



## IMPORTANT NOTICE • PLEASE READ

### UNLEADED RACE FUEL WITH ETHANOL

Many States in the USA have recently banned the octane enhancer "MTBE" from unleaded road-car and race-car gasolines. Major oil companies are now replacing the MTBE "oxygenate" with an alternative anti-knock additive known as "ethanol" or "ethyl alcohol". Most of these new gasoline blends end up as 85 to 90% unleaded gasoline and 10 to 15% ethyl alcohol (ethanol).

Europe and Asia are expected to follow suit and popularize their own ethanol oxygenated gasolines.

Unfortunately, rubber fuel-system components such as hoses, pump diaphragms, seals, filters and fuel cell bladders are generally suitable for *either* gasoline *or* alcohol, but *not both*. *Also significant, is the fact that gasoline and alcohol do not mix well, and with exposure to low temperatures, water vapor and gravity, they may experience "phase-separation". That is, the heavier alcohol component may sink to the bottom of a bladder, while the lighter gasoline portion may float to the top.*

It is ATL's considered opinion that elevated alcohol concentrations could damage gasoline-type fuel bladders regardless of their brand. As of this writing, ATL knows of no accidents or leaks caused by ethyl alcohol, but the company is taking a pro-active stance, and you can help:

- 1.) ATL is recommending that, where possible, racers who intend to run unleaded gasoline with ethanol, choose the ATL *Sports Cell* or *Saver Cell* "hard-rubber" bladder over the *Super Cell* "soft-rubber" bladder. Hard-rubber cells exhibit better chemical tolerance of both gasoline and alcohol, but are limited to the FT-3 specification and to 16 standard sizes.
- 2.) ATL further suggests that racers who are required to use soft-rubber bladders such as *Super-Cells* should (a) pre-agitate their fuel to help homogenize the gasoline and ethanol mix and (b) drain the fuel bladder after each race or practice.
- 3.) ATL has petitioned the US producers of race fuel to reconsider ethanol-gasoline blends and to test their gasoline formulations on typical fuel system rubber parts (including bladders) before going to market. You can help by repeating ATL's position to your race fuel supplier.

- 4.) ATL is developing a 2-ply "barrier liner" for FT-3, FT-3.5 and FT-5 soft-rubber *Super Cells*, and we suspect all other fuel cell makers are doing similarly. This new treatment promises to help isolate ethanol from the fabrics, elastomers, sealants, binders and tapes that comprise a fuel cell bladder. Yes, this treatment would, regrettably, add some cost to those *Super Cells* being designed to accept ethanol oxygenates.
- 5.) ATL is already experimenting with new *Super Cell* materials in an effort to enhance alcohol compatibility, but without sacrificing the *Super Cell's* excellent crash resistance, abrasion tolerance, flexibility, gasoline compatibility and modest price.
- 6.) ATL encourages you, the racer or team manager, to inspect your fuel bladder's interior frequently for any sign of fraying, wrinkling or blistering. But, first read ATL Safety Bulletin #DS-381 which is available upon request and will be downloadable shortly.

ATL has also set-up a toll-free contact, Mr. Richard Clark, at **800-526-5330** to receive, inspect and evaluate any competitor's ATL fuel bladder at no charge.

- 7.) Again, you can help; please spread the word about ethanol and rubber components to your fellow racers, and circulate this Bulletin. Also, kindly report any inspection evidence ( para. 6) to the component manufacturer and also to the fuel supplier.

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- 8.) Thank you for your interest, your patience and your vigilance.

*Yours for safer racing . . . .*

*The Folks at ATL Fuel Cells.*