

# NAS® ECO 30 BC70

Styrene Methyl Methacrylate (SMMA)

## TECHNICAL DATASHEET

### DESCRIPTION

NAS® ECO 30 is a styrene acrylic copolymer that can be used in a variety of applications demanding a strong, stiff water-clear plastic resin with excellent thermal stability. NAS ECO 30 BC70 is an ISCC compliant product leading to a substitution of fossil source styrene with ISCC certified bio-attributed styrene.

### FEATURES

- High surface quality
- Sterilisable(ETO,NO2,Irradiation)
- Transparency
- Low density
- Water clear appearance

### APPLICATIONS

- Water filters
- Point-of-purchase displays
- Food contact applications
- Medical devices
- Cosmetic packaging

| Property, Test Condition                                         | Standard    | Unit       | Values |
|------------------------------------------------------------------|-------------|------------|--------|
| <b>Sustainability Properties</b>                                 |             |            |        |
| Carbon Footprint Reduction vs Fossil-Based (3rd party validated) | ISO 14044   | %          | 79     |
| Attributed Content of ISCC-certified Bio-Circular Sources (min.) | -           | %          | 70     |
| <b>Rheological Properties</b>                                    |             |            |        |
| Melt Volume Rate 220 °C/10 kg                                    | ISO 1133    | cm³/10 min | 30     |
| <b>Mechanical Properties</b>                                     |             |            |        |
| Charpy Notched Impact Strength, 23° C                            | ISO 179/1eA | kJ/m²      | 1.5    |
| Charpy Unnotched, 23 °C                                          | ISO 179/1eU | kJ/m²      | 12     |
| Izod Notched Impact Strength, 23 °C                              | ISO 180/A   | kJ/m²      | 2.5    |
| Tensile Modulus                                                  | ISO 527     | MPa        | 3300   |
| Tensile Stress at Yield, 23 °C                                   | ISO 527     | MPa        | 60     |
| Tensile Strain at Break, 23 °C                                   | ISO 527     | %          | 2.5    |
| Flexural Modulus, 23 °C                                          | ISO 178     | MPa        | 3400   |
| Flexural Strength, 23 °C                                         | ISO 178     | MPa        | 100    |
| Hardness, Ball Indentation                                       | ISO 2039-1  | MPa        | 169    |
| <b>Thermal Properties</b>                                        |             |            |        |

# NAS® ECO 30 BC70

Styrene Methyl Methacrylate (SMMA)

## TECHNICAL DATASHEET

| Property, Test Condition                                      | Standard    | Unit  | Values    |
|---------------------------------------------------------------|-------------|-------|-----------|
| Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)           | ISO 306     | °C    | 98        |
| Heat Deflection Temperature A; (annealed 4 h/80 °C; 1.8 MPa)  | ISO 75      | °C    | 95        |
| Heat Deflection Temperature B; (annealed 4 h/80 °C; 0.45 MPa) | ISO 75      | °C    | 96        |
| <b>Optical Properties</b>                                     |             |       |           |
| Refractive Index, Sodium D Line                               | ISO 489     | -     | 1.56      |
| Light Transmission at 550 nm                                  | ASTM D 1003 | %     | 91.4      |
| Haze                                                          | ASTM D 1003 | %     | 0.3       |
| <b>Other Properties</b>                                       |             |       |           |
| Density                                                       | ISO 1183    | kg/m³ | 1090      |
| Moisture Absorption, Equilibrium 23 °C/50% RH                 | ISO 62      | %     | 0.15      |
| <b>Processing</b>                                             |             |       |           |
| Melt Temperature Range                                        | ISO 294     | °C    | 200 - 240 |
| Mold Temperature Range                                        | ISO 294     | °C    | 30 - 50   |
| Drying Temperature                                            | -           | °C    | 80        |
| Drying Time                                                   | -           | h     | 2         |

Typical values for uncolored products

 Please note that all processing data stated are only indicative and may vary depending on the individual processing complexities.  
 Please consult our local sales or technical representatives for details.

## SUPPLY FORM

INEOS Styrolution NAS® ECO resins are available in bulk, 25kg bags or octabin cartons. NAS® ECO pellets can be stored for prolonged periods in dry areas subject to normal temperature control without any changes in mechanical properties. However, for sensitive colors storage over some years can cause some color change. Under poor storage conditions, NAS® ECO absorbs moisture, which can be removed again by drying. Packs stored in cold areas should be brought to ambient temperature before opening, to prevent condensation on the pellets.

## PROCESSING

NAS® ECO is a low moisture absorption copolymer and in many instances processes readily without pre-drying. There are combinations of conditions that require the product to be dried, such as high humidity and heavy section molding. Two hours at 82 °C (180 °F) is adequate for most applications. Dehumidifying type driers are recommended. To obtain maximum clarity and gloss from this product, it is necessary to have a highly polished mold. Design of gates, runners and sprues can be patterned after standard practice for high-heat polystyrene. All mold

## NAS® ECO 30 BC70

Styrene Methyl Methacrylate (SMMA)

## TECHNICAL DATASHEET

surfaces must be temperature controlled at 54 °C (130 °F) for optimum clarity and surface gloss. For optimum clarity, machine cylinders, barrels, screws, valves, etc. should be thoroughly cleaned before processing. Contamination by other materials will cause streaking or haze.

### PRODUCT SAFETY

During processing of NAS® ECO small quantities of styrene monomer may be released into the atmosphere. At styrene vapor concentrations below 20ppm no negative effects on health are expected. In our experience, the concentration of styrene does not exceed 1 ppm in well ventilated workplaces - that is where five to eight air changes per hour are made.

### DISCLAIMER

The above mentioned data are accurate to the best of our knowledge. They are based upon reputable labs and industry standard testing methods. These are only typical values and actual product specification may deviate at industrial range. Therefore, no data in this technical data sheet shall constitute a warranty or representation regarding product features, fitness of the product for a specific purpose or application or its processability. INEOS Styrolution disclaims all liability in connection therewith. The customer himself is required to verify whether or not the product is suitable for the further processing or application intended and whether or not the product complies with the relevant statutory requirements. Unless explicitly and individually otherwise agreed in writing, INEOS Styrolution's sole and exclusive liability with respect to its products is set forth in INEOS Styrolution's General Terms and Conditions for Sale.