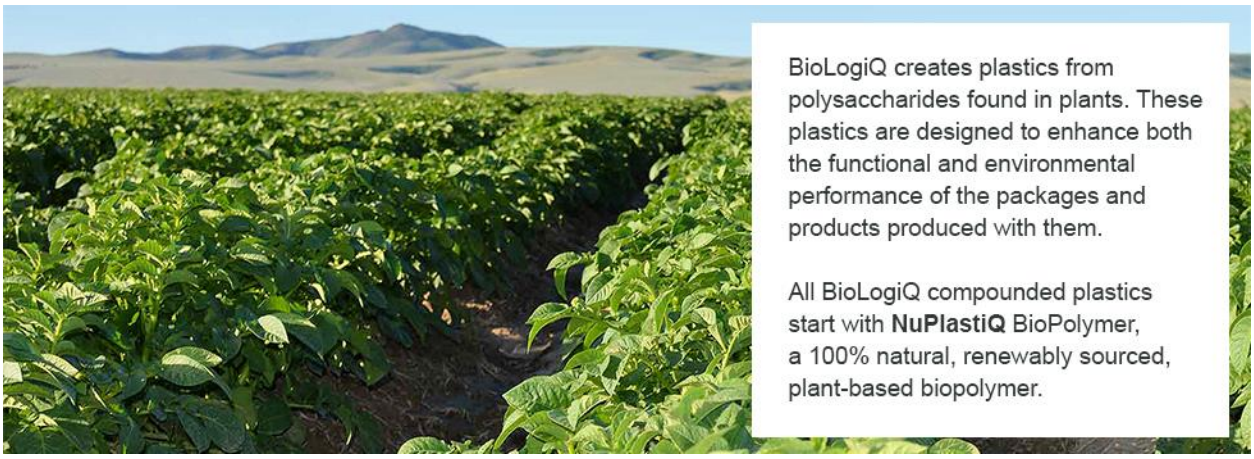
Technical Data Sheet (TDS)

# Product: BioBlend® XD 25052




## Description

- One of the BioBlend® XD family of high durability BioPolymers designed for injection molding applications.
- BioBlend® XD 25052 is a masterbatch that contains 50% NuPlastiQ BioPolymer compounded with a polypropylene homopolymer.
- Made from 50% annually renewable agricultural resources.
- Supplied in pellet form.

## Applications

- BioBlend® XD 25052 is intended for injection molded applications that require fast cycle times.
- Recommended for large thin wall parts, caps, and closures.

## Properties

| PHYSICAL | TEST METHOD | NOMINAL VALUE | UNITS |
|---|---|---|---|
| Density: | ASTM D792 | 1.16 | $g/cm^3$ |
| **THERMAL** | | | |
| Melt Flow Index | ASTM D1238 | 4.7 | g/10 min (190 °C/2.16 kg) |
| **ADDITIONAL INFORMATION** | | | |
| Moisture Content:(1) | ASTM D6980 | ≤ 0.5 | % |
| **MECHANICAL PROPERTIES (2)** | | | |
| **Tensile Properties** | | | |
| Secant Modulus @ 1% | ASTM D638 | 560 | MPa |
| Tensile Strength at Break | ASTM D638 | 24 | MPa |
| Elongation at Break | ASTM D638 | 13 | % |
| **Flexural Properties** | | | |
| Flexural Modulus | ASTM D790 | 1040 | MPa |
| Ultimate Flexural Strength | ASTM D790 | 38 | MPa |
| **Notched Impact Strength** | | | |
| Izod - Notched | ASTM D256 | 27 | J/m |

Table Notes:

1) Moisture content was measured with an infrared moisture analyzer at 110°C for 10 minutes.
2) Mechanical properties were measured on injection molded parts made directly from the XD 25052 BioBlend.
3) These values are typical properties only and should not be used for specification purposes. End users should confirm results with their own tests.

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## Processing Considerations

- XD 25052 is designed to be diluted with a customer specific polypropylene to achieve a final NuPlastiQ GP concentration between 10% and 40%.
- XD 25052 can be run on existing process equipment with a few adjustments.
  - Injection molded applications with XD 25052 are slightly more sensitive to processing conditions such as temperature profile and cycle time.
  - A typical recommended temperature profile will be in the 180°C – 210°C range.
  - Depending on equipment, process conditions, and residence time, as temperatures increase in this range the glycerin plasticizer may experience some volatilization. This may cause a slight odor and/or smoke and is expected under normal processing conditions. Always use proper ventilation. See the BioBlend® XP 25052 SDS for details.
- Some equipment (shorter residence time) may allow for higher processing temperatures (210°C - 225°C).
- If the melt temperature is too hot for the specific blend, some scorching and dark coloring may occur. Lower the extrusion temperature and continue processing until the color lightens to an acceptable level.

## Packaging

- XD 25052 can be shipped in the following formats:
  - 25kg moisture barrier bags.
  - 1000kg gaylord boxes with a moisture barrier bag.

## Storage

- XD 25052 should be stored in a dry location away from heat and direct sunlight. Material must remain sealed in moisture barrier bag until used. Material should be stored under normal warehouse conditions (typical max temperature of 80°F/26°C.)

## Drying

- BioLogiQ BioBlends are dried after production and shipped in sealed moisture-proof bags that are ready to use as supplied. They should be stored indoors in the sealed container away from heat until used.
- If pellets are exposed to a humid environment, they will absorb moisture from the air. If needed, dry pellets by introducing warm dry air at no more than 80°C for 1-4 hours.
- The estimated moisture content of a BioLogiQ BioBlend can be measured with an infrared moisture analyzer at 110°C for 10 minutes. The result of the measurement will not perfectly equal the moisture content, due to possible partial evaporation of plasticizer. The result from this test should be <0.5% moisture prior to processing.

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## Appendix

- The following table contains the mechanical properties of injection molded parts made by taking 50% XD 25052 and dry blending with 50% of a homopolymer PP to achieve a total NuPlastiQ concentration of 25%.

| **MECHANICAL PROPERTIES** (1) | | | |
|---|---|---|---|
| **Tensile Properties** | | | |
| Secant Modulus @ 1% | ASTM D638 | 620 | MPa |
| Tensile Strength at Break | ASTM D638 | 28 | MPa |
| Elongation at Break | ASTM D638 | 15.9 | % |
| **Flexural Properties** | | | |
| Flexural Modulus | ASTM D790 | 1070 | MPa |
| Ultimate Flexural Strength | ASTM D790 | 42.7 | MPa |
| **Notched Impact Strength** | | | |
| Izod - Notched | ASTM D256 | 24.4 | J/m |

Table Notes:

1) Mechanical properties were measured on injection molded parts made from dry blending 50% XD 25052 and 50% of a homopolymer PP at the injection molded stage.
2) These values are typical properties only and should not be used for specification purposes. End users should confirm results with their own tests.

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