

Technical Data Sheet

Re-tate™ is a high-quality, phthalate-free recycled bioacetate that utilizes bio-based plasticizers and provides mechanical properties and industrial processability (injection, extrusion, compression) comparable to virgin acetate.

Formulated from controlled waste streams, it features exceptional versatility in colors and finishes—despite a subtle, natural yellowish base tone—along with an adjustable formulation for various high-end applications (eyewear frames, jewelry, technical components).

Additionally, it delivers a strong sustainable impact, featuring an estimated 53% carbon footprint reduction compared to conventional virgin material and complete recyclability within IMEKO’s material recovery system.

PHYSICAL AND MECHANICAL PROPERTIES OF RE-TATE™

Below is a summary of the physical and mechanical properties obtained according to ASTM standards:

Property	Value	Unit	Method
Density	1.27 ± 0.0	g/cm ³	ASTM D792
Flow index	2.7 ± 0.205	g/10min; @190 °C 2.16 kg	ASTM D 1238
Young's modulus or elasticity	1,490 ± 317	MPa	ASTM D 790
Maximum effort	34.2 ± 1.9	MPa	ASTM D 638
Elongation at break	9.1 ± 2.6	%	ASTM D 638

Data extracted from the technical report prepared by GT-ATP for IMEKO in 2026.

PROCESSING PARAMETERS AND CONDITIONS

Typical values for processing by molding and injection:

Parameters and conditions	Typical value
Injection temperature	185 °C
Injection pressure	140 bar
Injection Flow	140 cm ³ /s
Tangential velocity	140 m/min
Cooling time	140 s
Pre-drying requirement ^(*)	4-6 hours 70-90°C

* The material should be dried in a dehumidifier.

Processing parameters vary depending on the method and conditions employed.

THERMAL CHARACTERIZATION AND TOXICOLOGICAL ANALYSIS

✓ Compositional Thermal Characterization

Results from Thermogravimetric Analysis (TGA) and Differential Scanning Calorimetry (DSC) demonstrate the purity of the recovered cellulose acetate and its agreement with standard thermal profiles.

✓ Toxicological Analysis

Chemical analyses rule out the harmful presence of heavy metals and organic compounds (PAHs), guaranteeing the chemical safety of Re-tate™.

Note: For further technical details or specific application guidance, please contact the manufacturer.

By  **IMEKO**

