

NATEF TASK SHEET - Engine A.1 D.7 P-1

CS1A : CHECK CONDITION AND CONCENTRATION OF COOLANT

Student: _____ Date: _____ Period: _____

Vehicle 1: VIN: _____ Year: _____ Make: _____ Model: _____

Vehicle 2: VIN: _____ Year: _____ Make: _____ Model: _____

OBJECTIVE: Student will check engine coolant and determine concentration, condition, boiling and freezing points, and make recommendations needed to bring coolant up to factory specifications.

MATERIALS:

1. **EYE PROTECTION**
2. Coolant Tester
3. Two Vehicles



PROCEDURE: *WATCH POWER POINT & VIDEO CS1A: WEAR EYE PROTECTION!*

With engine cool, locate and slowly remove radiator cap. Using coolant tester, draw out enough coolant to fill tester to top fill line. While holding vertically, check readings on both sides of tester and note boiling point and freezing point and record below. Look up the Boiling Point and Freezing Point of a 50/50 mix of antifreeze and water. **COMPARE WITH YOUR READINGS.** Look inside of radiator neck and at coolant in tester and observe appearance.



COOLANT 50 / 50 Mix: **BOILING POINT** _____ **F** **FREEZING POINT** _____ **F**

VEHICLE 1 COOLANT: **BOILING POINT** _____ **F** **FREEZING POINT** _____ **F**

VEHICLE 2 COOLANT: **BOILING POINT** _____ **F** **FREEZING POINT** _____ **F**

COOLANT APPEARANCE: VEHICLE 1 _____ VEHICLE 2 _____
(Color? Clean? Dirty? Contaminated? All water? etc...)

Recommendation: VEHICLE 1: Flush System _____ No Service Required _____

Recommendation: VEHICLE 2: Flush System _____ No Service Required _____

(Hint: Compare boiling and freezing points to the 50/50 mix)


EXPLAIN HOW A COOLANT TESTER WORKS: _____

WHAT SCIENTIFIC PRINCIPLE IS UTILIZED BY THE TESTER? _____

LOOK UP COOLING SYSTEM CAPACITY: VEHICLE 1 _____ QTS. VEHICLE 2 _____ QTS.

HOW MANY QUARTS OF PURE COOLANT DO YOU NEED TO MAKE A 50% COOLANT/50% WATER MIXTURE FOR EACH VEHICLE? VEHICLE 1 _____ QTS. VEHICLE 2 _____ QTS.

INSTRUCTORS EVALUATION

	LEVEL OF SKILL ATTAINED	Initial	OVERALL SKILL EVALUATION	Points
	DEMONSTRATES MASTERY (5)		DOCUMENTATION COMPLETENESS (1)	
	PERFORMS SATISFACTORILY (4)		SAFETY COMPLIANCE (1)	
	CAPABLE, NEEDS PRACTICE (3)		WORK PROFESSIONALISM (3)	
	ASSISTED IN PERFORMING (2)		LEVEL OF SKILL ATTAINED (1-5)	
	EXPOSURE, OBSERVATION (1)		TOTAL SCORE	
INSTRUCTOR'S SIGNATURE: _____				