

INFORMATION BULLETIN



**AUTOMOTIVE
MAINTENANCE &
REPAIR
ASSOCIATION**

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CHEMICAL ENGINE DECARBONIZATION

Chemical Engine Decarbonization is a process utilizing chemicals to remove soft and semi-hardened gum, varnish, resin and carbon deposits from the air/fuel delivery systems and combustion chambers of gasoline internal combustion engines, providing benefits that may include improved fuel economy, performance and drivability and reduced emissions. This process is performed to reduce or remove deposits, preferably prior to deposit accumulation and hardening which may require costly mechanical deposit removal or component replacement.

Numerous SAE Papers published by engine and component manufacturers, fuel and fuel component producers, testing & research organizations and institutions address carbon deposit problems in today's engines worldwide; documenting the broad scope of air/fuel delivery systems and combustion chamber deposit issues degrading "all aspects" of internal combustion engine operation, demonstrating the benefits of regularly scheduled chemical deposit removal service. The following SAE Paper (961099) quote summarizes well: "Formation of intake valve deposits (IVD) can lead to degradation in drivability, tailpipe emissions and engine performance. With ever increasing consumer and regulatory demands, IVD must be controlled during the entire life of the engine."

The Federal Clean Air Act mandated the addition of deposit-control additives in commercial gasolines to keep-clean new engines and to remove deposits from deposited engines. However, the automotive service industry continues to encounter deposits in engines rendered increasingly sensitive to deposit problems by precision tuning and close-tolerance components, causing ongoing customer complaints and requiring expensive repairs.

"With the evolution of modern high-technology engines, the need for excellent deposit control throughout the induction system has become even more important." (SAE Paper 861534) "The problem usually occurs in cars that have run for 5000 to 10000 miles on mild – usually urban – driving cycles ... Small flakes of combustion chamber deposits can break loose and get trapped between the exhaust valve and seat... eventually causing a loss of compression in the cylinder.

A chemical engine decarbonization service is typically far less expensive to the consumer than mechanical deposit removal or component replacement.

Chemical Engine Decarbonization services can remove deposits from fuel injectors, intake manifolds and valves, combustion chambers and other engine components. Removal of these deposits can restore air and fuel flow to like-new condition.

- ***Regular/Periodic Chemical Engine Decarbonization service may be suggested to remove deposits; (preferably) prior to deposit accumulation and hardening, which may require costly mechanical deposit removal or component replacement.***
- ***Chemical Engine Decarbonization service may be suggested on a scheduled (time/mileage) basis if recommended by the OEM***
- ***Chemical Engine Decarbonization service may be suggested upon specific consumer request***

MAP hopes this information will be used when counseling consumers about suggested services, so motorists will recognize the importance of 'preventive maintenance' -- and act before component failure occurs.



**MOTORIST
ASSURANCE
PROGRAM**

STANDARDS FOR AUTOMOTIVE REPAIR

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*The Motorist Assurance Program is a consumer outreach
program of the Automobile Maintenance & Repair Association*