



## SOLID SHEET

### *“Protect Your Investment”*

Contact your rep for more detailed GDI engine deposit information

## GDI INDUCTION CLEANER

### **Safe and effective for GDI and PFI gasoline fueled engines.**

**INTRODUCTION:** GDI (Gasoline Direct Injection) engines inject fuel directly into the combustion chamber versus PFI (Port fuel Injection) engines injecting fuel into the intake runner. Potential GDI benefits include smaller engines providing increased power with reduced fuel consumption and emissions.

**THE CHALLENGE:** With GDI engine introductions by Mercedes in 1954 and Ford in 1968, what delayed GDI engine popularity? An SAE Paper gives the answer, “Early direct injection engines ... suffered from **severe deposit problems**, which could not be overcome at the time.”

Today, engine manufacturers respond to mandated CAFE fuel economy requirements and increased fuel costs by applying GDI technology while addressing deposit issues with complex, expensive systems such as VVT (Variable Valve Timing), complicated Atkinson engine concepts, PCV oil catch pans, etc. But an SAE Paper reports, “... **engine fuel system deposits, including specifically those on intake valves, combustion chamber and injectors are formed in higher amounts in the GDI engine than in the PFI engine.**”

Left unchecked, deposits can accumulate to negate GDI engine benefits and create expensive repair costs.

With more than 20% of new engines using GDI today and projections that GDI is becoming the technology of the future, it's important to address GDI engine deposit problems with GDI Induction Cleaner. An SAE Paper reports:

“Unfortunately, the GDFI [Gasoline Direct Fuel Injection] engine **has no fuel injected onto the surface of the inlet valve. Therefore the cooling and washing effect is missing.** It can therefore be expected to see deposit formation in that area. ... there is a large challenge to reduce the effect such deposits have on not only the volumetric efficiency of the engine but also on swirl or tumble motion of the inlet gases. Changes in swirl or tumble can have a significant impact on GDFI systems that are highly dependent on that gas motion for combustion stability.”

**THE SOLUTION:** True Brand® GDI Induction Cleaner is applied with no dilution by a specifically designed application tool into the intake manifold. Applied correctly, True Brand® GDI Induction Cleaner disperses cleaning vapors and solution throughout the air intake system, especially targeting intake valve deposits left unwashed by GDI engines (see SAE Paper quote above). Two-stage cleaning also reaches into the combustion chamber to dissolve injector tip deposits and knock producing combustion chamber deposits.

### **APPLICATION / DIRECTIONS**

With engine at operating temperature, turned off and exhaust ventilated, 1) Pour contents into canister of Universal Induction Tool with flow-adjustment valve closed. 2) Attach tapered tip of outlet hose to an intake vacuum source close to the throttle body that distributes to all cylinders. 3) Start engine and set idle at approximately 1,500 RPMs. 4) Open flow-adjustment valve SLOWLY to a steady drip (not a stream) in sight glass. 5) When canister is empty, turn induction tool OFF. 6) Run engine 1 – 2 minutes at 1,800 to 2,000 RPMs to purge system. 7) Shut off engine and reattach vacuum hose. 8) If able, drive vehicle for five minutes to remove residual product.

### **FEATURES / BENEFITS**

True Brand® GDI Induction Cleaner provides aggressive two-stage cleaning to the intake system, intake valves, fuel injector tips, combustion chambers and exhaust systems.

Part # T211G

10 fl. oz. (295 ml.) / 24 per case