



## Fuel's Portfolio

# Braskem: ideas and attitudes capable of transforming the future

We present hereafter Braskem's current fuel portfolio, with products and solutions that contribute to improve people's lives through transportation, power generation and industrial goods, among other applications.

Our innovative DNA and our commitment to the Circular Economy are reflected in a wide range of thermoplastic resins and basic and performance chemicals products, with applications in various sectors.

We are a global chemical company, with 8,000 employees, oriented for the human being and with a look at the future.

## Fuels

Braskem's fuel production seeks to combine quality, performance and sustainability, in compliance with both market and regulatory high standards.

Our portfolio offer includes products such as premium and regular gasoline, low sulfur fuel oil, liquefied petroleum gas (LPG) and other special gases, as well as octane and oxygenated boosters.

**COMPLIANCE WITH THE HIGHEST INTERNATIONAL STANDARDS AND ANP REQUIREMENTS**

Efficiency

Performance

Sustainability



## Transportation solutions

The transportation of people and essential items is a necessity of the modern life, therefore, we are continuously working to improve our portfolio. Braskem's automotive gasoline is the result of our technical and industrial capacity and meets the National Petroleum Agency specifications of the Natural Gas and Biofuels (ANP, in Portuguese).

### **GASOLINE TYPE A** (ETHANOL-FREE)

Composed of a hydrocarbons mixture, gasoline is the main fuel used for light vehicles in the Brazilian market. It is produced by Braskem in the states of São Paulo, Bahia and Rio Grande do Sul.

### **PREMIUM GASOLINE TYPE A** (ETHANOL-FREE)

The Premium Gasoline can be used in any automotive vehicle and consists of a combination of high octane hydrocarbons, a factor that makes the engine reach the potential projected by vehicle manufacturers, ensuring efficiency and performance.

Braskem's Premium Gasoline is currently produced at the ABC Petrochemical Plant, which eases the distribution to the São Paulo region, where the biggest market is located.

	MON	RON	Specific gravity at 20 °C
<b>Gasoline</b>	82	93	715 kg/m <sup>3</sup> min.

\* MON and RON parameters are determined with the addition of AEF, according to the ANP resolution.

	RON	Specific gravity at 20 °C
<b>Premium Gasoline</b>	97	715 kg/m <sup>3</sup> min.

\* The RON parameter is determined with the addition of AEF, according to the ANP resolution.



## ► Low sulfur fuel oil for industries

Widely used for power generation in the segment, the oil produced by Braskem meets global demands and requirements for quality and low sulfur oil levels to reduce pollutant emissions.

### BTE OIL

It consists mainly of an aromatic hydrocarbons mixture, obtained from cracking light oil fractions, in the form of a dark viscous liquid. It is produced by Braskem in the states of São Paulo, Bahia and Rio Grande do Sul.

	Viscosity	Sulfur content	Flash Point
BTE oil	10 a 90 mm <sup>2</sup> /s	0.4% mass	66 °C min.
C10+ Fuels	< 2,5 mm <sup>2</sup> /s	< 1% mass	> 66 °C min.



# ► Gases for the residential and industrial segments

Products such as Liquefied Petroleum Gas (LPG), used in millions of Brazilian homes and industries as an energy source, in addition to special gases, such as propane and special butane, used in specific applications, are Braskem's solutions for the market.

## LIQUEFIED PETROLEUM GAS (LPG)

LPG is formed by a hydrocarbon gases mixture composed of three (propane) and/or four (butane) carbon atoms, which have great applicability as a fuel due to its characteristics of high calorific value and excellent burning quality. With its efficiency and low environmental impact, it is one of the solutions in Braskem's fuel portfolio, currently available in the states of São Paulo and Bahia.

	Maximum Steam Pressure at 37.8 °C	Residue, 100 mL evaporated	Total sulfur
LPG (Commercial Butane)	480	< 0,05 ml	140 mg/kg max.
LPG (Commercial Propane)	1430	< 0,05 ml	185 mg/kg max.

## Special Gases

### SPECIAL PROPANE

It is a saturated hydrocarbon with three carbon atoms and eight hydrogen atoms, up to 99% purity in volume. It is used as a fuel in applications such as cutting, heat treatment of metals, propellant agent. It is produced by Braskem in the state of São Paulo.

### SPECIAL BUTANE

It is a saturated hydrocarbon with four carbon atoms and ten hydrogen with high purity. Its main applications are the propellant in aerosols and the polymers expansion. It is produced by Braskem in the state of Rio de Janeiro.

	Butanes	Propane	Total sulfur
Special Propane		> 96 %	123 mg/kg max.
Special Butane	> 96 %		< 1 mg/kg max



# ► Octane and oxygenated boosters

Octane and oxygenated boosters add quality and performance to fuels, bringing a new level of efficiency. Braskem has three solutions in its portfolio: the Aromatic C7C8, available for the national and export markets; and ETBE and MTBE, products for the exports market (not sold in Brazil).

## AROMATIC C7C8

It is composed primarily by aromatic hydrocarbon chains with seven (xylenes) and eight (toluenes) carbon atoms and can be used in the production of gasoline by increasing octane and adding important benefits to the fuel. Among them: low vapor pressure, higher energy efficiency, more power and better combustion. The C7C8 is produced in the state of Rio Grande do Sul.

	RVP	Sulfur	MON	RON
Aromatic C7C8	< 8 kpa	< 1 ppm	96	106

## ETBE (ETHYL TERTIARY-BUTYL ETHER)

It is an automotive bio additive to increase the octane number of gasoline. The booster produced by Braskem is composed of isobutene and ethanol derived from a renewable source, sugarcane, which reduced the emission of pollutants in its production process. Braskem's ETBE is produced in the state of Bahia and Rio Grande do Sul and its main destinations are the Asian and European markets.


	Purity	MON	RON
ETBE	> 96%	103	118

## MTBE (METHYL-TERT-BUTYL-ETHER)

It is an automotive additive used in gasoline to increase octane number, increasing fuel efficiency.

	Purity	MON	RON
MTBE	> 98	101	118





We are available to discuss our Fuel portfolio.  
Talk to your business contact at Braskem or send an email through  
**[braskem.com.br/contato](https://braskem.com.br/contato)**