

*“Unleaded competition fuel for 2-stroke Motorcycle racing”*



*Using pure bases, our formulas guarantee naturally stable, long-lasting properties, consistent from one production batch to another. This search for constant and optimum quality gives you first class performance, in conformity with official regulations.*

## Use

- **ELF MITS 46** is an unleaded fuel for 2-stroke engines, exclusively for use in motorcycle circuit racing.
- Complies with FIM regulations.
- A development of the fuel **ELF MITS 42**, **ELF MITS 46** has a finer olefin distribution that delays the appearance of the knock phenomenon. The latter is nonetheless less gradual.
- Directly drawn from ELF's experience in 2-stroke MotoGP, **ELF MITS 46** is regularly used in Grand Prix.
- Particularly suited to competitions like:
  - Moto 250 cc
  - Moto 125 cc

## Characteristics

		Typical data	FIM 2-stroke regulations
<b>OCTANE NUMBER</b>	RON	101.5	95 to 102
	MON	89.6	85 to 90
<b>DENSITY</b>	kg/l at 15°C	0.765	0.725 to 0.775
<b>OXYGEN</b>	% m/m	2.6	2.7 max
<b>AIR/FUEL RATIO</b>		14.05	
<b>VAPOUR PRESSURE</b>	Bar at 37.8°C	0.480	0.900
<b>DISTILLATION (°C)</b>	% vol. at 70°C	26	22 to 50
	% vol. at 100°C	58	46 to 71
<b>SULPHUR</b>	mg/kg	<0.001	0.01 max
<b>BENZENE</b>	% vol.	<0.05	1 max

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## Properties

Fuel characteristics	→	Technical gains	→	Engine benefits
<b>Oxygen content</b> set to FIM upper regulatory limit	→	Greater <b>filling capacity</b> through air/fuel mixture cooling	→	Spontaneous power gains (without special tuning)  Excellent engine response in transition phase
<b>Octane content</b> set to FIM upper regulatory limit	→	Excellent anti- <b>knocking</b>	→	Perfect reliability at prolonged high speed
Strong <b>olefin content</b>	→	<b>High combustion speed</b>	→	Better engine speed and better combustion yield

## Recommendation

- **ELF MITS 46** provides significant gains in power and reliability, with no fine-tuning.
- To get the full benefit of this product, the engine must be very carefully adapted.
- **ELF MITS 46** can be mixed with the lubricant **ELF HTX 909** or with **ELF HTX 976**, for even more efficiency.
- **ELF MITS 46** comes in a more progressive ELF version: **MITS 42**

## Storage

To preserve its original properties and comply with the Health and Safety rules pertaining to fuels, **ELF MITS 46** must be handled and stored away from sunlight and bad weather and properly resealed in its drum after each use, to avoid loss of the lightest particles.

## Glossary

**RON & MON:** The RON & MON characterize the resistance to knocking (see definition) of a fuel used in a spark-ignition engine. The RON is representative of the functioning of an engine running in cold and low speed conditions, while the MON is representative of an engine running in warm and high speed conditions.

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For competition use, the MON is commonly used to describe a fuel's anti-knocking capacity. Higher octane levels give the fuel greater capacity to allow the engine to function under severe conditions that raise speeds (high rotation speed, high compression ratio).

**OXYGEN CONTENT:** Oxygenated compounds naturally contain high levels of octane and generally improve engine filling capacities thanks to the cooling effect on the admitted air flow (see definition). Others also have remarkable combustion speeds.

**AIR/FUEL RATIO (stoichiometric ratio):** This ratio characterizes the respective fuel and combustive (air intake) quantities necessary for ideal combustion in theory. In practice, most of the time, the engine tuner will make sure that the air/fuel ratio corresponds to a value between 1.10 and 1.20, or the theoretical value in relation to the actual value.

**OLEFINS AND DI-OLEFINS:** These unsaturated hydrocarbon compounds (double carbon-carbon bond) do not exist in natural form; they are found in petroleum fractions from cracking facilities.

Thanks to the reactivity of their double bond(s), these molecules have particularly high combustion speeds.