



# ELF SPECIAL CROSS

*“Leaded competition fuel for 2-stroke and 4-stroke engine”*



*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 and easy settings adjustments.*

## Use

- **ELF SPECIAL CROSS** is a leaded competition fuel.
- **ELF SPECIAL CROSS** offers high performance due to its oxygenates that improve the filling.
- **ELF SPECIAL CROSS** benefits from a high octane index, providing excellent knocking prevention.
- **ELF SPECIAL CROSS** has a high vapour pressure, which provides better cold starting properties.
- Particularly suited to the following types of competition:
  - Motocross
  - Moto
  - Kart
  - Superkart
  - Speedboat races

## Characteristics

|                          |                 | Typical data |
|--------------------------|-----------------|--------------|
| <b>OCTANE NUMBER</b>     | RON             | 115.0        |
|                          | MON             | 102.0        |
| <b>DENSITY</b>           | kg/l at 15°C    | 0.730        |
| <b>OXYGEN</b>            | % m/m           | 2.2          |
| <b>VAPOUR PRESSURE</b>   | Bar at 37.8°C   | 0.650        |
| <b>DISTILLATION (°C)</b> | % vol. at 70°C  | 35           |
|                          | % vol. at 100°C | 60           |
| <b>BENZENE</b>           | % vol.          | <0.05        |
| <b>LEAD</b>              | g/liter         | 0.5          |

## Properties





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| Fuel characteristics  | → | Technical gains                        | → | Engine benefits   |
|---|---|--|---|---|
| <b>Lead content</b> giving particularly high octane numbers | → | Excellent anti-knocking                | → | <b>Reliability and impeccable performance under severe conditions</b> |
| <b>Balanced distillation curve</b>                          |   | Simplifies preparation of air/fuel mix |   | <b>Better reaction to gas recovery</b>                                |
| Specific oxygen numbers                                     | → | Volumetric efficiency improvement      | → | <b>Spontaneous power gains (without special tuning)</b>               |

## Recommendation

- **ELF SPECIAL CROSS** 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 SPECIAL CROSS** is outside sports regulations and incompatible with most public driving regulations.
- **ELF SPECIAL CROSS** can be used in 2 Strokes mixture with the lubricant **ELF HTX 909** or with **ELF HTX 976**, for even more efficiency.
- If risk of vapor-lock, it is recommended to use **ELF AVGAS 2T 96.7** leaded fuel that has a lower vapour pressure.
- To search for power based on high revs, it is recommended to use **ELF AVGAS 2T 96.7** leaded fuel.



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## Storage

To preserve its original properties and comply with the Health and Safety rules pertaining to fuels, **ELF SPECIAL CROSS** 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 condition, while the MON is representative of an engine running in warm and high speed condition.

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.

**KNOCKING:** Is the result of non controlled fuel combustion in the engine. Sometimes revealed by a characteristic 'pinking' noise, these detonation phenomena often damage the engine. There are two ways to prevent knocking: tuning the ignition timing and/or using a fuel with better anti-knocking characteristics (RON/MON and combustion speed).

**CHARGE COOLING:** The amount of energy needed to vaporize fuel depends on the latent vaporization heat. This phenomenon leads to cooling the intake air which in turn generates internal supercharging.

**VAPOUR PRESSURE:** Usually measured at 37.8°C (Reid vapour pressure), by bar (or Pascals), with its distillation curve, this dimension characterises a fuel's capacity to evaporate. This property comes into play when the petrol is mixed with the air intake and for cold engine starts. If the vapour pressure is too high, it can cause 'vapour lock'.