



ESDU SPA-M4-3

Characterisation of asphaltenes and deposited foulants

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Characterisation of Asphaltenes and Deposited Foulants

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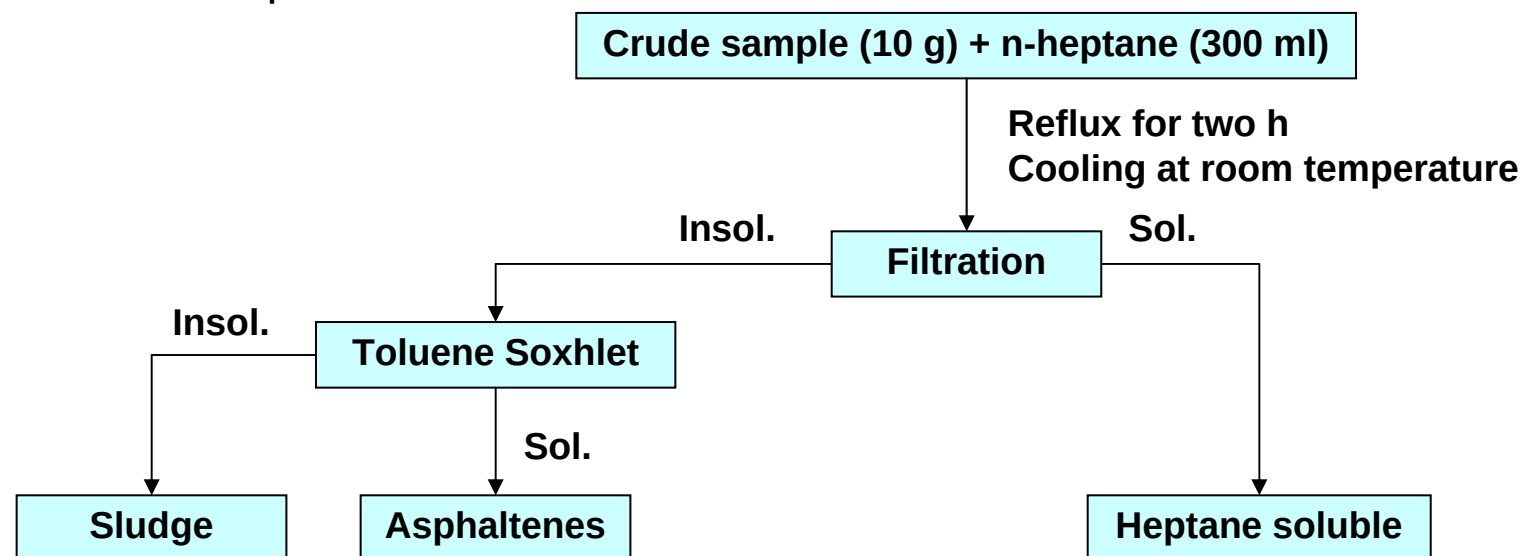
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Objectives

- To study the changes in chemical structure leading to deposition.
 - ✓ Develop a characterisation procedure of asphaltenes and deposits.
- To investigate the effect of time-temperature history on the composition of the sample.

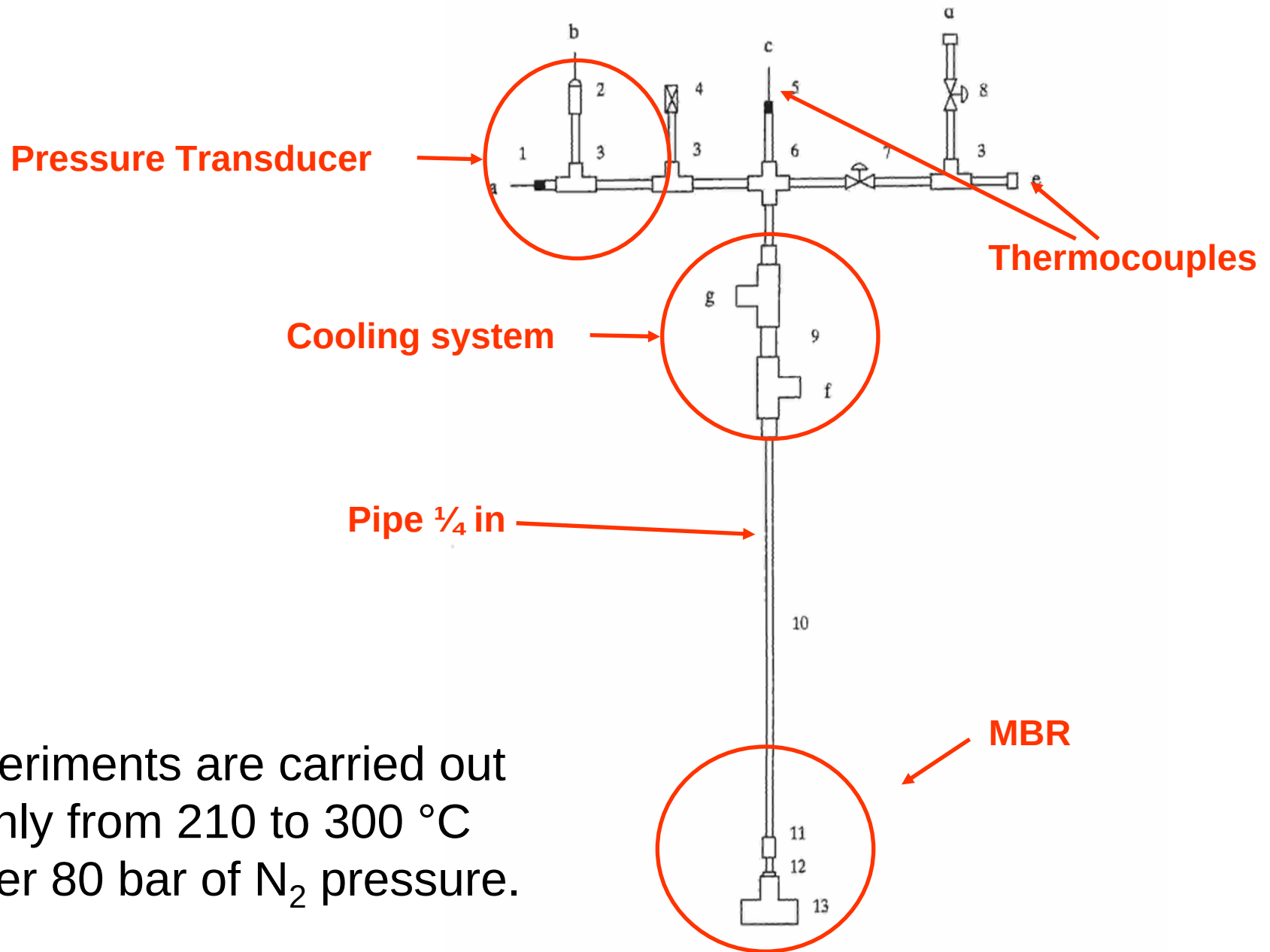
Characterisation of initial samples

ASTM standard procedure



Crude	API gravity	Sulphur content (% wt)	Asphaltenes (% wt)	Viscosity @ 80 (cst)	Viscosity @ 100 (cst)
North Sea	~ 50	nn	2.67	nn	nn
Crude B	24.43	3.62	~ 6	8.6	5.4
Crude D	46.27	0.03	~ 0.05	1.1	0.8

Micro-bomb reactor (MBR)



Experiments are carried out mainly from 210 to 300 °C under 80 bar of N₂ pressure.

		Temperature (Celsius)			
		390	210		
Pressure (bar)	80	X		6:30	Residence time (hours)
		X	X	5	
		X	X	4	
	↓			6:30	
				5	
				4	
				6:30	
				5	
				4	
				6:30	
				5	
				4	
40			6:30		
			5		
			4		

Characterisation of samples

