Topic:	**C R C P O R T F U E L I N J E C T O R T E S T**
Point of Contact:	Karen Kohl Phone: (210) 522-2071 Fax: (210) 522-5592
Test Objective:	The objective of this test is to evaluate fouling tendencies of gasolines and the effects of additives by simulating the port fuel injector vehicle test.
Apparatus:	For this test, a port fuel injector bench rig is used.
Test Procedure:	1. The test cycle consists of: ● 15 seconds of spray ● 45 minutes of hot soak at 161°C ● 10 minutes cool down 2. Repeat for 44 test cycles.
Fuel Requirement:	The fuel requirement for this test is 2 gallons of fuel.
Duration:	The test duration is 44 hours.
Test Results:	Flow volume change is noted.
Note:	

Topic:	**C U M M I N S L - 1 0 I N J E C T O R D E P O S I T I N G**
Point of Contact:	Bill Buscher Phone: (210) 522-6802 Fax: (210) 681-7523
Test Objective:	The objective of this test is to determine the effect of diesel fuel and/or diesel fuel additives on the generation, prevention, and clean up of deposits inside open-nozzle unit injectors.
Apparatus:	For this test, a pair of 1988-1989 Cummins L-10, six-cylinder, in-line, turbo-charged and after-cooled, direct injection diesel engines is coupled in tandem are used.
Test Procedure:	The two engines are coupled in a tandem setup where one engine drives the other, and in turn is driven at 2300 rpm in 15-second cycles for 125 hours.
Fuel Requirement:	The fuel requirement for this test is approximately 450 gallons.
Duration:	The duration of this test is 125 hours.
Test Results:	The following are noted at the end of this test: ● Fuel injector flow change ● Fuel injector plunger deposits (PASS/FAIL) Superior neat fuels or fuels with additives will demonstrate 5.0 percent or less average flow loss and 10.0 or less average deposit rating.
Note:	For additional information, see Cummins Material Specification 60032.

Topic:	**P O R T F U E L I N J E C T O R D E P O S I T T E S T I N G**
Point of Contact:	Kevin Brunner Phone: (210) 522-3579 Fax: (210) 681-5344
Test Objective:	The objective of this test is to evaluate the tendency of a gasoline to clean up or keep the port fuel injectors clean.
Vehicle:	A 1985-87 Chrysler 2.2-L turbocharged engine with an automatic transmission is used for this test.
Test Procedure:	The procedure for this test is as follows: 1. PFI "keep-clean" and "clean-up" driving cycle: ● 55 mph for 15 minutes ● Engine-off soak for 45 minutes 2a. Keep-clean procedure: Flow test every 1,000 miles for 10,000 miles 2b. Dirty-up/Cleanup procedure: For dirty-up phase, run 15/45 cycle, and flow test until at least one injector is fouled to greater than 10 percent 3. For clean-up phase, run 15/45 cycle, and flow test every 1,000 miles until the previously dirtied injector fouling is 5 percent or less
Fuel Requirement:	The fuel requirement for this test is 500 gallons.
Duration:	The duration of this test is 40 days for PFI keep-clean test and usually 30 days for clean-up test.
Test Results:	(PASS/FAIL) Keep-Clean is a PASS if the fouling of all injectors remains 5 percent or less for the entire 10,000-mile test. Clean-up is a PASS when the fouling of all four injectors becomes 5 percent or less for the duration of the test.
Note:	This test is run following ASTM Method D-5598