

Water Separability or Demulsibility , ASTM D-1401

The ability of lubricating oil to separate water and resist emulsion is an important performance characteristic for application involving water contamination and turbulence .



Poor water separability of lubricating oils can lead to

- Rusting & corrosion
- Possible cavitation
- Premature lubricant degradation
- Mechanical failure
- Etc

Water Separation Ability by Demulsibility Characteristic of Lubricant ,Test Method ASTM D1401

Objective:

To determine the water separation characteristics of the lubricant

Apparatus and Procedure:

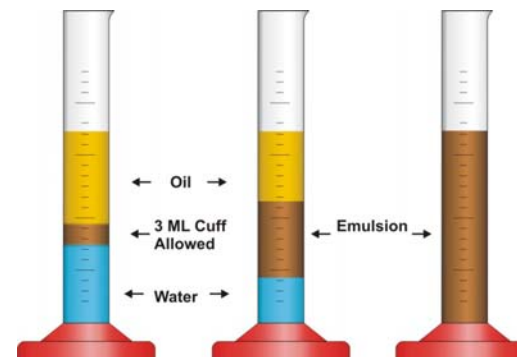
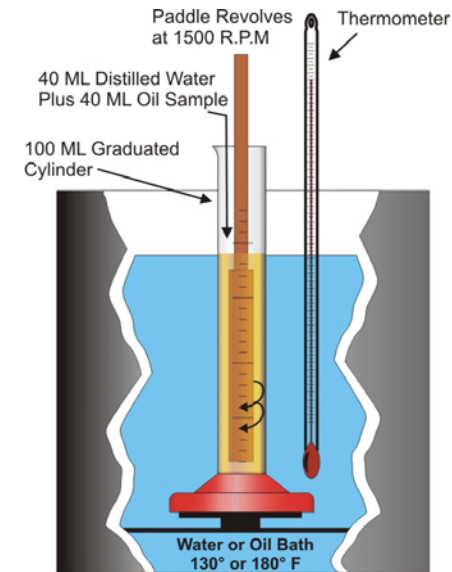
40 ml of test oil is heated to test temperature of 130°F (or 180°F) as 40 ml of distilled water is gradually added to a graduated cylinder containing the mixture. Once the contents reach test temperature, a stir rod is lowered into the cylinder to stir the mixture at 1,500 rpm for 5 minutes. At constant temperature, the contents are left undisturbed, the separation of the oil and water is recorded at one minute intervals for the first ten minutes, then at 15, 20, 30, 40, 50 and 60 minutes.

Reported results:

The three measurements for oil/water/emulsion (cuff or collar) are presented in that order and are separated by forward slashes. Test minutes, are shown in parenthesis, i.e., 40/40/0 (15).

Significance:

This test method provides a guide for determining the water separation characteristics for oils. This test was developed specifically for steam turbine oils having viscosities of 32 to 150 cSt at 40°C. This is the method recommended for use with synthetic oils.



Water Separability –test report

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Client Code : UN10
 Client Name : UN10A
 Address : UN10A
 Tel Code : 01000
 Lab Capacity : 00000

Recommendation and notes

Recommendation : **Water Separability (Demulsibility)**
 Filterability : **FILTERABLE**

Water Separability Characteristic of demulsibility Test Method : D-1401

Test	Unit	Current Sample	Reference Range	Acceptance	Rejection
Water Separability	oil-water-emulsion (mins)			Yes	No
Volume Emulsion Layer in ml after				Yes	No
10 minutes					
20 minutes					
30 minutes					

Observations In House Method

Test	Unit	Current Sample	Reference Range	Acceptance	Rejection
Stage 1 - 10 min Phase	Determination of the quantity of the emulsion for 10 min (ml)		0.2	0	1.2
Stage 2 - 20 min Phase	Determination of the quantity of the emulsion for 20 min (ml)		0	0	0
Stage 3 - 30 min Phase	Determination of the quantity of the emulsion for 30 min (ml)		0	0	0

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Water Separability Characteristics of Demulsibility			
Test	Unit	Current Sample	
Water Separability	oil-water-emulsion (mins)		
		see below details	
	volume OIL layer in ml		
	volume WATER layer in ml		
	volume EMULSION layer in ml		
Separation in minutes			
Volume Emulsion Layer in ml after			
10 minutes	volume emulsion in ml		
20 minutes	volume emulsion in ml		
30 minutes	volume emulsion in ml		