without any burring.  
Easily welded even with PVC.  
Surface scratches are easily eliminated with a hot air gun.  
Unlike polycarbonate, it can be laser-cut.  
The same tools employed in diamond buffing of acrylics can be used to buff NUDEC<sup>®</sup>PETg sheets.

### Ageing

The UV component of sunlight causes degradation to all plastics in general. This degradation depends on the exposure

- They are available with UV protection
- Easily thermoformable  
FDA (21 CFR 177.1315) United States, apt for use with foodstuffs (except the UV version)
- Reduce noise transmission
- Sterilisable
- Recyclable

conditions, in other words, on the actual duration of exposure to sunlight, the sheet inclination to the sun's rays, temperature and humidity and on sunlight intensity (geographical coordinates).

This degradation shows up as a progressive yellowing, a reduction in light transmission and loss of mechanical properties.

For exterior applications where the sheets are permanently exposed to ultraviolet light, a stabilised product, such as NUDEC<sup>®</sup>PETguv sheets, which are protected on both sides, are recommended.

When used in exterior applications, the protective film must be removed immediately, since exposure to sunlight can cause permanent adhesion to the sheet.

- Excellent transparency and surface brightness
- High impact strength, close to that of polycarbonate
- In impact-based applications, lower thicknesses to those of acrylic sheets can be employed with better results
- Ductile, elongation to breaking similar to that of polycarbonate
- Excellent chemical resistance

| STANDARD SPECIFICATIONS FOR PETg RESIN       |             |                       |             |
|--|-------------|-----------------------|-------------|
|  | CODE        | UNIT                  | VALUE       |
| <b>PHYSICAL</b>                              |             |                       |             |
| Density                                      | ISO 1183    | g/cm <sup>3</sup>     | 1.27        |
| <b>MECHANICAL</b>                            |             |                       |             |
| Tensile strength @ yield                     | ISO 527     | MPa                   | 53          |
| Tensile strength @ breakage                  | ISO 527     | MPa                   | 26          |
| Elongation @ breakage                        | ISO 527     | %                     | >200        |
| Elasticity modulus in traction               | ISO 527     | MPa                   | 2,200       |
| Resistance to flexion                        | ISO 178     | MPa                   | 79          |
| Charpy impact test with notch                | ISO 179     | kJ/m <sup>2</sup>     | 10          |
| Charpy impact test                           | ISO 179     | kJ/m <sup>2</sup>     | No breakage |
| Rockwell hardness, M / R scale               | ASTM D-785  |                       | 115         |
| Ball pressure hardness                       | ISO 2039    | MPa                   | (*)         |
| <b>OPTICAL</b>                               |             |                       |             |
| Light transmission                           | ASTM D-1003 | %                     | 88          |
| Refractive index                             | ASTM D-542  |                       | 1.57        |
| <b>THERMAL</b>                               |             |                       |             |
| Maximum Service temperature                  |             | °C                    | 60          |
| VICAT Softening temperature (10 N)           | ISO 306     | °C                    | 83          |
| VICAT Softening temperature (50 N)           | ISO 306     | °C                    | 78          |
| Heat deflection temperature, HDT A (1.8 MPa) | ISO 75-2    | °C                    | 68          |
| Heat deflection temperature HDT B (0.45 MPa) | ISO 75-2    | °C                    | 72          |
| Coefficient of linear thermal expansion      | ISO 75-2    | x10 <sup>-5</sup> /°C | 6.8         |

These data correspond to raw material values.

(\*) Non-applicable

| CHEMICAL RESISTANCE |              |         |                |
|---------------------|--------------|---------|----------------|
| CHEMICAL PRODUCT    | BEHAVIOUR    |         |                |
|                     | SATISFACTORY | REGULAR | UNSATISFACTORY |
| Mineral oil         | X            |         |                |
| Vegetable oil       | X            |         |                |
| Acetone             |              |         | X              |
| Acetic acid         |              | X       |                |
| Water               | X            |         |                |
| Turpentine          | X            |         |                |
| Ammonia             |              |         | X              |
| Detergents          | X            |         |                |
| Ethanol             | X            |         |                |
| Petrol              | X            |         |                |
| Glycerine           | X            |         |                |
| Methanol            |              | X       |                |
| Toluene             |              |         | X              |

| REACTION TO FIRE |                |                |
|------------------|----------------|----------------|
| COUNTRY          | CODE           | CLASSIFICATION |
| GREAT BRITAIN    | BS 476: Part 7 | IY             |
| GERMANY          | DIN 4102-1     | B1             |
| FRANCE           | NFP 92-507     | M2             |

A NUDEC PETg safety file is available for any additional type of query.