

# EcoPaXX<sup>®</sup> Q–KS

## PA410 FR(30)

Flame Retardant (halogen– phosphorous–free)

EcoPaXX<sup>®</sup> Q–KS is a versatile halogen–free flame–retarded long aliphatic polyamide with UL94 V0 & CTI 600V rating with high flow and ductility. It offers excellent retention of electric properties upon humidity uptake.

### Sustainability

Bio–based

| PROPERTIES                             | TYPICAL DATA      | UNIT              | TEST METHOD    |
|--|-------------------|-------------------|----------------|
| <b>RHEOLOGICAL PROPERTIES</b>          |                   |                   |                |
|  | <b>DRY / COND</b> |                   |                |
| Molding shrinkage (parallel)           | 1.1 / *           | %                 | ISO 294–4      |
| Molding shrinkage (normal)             | 0.9 / *           | %                 | ISO 294–4      |
| <b>MECHANICAL PROPERTIES</b>           |                   |                   |                |
|  | <b>DRY / COND</b> |                   |                |
| Tensile modulus                        | 3800 / 2200       | MPa               | ISO 527–1/–2   |
| Nominal strain at break                | 6 / 30            | %                 | ISO 527–1/–2   |
| Yield stress                           | 75 / 50           | MPa               | ISO 527–1/–2   |
| Yield strain                           | 4 / 12.5          | %                 | ISO 527–1/–2   |
| Tensile modulus (80°C)                 | 1300 / –          | MPa               | ISO 527–1/–2   |
| Charpy impact strength (+23°C)         | 75 / –            | kJ/m <sup>2</sup> | ISO 179/1eU    |
| Charpy impact strength (–30°C)         | 85 / 85           | kJ/m <sup>2</sup> | ISO 179/1eU    |
| Charpy notched impact strength (+23°C) | 3 / 5             | kJ/m <sup>2</sup> | ISO 179/1eA    |
| Charpy notched impact strength (–30°C) | 2.8 / 2.7         | kJ/m <sup>2</sup> | ISO 179/1eA    |
| Flexural modulus                       | 3900 / 2300       | MPa               | ISO 178        |
| Flexural strength                      | 120 / 65          | MPa               | ISO 178        |
| <b>THERMAL PROPERTIES</b>              |                   |                   |                |
|  | <b>DRY / COND</b> |                   |                |
| Melting temperature (10°C/min)         | 250 / *           | °C                | ISO 11357–1/–3 |

## Property Data

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| <i>PROPERTIES</i>  | <i>TYPICAL DATA</i> | <i>UNIT</i>              | <i>TEST METHOD</i>                 |
|--|---------------------|--------------------------|------------------------------------|
| Temp. of deflection under load (1.80 MPa)                          | 110 / *             | °C                       | ISO 75-1/-2                        |
| Temp. of deflection under load (0.45 MPa)                          | 190 / *             | °C                       | ISO 75-1/-2                        |
| Burning Behav. at 1.5 mm nom. thickn.<br>Thickness tested          | V-0 / *<br>1.5 / *  | class<br>mm              | IEC 60695-11-10<br>IEC 60695-11-10 |
| Burning Behav. at 3.0 mm nom. thickn.<br>Thickness tested          | V-0 / *<br>3 / *    | class<br>mm              | IEC 60695-11-10<br>IEC 60695-11-10 |
| Oxygen index   | 36 / *              | %                        | ISO 4589-1/-2                      |
| Glow Wire Flammability Index GWFI<br>GWFI (Thickness (1) tested)   | 960 / -<br>0.75 / - | °C<br>mm                 | IEC 60695-2-12<br>IEC 60695-2-12   |
| Glow Wire Ignition Temperature GWIT<br>GWIT (Thickness (1) tested) | 960 / -<br>0.75 / - | °C<br>mm                 | IEC 60695-2-13<br>IEC 60695-2-13   |
| <b><i>ELECTRICAL PROPERTIES</i></b>                                |                     | <b><i>DRY / COND</i></b> |                                    |
| Relative permittivity (100Hz)                                      | 3.85 / -            | -                        | IEC 62631-2-1                      |
| Relative permittivity (1 MHz)                                      | 3.45 / -            | -                        | IEC 62631-2-1                      |
| Dissipation factor (100 Hz)  | 140 / -             | E-4                      | IEC 62631-2-1                      |
| Dissipation factor (1 MHz)   | 200 / -             | E-4                      | IEC 62631-2-1                      |
| Volume resistivity   | >1E13 / 7E11        | Ohm*m                    | IEC 62631-3-1                      |
| Surface resistivity  | - / 6E13            | Ohm                      | IEC 62631-3-2                      |
| Electric strength  | 32 / 27             | kV/mm                    | IEC 60243-1                        |
| Comparative tracking index   | 600 / 600           | V                        | IEC 60112                          |
| <b><i>OTHER PROPERTIES</i></b>                                     |                     | <b><i>DRY / COND</i></b> |                                    |
| Water absorption   | 4.8 / *             | %                        | Sim. to ISO 62                     |
| Water absorption in water at 23°C after 24h                        | 0.6 / *             | %                        | ISO 62                             |
| Humidity absorption  | 1.8 / *             | %                        | Sim. to ISO 62                     |
| Density  | 1160 / -            | kg/m <sup>3</sup>        | ISO 1183                           |