



# **SNS COLLEGE OF TECHNOLOGY**

**(An Autonomous Institution)**

**COIMBATORE-35.**



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

## **DEPARTMENT OF AUTOMOBILE ENGINEERING**

**COURSE NAME : 19AUB301 – AUTOMOTIVE FUELS AND LUBRICANTS**

**III YEAR / V SEMESTER**

**Unit 4 – Properties and Testing of Fuels**

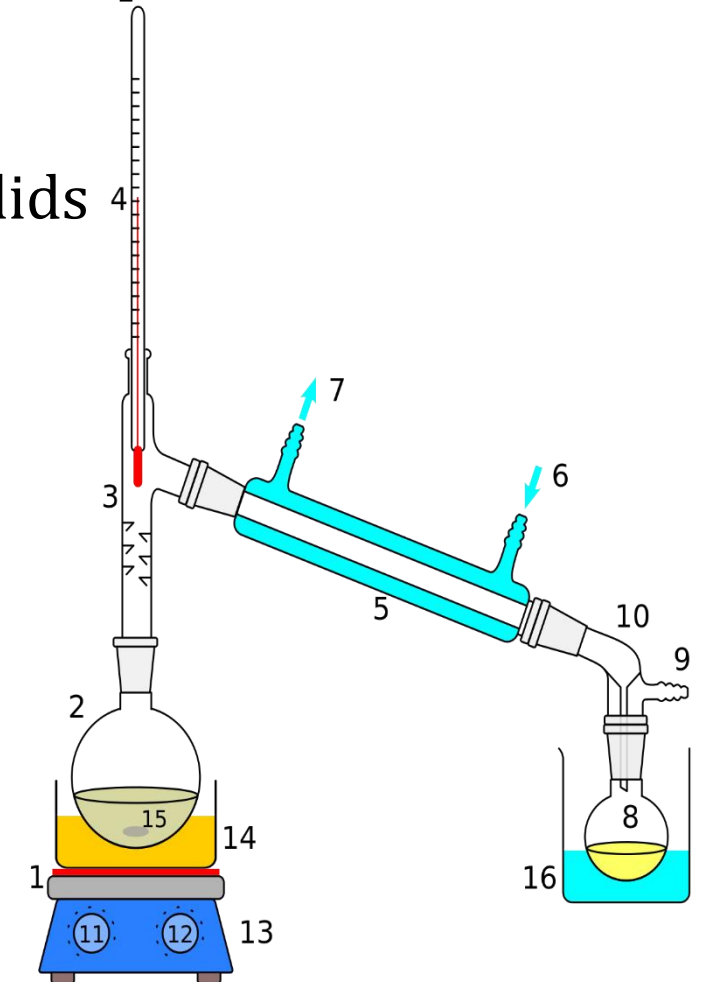
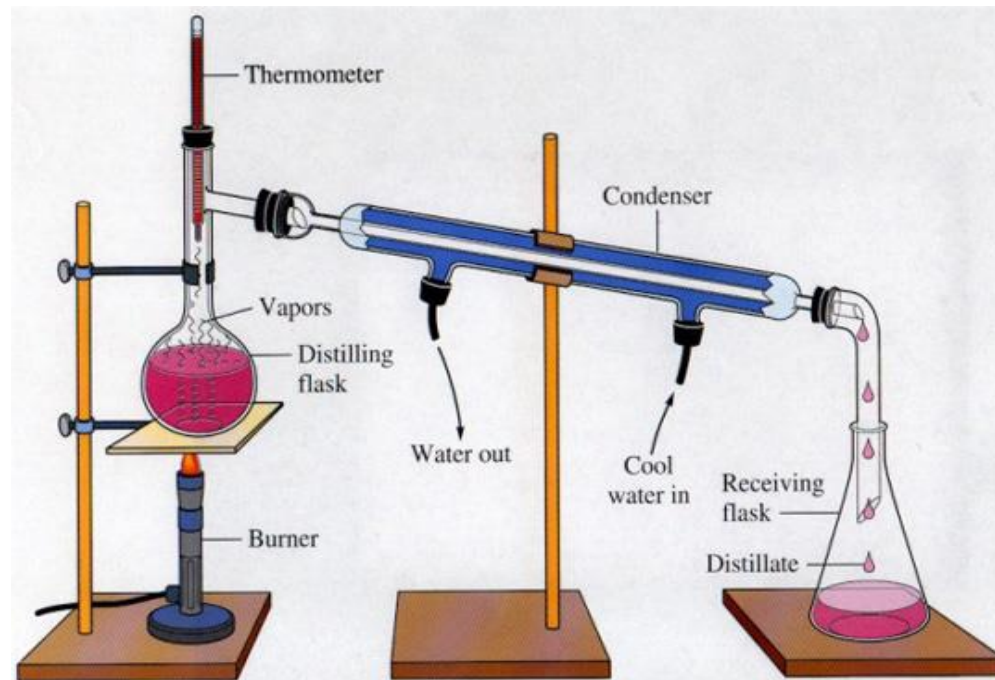
**Topic : Distillation, Vapour Pressure, Spontaneous Ignition Temperature,  
Viscosity**



# DISTILLATION

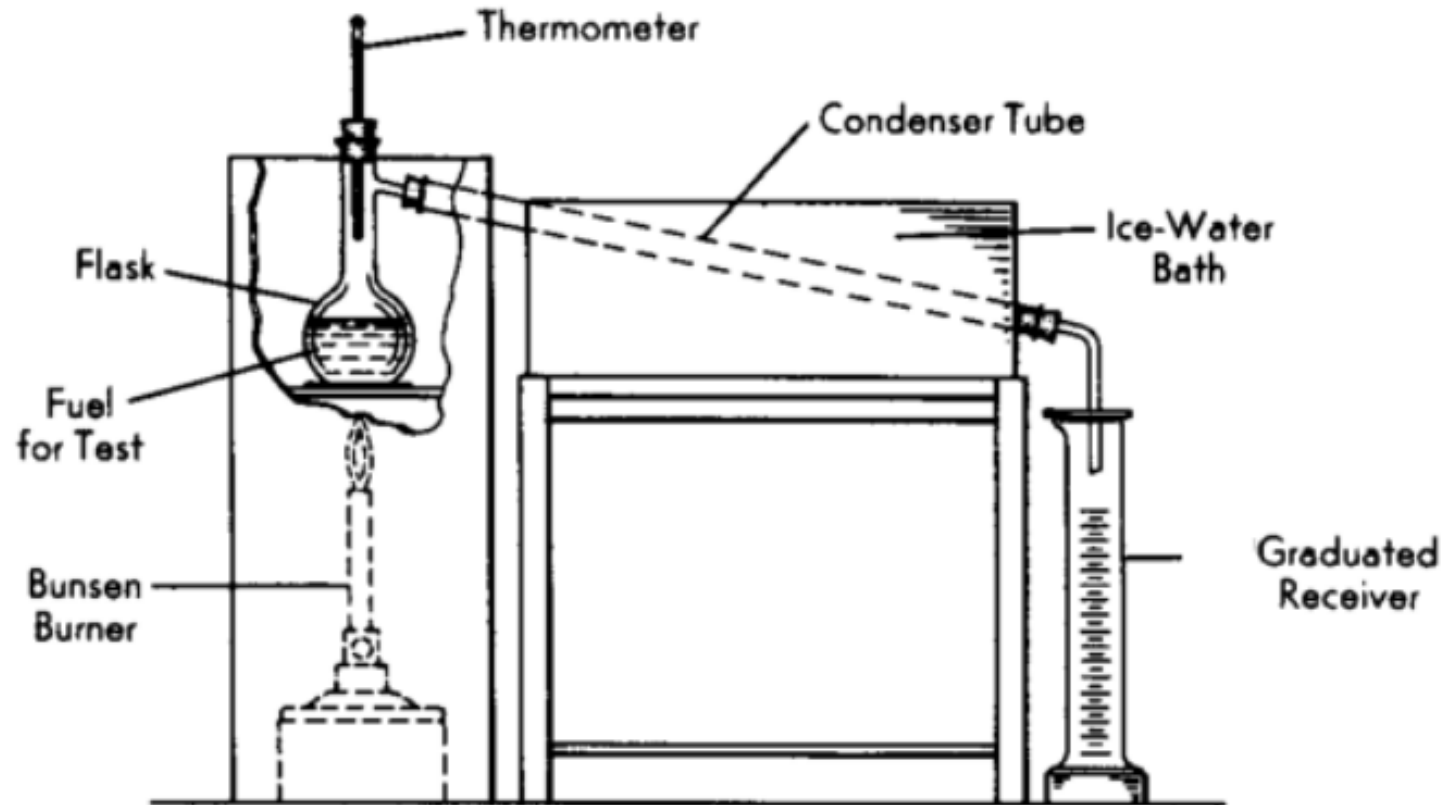


- Distillation process involving the conversion of a liquid into vapour that is subsequently condensed back to liquid form.
- Distillation is used to separate liquids from nonvolatile solids





# ASTM DISTILLATION TEST





# VAPOUR PRESSURE



- Vapour pressure is a **measure of the tendency of a material to change into the gaseous or vapour state.**
- Vapour pressure increases with increase in temperature.
- The boiling point is the temperature at which the vapour pressure of the surface of the liquid will be equal to the atmospheric pressure.



# REID VAPOUR TEST





# SPONTANEOUS IGNITION TEMPERATURE



- The lowest temperature of a substance where it will ignite itself with no spark or flame present is called Spontaneous Ignition Temperature.
- At the auto-ignition temperature, the temperature alone provides sufficient energy to induce combustion.
- As the oxygen content of the ambient atmosphere increases, the auto-ignition temperature will decrease
- Increased pressure also decreases the temperature at which auto ignition can take place.



# VISCOSITY



- Viscosity is a measure of a fluid's resistance to flow.
- It describes the internal friction of a moving fluid.
- A fluid with large viscosity resists motion because its molecular makeup gives it a lot of internal friction.
- A fluid with low viscosity flows easily because its molecular makeup results in very little friction when it is in motion.





# TESTING OF VISCOSITY







## REFERENCE



- <http://chemcases.com/fuels/fuels-a.htm>



THANK YOU !!!