

# QUALITY CONTROL PRODUCTS

# Mobile Lab by Schroeder Biofuels



Mobile Lab by Schroeder Biofuels consists of simple, cost-effective on-site fuel testing kits. Schroeder Biofuels takes the guess work out of fuel quality verification with our family to easy-to-use test kits that measure biodiesel fuel quality and biodiesel fraction (percent biodiesel). Based upon widely recognized

ASTM standards and Engine Manufacturers Association (EMA) recommendations, tests are simple enough to be performed by anyone. The results are easy to read and are available in minutes. When used on a regular basis as part of your organization's fuel quality assurance program, these tests can identify fuel-related problems before they impact your fleet.



Test for acid number in excess of 0.5mgKOH/g fuel in BioDiesel Fuel (B100)

Part Number: BMLTK-AN.B10012

What's included: 12 test

**Acid  
Number for  
B100  
Biodiesel**



Test for acid number in excess of 0.3mgKOH/g fuel in Diesel/ BioDiesel Blends

Part Number: BMLTK-AN.BB12

What's included: 12 test

**Acid  
Number for  
Biodiesel  
Blends**



Detection kit for bacterial and fungal contamination in Diesel and BioDiesel Fuel (6 tests)

Part Number: BMLTK-MIC6

What's included: 6 test

**Microbial  
Test**

# Mobile Lab by Schroeder Biofuels

**Percent Biodiesel for B20**



Tests for diesel/biodiesel blends in excess of 30% (B30)

**Part Number: BMLTK-B2012**

**What's Included: 12 tests**

**Percent Biodiesel for B5**



Tests for diesel/biodiesel blends in excess of 10% (B10)

**Part Number: BMLTK-B512**

**What's Included: 12 tests**

**Total Glycerin**



Tests for presence of glycerin in B100 and BioDiesel/Diesel Blends

**Part Number: BMLTK-TG6**

**What's Included: 12 tests**

**Water & Visual Appearance**



Visual clarity and water detection for Diesel/BioDiesel fuel

**Part Number: BMLTK-H20VC12**

**What's Included: 12 tests**

# BioDiesel Mobile Lab Test Kits

The SchroederBiofuels' BioDiesel Mobile Lab-Patch kit is an essential item to include in quality control for biodiesel production. Irrespective of the purification method employed, these kits will alert you to possible shortcomings in your production and purification processes.

Biodiesel production is a game of infinite variables. So too is biodiesel purification. A small upstream problem, if undetected, could have disastrous consequences downstream. By analyzing fluid samples at various stages of the production and purification process, producers can now understand the constituent composition of all contaminants still present in the fuel.

Once the contaminants have been identified, it is then that the source of the contaminant can be found and remedied. Contaminants could include soap, remaining production residues and possibly purification media (if incorrect filtration processes have been used). The kit enables instant visual analysis through an optical microscope of the major types of fuel contaminants.



Part Code	Description
BML-PK	BioDiesel Mobile Lab - Patch Test Kit

**BioDiesel  
Mobile Lab  
Patch Test  
Kit**



Part Code	Description
BML-SK	BioDiesel Mobile Lab - Spec Kit

**BioDiesel  
Spec Kit**



The Pressure Test Kits are available in four configurations as shown in Appendix B along with components. Highest quality components were selected for versatility and long service life.

**Schroeder  
Pressure  
Test Kit**

# TestMate® Water Sensor for BioDiesel

TWS



The TWS-C-E is a water and temperature sensor for the continuous monitoring of ester based fuels (like biodiesel) - accurately, continuously and on line. It measures the water content relative to the saturation concentration (saturation point) and outputs the degree of saturation (saturation level) in the range of 0 to 100% as a 4-20 mA signal. A reading of 0% would indicate the absence of water, while a reading of 100% would indicate that a fluid is saturated with water.

## Specifications

<b>Measuring Range (Saturation level):</b>	0 to 100%
<b>Operating pressure:</b>	Max. 725 psi, / max. 50 bar
<b>Overload pressure:</b>	Max. 9135 psi / max. 630 bar
<b>Parts in contact with media:</b>	stainless steel, seal viton or EPDM, ceramic with evaporated metal
<b>Output signal:</b>	4 to 20 mA
<b>Calibrated accuracy:</b>	≤± 2 % FS max.
<b>Accuracy in media measurements:</b>	≤± 3% FS typ.
<b>Pressure-dependent:</b>	+ 0.02% FS/bar
<b>Output signal:</b>	4 to 20 mA
<b>Accuracy:</b>	* ± 2% FS max.
<b>Nominal temperature range:</b>	32° to 194° F (0° to 90°C)
<b>Ambient Temperature:</b>	-40° to 212° F (-40° to 100°C)
<b>Fluid temperature range:</b>	-40° to 257° F (-40° to 100° C)
<b>Viscosity range:</b>	32 to 23175 SUS
<b>Flow velocity:</b>	< 16 ft/s
<b>Media tolerance:</b>	mineral oil based fluids, natural and synthetic esters
<b>CE mark:</b>	EN 50081-1, EN 50081-2, EN 50082-1, EN 61000-6-2
<b>Type of Protection acc. DIN 40050:</b>	IP 67
<b>Supply voltage:</b>	12 to 32 V DC
<b>Residual ripple supply voltage:</b>	≤ 5%
<b>Mechanical connection:</b>	G3/8A DIN 3852
<b>Torque rating:</b>	18.5 ft-lbs.
<b>Electrical connection:</b>	M12x1, 5 pole (DIN VDE 0627)
	Pin 1: +Ub Pin 2: Signal saturation level Pin 3: OV / GND Pin 4: Signal temperature Pin 5: not connected

## Model Code

### How to Build a Valid Model Number for a Schroeder TWS:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
TWS				

**Example:** NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	
TWS	C	E	0	0	= TWSCE00

### BOX 1

Model
TWS

### BOX 2

Serial
C series C

### BOX 3

Medium
M Mineral oil
E Esters

### BOX 4

Signal Technology
Analog output 1
0 saturation level signal 4 to 20 mA

### BOX 5

Signal Technology
Analog output 1
0 temperature signal 4 to 20 mA

# TestMate® Contamination Monitor for BioDiesel



Don't let the size of Schroeder's TestMate Contamination Monitor (TCM) fool you! It is among the newest generation of particle monitors that continuously measure solid contamination in fluid. Enclosed in a 4 inch diameter case, the TCM utilizes an optical sensor and measures particles in four sizes: >4, >6, >14 and >21 microns.

TCM

## Specifications

<b>Measuring Range:</b>	Display ISO ranges between 28/27/26 and 9/8/7 Calibration within the range ISO 13/11/10 to 23/21/18
<b>Self-Diagnosis:</b>	Continuously with error indication via status LED
<b>Connections:</b>	Inlet: ISO 228 G1/4 Threaded Outlet: ISO 228 G1/4 Threaded
<b>Sensor Flow Rate:</b>	30 to 300 ml/min
<b>Permissible Viscosity Range:</b>	0 to 4635 SUS (1 to 1,000 cSt)
<b>Fluid Temperature Range:</b>	32° to 185°F (0° to 85°C)
<b>Power Supply Voltage:</b>	9 to 36 VDC residual ripple <10%
<b>Power Consumption:</b>	3 WATT max.
<b>Electrical Outputs:</b>	4 to 20mA Analog; 0 to 10V Analog (option) RS485 for communication with CoCos 1000 software
<b>Electrical Specifications:</b>	4 to 20mA Analog output (max. burden 300Ω); 0 to 10 V output (min. load resistor 820Ω) Limit switching output (Power MOSFET): max. current 1.5A
<b>Ambient Temperature Range:</b>	-22° to 176° F (-30° to 80° C)
<b>Storage Temperature Range:</b>	-40° to 176° F (-40° to 80° C)
<b>Relative Humidity:</b>	max. 95%, non-condensing
<b>Seal Material:</b>	Mineral Oil: FPM; Phosphate Ester: EPDM, Biofuels: Viton®
<b>Electrical Safety Class:</b>	III (low voltage protection)
<b>IP Class:</b>	IP67
<b>Weight:</b>	2.9 lbs (1.3 kg)

### How to Build a Valid Model Number for a Schroeder TCM:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
TCM				

**Example:** NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	
TCM	D	H	A		= TCMDHA

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
<b>Model</b>	<b>Display</b>	<b>Fluid</b>	<b>Signal Technology</b>	<b>Option</b>
TCM	D Display X no display	H Viton® Seals	A 4-20 mA V 0-10 V	Omit Std in-line M Flange

### FEATURES

- Manifold will have pressure compensated flow control and orifices for flow conditioning
- Allows installation in only minutes
- Compensates for varying pressures, flow rate, and viscosities
- Customer to supply power (9-36 VDC) and pressure (200 psi (13.8 bar) or greater)



Flow Conditioning  
Manifold  
BTCM-FC

Model Code

# TestMate® Accessories

Flow Conditioning  
Manifold with  
Water Sensor



- Manifold has pressure compensated flow control and orifices for flow conditioning.
- Customer only needs to supply power (9-36 VDC) and pressure 200 psi or greater
- Allows installation in only minutes
- Compensates for varying pressures, flow rate, and viscosities
- Manifold has water sensor TWS-C installed for measurement of percentage saturation

Part Number: **BTCM-FC-W**

What's Included: TCM-D-A, manifold, TCM-C-3M, 2 pcs. 4mm 1620 microflex hose (p/n SM4-1620-035), TWS-C, TWS Power & Communication cable and 2 test points (p/n SP1620UN716VM) for installation into customer's system.

Communication  
Kit



- Enables the user transfer data from TCM to PC
- Enables user to change TCM settings
- Enables user to have real time monitoring & data storage

Part Number: **TCM-RS485/USB**

What's Included: Converter box, 115 VAC to 24 VDC adapter, USB driver, CoCoS 1000 software, communication & power cables, case

Power and  
Communication  
Cable



- Cable includes leads for power & communication

Part Number: **TCM-C-3M**

What's Included: 9.8 ft.(3 m) length cable with M12x8 pin electrical connector on one end and flying leads on the other.

Power Adapter



- Allows user to connect TCM to standard wall outlet

Part Number: **TCM-PS**

What's Included: 115 VAC to 24 VDC power adapter

# Quality Control Accessories

This connector is required to interface with the TWS

Part Number: **VDP-177**

What's Included: (5 pole) with 5m cable

**Electrical  
Connection  
TWS  
Accessory**



The SMART Kit Contamination monitor makes it easy to continuously monitor ISO levels in real time, showing you exactly how dirty your fuel is. This kit can be added as a retrofit to any of Schroeder's Standard Filtration Carts (MFS/MFD), Kidney Loops (KLS/KLD), Final Polishing Units (FPU/FPH) or Skids without any additional modifications. Most carts and Kidney Loops can also be ordered with the SMART Kit included.

The SMART Kit makes using our contamination monitor easy by offering plug and play installation with all the features and benefits of our TCM.

Contamination Readout: ISO 4406:1999 or SAE AS4059 (D)

Maximum viscosity: 1,000 SUS

Compatibility: All petroleum based hydraulic fluids and polished biodiesel

Weight: 18.1 lbs

Power Requirement: 115VAC

Inlet pressure: <7 psi

Operating Temperature: -20° to 150° F ( -29° to 65° C)

Part Number: **BSMK**

What's Included: TCM

SMART Kit



Immediate pH testing is available in brilliant, long lasting colors. These direct-reading pH papers give a simple, single color match for all pH values in distinct, bright color separations. 100 dip sticks are packaged in a clear plastic case with a color chart.

Part Number: **BML-PH**

What's Included: 100 dip sticks, pH 1-14

**pH Test  
Strips**



Ensuring adequate quality base feed stock is the key to successful biodiesel production. To determine the percentage of FFA's in your feedstock, simply dip the test strip into your oil and submerge for 2 seconds. Remove the strip and count the number of bands without any blue color.

Part Number: **BML-FFA**

What's Included: Box of 40 FFA percentage level indicator strips (>2% to >7%)

**FFA Test  
Strips**