ELF MOTO 4T-2M

"Unleaded competition fuel for 4-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 Moto 4T-2M** is an unleaded fuel for 4-stroke engines, exclusively for use in Motorcycle racing.
- Complies with FIM 4-stroke regulations.
- Optimised within the limits of FIM regulations, **ELF Moto 4T-2M** provides spontaneous power gains for engines running at high speeds.
- Directly drawn from ELF's experience in 4-stroke MotoGP and Superbike/Supersport, **ELF Moto 4T-2M** is used by the major teams in competition.
- **ELF Moto 4T-2M** offers neutral tuning with regard to atmospheric conditions and altitude. This means that the engine management can be adjusted very quickly, from one weekend race to another.
- Particularly suited to competitions like:
  - MotoGP
  - Superbike/Supersport

Characteristics

		Typical data	FIM 4-stroke regulations
OCTANE NUMBER	RON	99.5	95 to 102
	MON	86	85 to 90
DENSITY	kg/l at 15°C	0.765	0.720 to 0.775
OXYGEN	% m/m	2.6	2.7 max
AIR/FUEL RATIO		13.94	
VAPOUR PRESSURE	Bar at 37.8°C	0.500	0.900 max
DISTILLATION (°C)	FBP (°C)	140	210 max
	% vol. at 70°C	30	22 to 50

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	% vol. at 100°C	70	46 to 71
SULPHUR	mg/kg	<10	10
LEAD	g/litre	<0.005	0.005 max
DIOLEFINS	% vol.	<0.3%	1 max
BENZENE	% vol.	<0.01	1 max
NCV	Kcal/L	7550	

Properties

Fuel characteristics	→	Technical gains	→	Engine benefits
Oxygen content set to FIM upper regulatory limit	→	Natural **booster** effect High latent heat of evaporation helps **cool** mix before combustion Greater **filling capacity** through air/fuel mixture cooling	→	**Spontaneous power gains (without special tuning)** **Power gains after optimisation of ignition sequence** **Excellent engine response in transient phase**
Strong **density**	→	Strong energy content of fuel	→	**Significant improvement in filling compared to traditional fuel**
Selection of the **best compounds** in the **oxygenated** and **olefin** families	→	**High combustion speed** for optimised cycle yield at very high speeds	→	**Better engine speeds**
Very low **benzene** and **sulphur** content	→	Harmless	→	**No special precautions for use** **ELF 4T-2M respects both the environment and health**

Recommendation

- **ELF Moto 4T-2M** provides significant gains in power and reliability, with no fine-tuning.

- To get the full benefit of this product, the engine mapping must be optimised (Air/Fuel ratio, ignition sequence).
- **ELF Moto 4T-2M** must not be used in 2-stroke engines (risk of breaking engine).

Storage

To preserve its original properties and comply with the Health and Safety rules pertaining to fuels, **ELF Moto 4T-2M** 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

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.

DENSITY (or dimensional weight): Usually measured at 15°C and under 1 bar, given in kg/litre (or in kg/m3), this is the density of one litre (or 1000 litres) of fuel.
A fuel's density increases as its temperature drops.

NET CALORIFIC VALUE (NCV): Calculated per litre or kilogramme, this energy represents the amount of heat released by the combustion of one litre (or kilogramme) of fuel. This value characterizes the fuel's energy content and can be considered on first estimate as the energy supplied to the engine for conversion into engine power.
The higher the fuel NCV, the more the engine is likely to develop power.