



# Rotomoulding

Braskem, the largest producer of thermoplastic resins in the Americas and a global leader in biopolymers, strengthens the market with the development of special resins and additives that make rotomolding more efficient and attractive. The need to produce in accordance with globally adopted technical standards is gaining new followers every day. Supported by standards, rotomolding can be used in previously unexplored applications.

Several polymers can be used in the rotomolding process. Polyethylene (PE) represents over 90% of the entire market. The main reasons why PE dominates the rotomolding industry are its thermal stability, high impact resistance, chemical resistance (ESCR), and low warpage (warping).

The main advantages of the rotomolding process, compared to other processes:

- Production versatility in the manufacture of small parts such as toys to large-volume tanks of up to 30,000 liters;
- Lower equipment and tooling costs;
- Strength and durability of parts;
- Development of products with more complex designs, better finishes, and a wide variety of textures and colors;
- Ensures a good surface finish on parts;
- Low residual stresses from processing.





## Polyethylene Portfolio for Rotomolding

Braskem has a large portfolio of resins for rotational molding, which  
as designed to better serve the segment and its diverse applications.

| Application   | Grade   | Copounding | Comonomer | Melt Index<br>(g/10 min) | Density<br>(g/cm <sup>3</sup> ) | UV<br>Stabilizer |
|---|---------|------------|-----------|--------------------------|---------------------------------|------------------|
| Tanks and cisterns for water storage, manholes, and parts with high rigidity.                           | HD4601U | -          | Hexene    | 2,0                      | 0,942                           | UV16             |
| Tanks and reservoirs for storing water, chemical, and agricultural products                             | ML3601U | -          | Hexene    | 3,3                      | 0,939                           | UV14             |
| General purpose parts, technical parts, automotive parts, and water tanks                               | ML3602U | -          | Hexene    | 5,0                      | 0,937                           | UV8              |
| Water tanks up to 2,000 liters and septic tanks. Exclusive product for parts containing colored pigment | ML4400N | -          | Butene    | 4,1                      | 0,939                           | UV8              |
| General purpose items, playground equipment, vases, mannequins, and agricultural items                  | ML3400N | -          | Butene    | 5,5                      | 0,935                           | UV8              |

\*Braskem also offers technical solutions for Rotomolding Specialties (current patent):

High Flow Roto (IF=6.8 g/10 min / DE=0.937 g/cm<sup>3</sup>) for the application of parts with better surface finishes, complex designs, and agricultural applications. I'm green™ bio-based Roto

(IF=4.5 g/10 min / DE=0.939 g/cm<sup>3</sup>) for the application of vases, septic tanks, and general-purpose parts.

Contact Braskem Technical Services for further clarification on these products.



## Rotational Moulding Laboratory

Braskem's Technology and Innovation Center (CTI) in Triunfo, one of the most modern polymer research centers in Latin America, has invested in equipment for a complete rotational molding laboratory. The laboratory aims to develop solutions for the rotational molding market. The laboratory consists of a commercial-scale rotational molding machine with a 1.5-meter-diameter gas oven, an air temperature gauge inside the mold for process optimization and control, equipment for performing ARM dart impact tests (industry standard), and a laboratory-scale micronizer capable of cryogenically (low-temperature) micronizing materials. Tests that can be performed on the equipment include productivity analyses, technical comparisons between materials, assessment of product specification limits, and technical support for customer demands. The CTI is also equipped to perform polymer behavior analyses, such as sintering, molecular weight distribution, rheology, and efficiency and quantification of the additive package.

One of the molds developed for this equipment allows the removal of the specimens required for the ARM impact test in just one cycle.

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