

Seta Cold Filter Blocking Tendency

IP 618; BS EN 590, National Annex

The Seta-CFBT is a small scale laboratory analyser which measures the Cold Filter Blocking Tendency (CFBT) of diesel and gas oils containing biodiesel, also known as FAME (Fatty Acid Methyl Ester), at temperatures between ambient and -5°C. The Seta-CFBT predicts how fuels may behave at low ambient temperatures.

Key Features

- Fully compliant with national annex to BS EN 590 for reporting IP 618 CFBT (-1°C)
- IP 387/ASTM D2068 for measuring both FBT and CFBT
- Portable design for FBT of Diesel Fuel under cold conditions
- Easy to use, fully automated operation, fixed and programmable temperatures
- Touch screen colour display
- Typical 20 minute test time for 2 temperatures
- Automatic calculation of CFBT and CSCFBT
- Temperature stability better than 0.5°C
- Simple calibration/verification of flow, pressure & temperature
- Supports IP address printer via Ethernet port
- User friendly interface with LIMs download option

Principles of Operation

The sample is prepared in accordance with test method IP 618 and placed into the inlet beaker, which contains a magnetic stirrer. A specially designed thermally encapsulated filter is then inserted into the analyser ready for the operator to enter their name, sample ID and press start. The operator inserts test and bypass filters into the instrument, enters test data and starts the test.

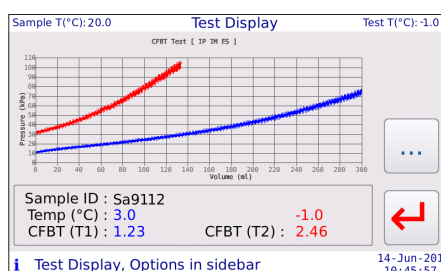
The instrument cools to +3°C +/-0.5°C and is purged via the bypass filter. After the purge step, the test begins and flow is diverted through the test filter. The control system monitors the pressure upstream of the filter. The test ends when either:

- The pressure upstream of the filter reaches 105 kPa
- The pump has delivered 300ml fuel

The operator is prompted to insert a new test filter and the CFBT cools to -1°C for the second test. As for the first test, the test ends when either of the above criteria is met. The operator can also select other test temperatures in the range -5 to 40°C.

Test Results

Results for CFBT (3) and CFBT (-1) are presented on the screen with a graph of pressure versus volume.



> Please note, the apparatus pictured may differ from that sold

Cold Filter Blocking Tendency of Diesel

In Europe, up to 7% FAME or biodiesel is commonly added to refined diesel to meet environmental targets for BS EN 590 diesel. When this blending practice first started, there were significant numbers of vehicle breakdowns due to fuel line filters blocking at low temperatures. Fuel delivery systems were also affected.

Subsequent analysis of the deposits on blocked filters showed high levels of saturated monoglycerides (SMG) and/or sterol glucosides (SG), both of which are present in FAME. These components can form precipitates at low temperatures (but above the cloud point temperature of the fuel) which do not re-dissolve when the fuel warms up.

Certain waxy gas oils/diesels that do not contain FAME can also exhibit a cold filter blocking tendency if the dosing of fuel additives is incorrect.

Industry Specifications - IP 618

The UK Energy Institute SC B-5 panel has developed test method IP 618 for measuring the cold filter blocking tendency of fuels at +3 and -1°C. The test simulates typical winter operating conditions.

The CFBT test is intended to identify potential filter blocking issues with diesel fuels in challenging winter conditions. Such issues may be due to poorly blended cold flow additive, low level polyethylene, the presence of SMG, SG and water, and ineffective additive chemistry.

The Seta CFBT instrument conforms with IP 618.

Technical Specifications	
Seta part number	91670-2
Pump rate	20 ml/min, adjustable in software
Sample size	750ml (350ml required per temperature measured)
Test temperature range	-5°C to +40°C
Set temperatures	-1°C to +3°C
Temperature stability	Better than 0.5°C
Voltage	82-262V, 45-65Hz, autosensing universal power supply
Current (MAX)	3.5A
Display	Widescreen 7" TFT LCD 800 x 480 resolution
Size (H x W x D)	355 x 520 x 540 mm
Weight	15 kg