

Oxidation Stability (RSSOT) - PetroOXY "Active Cool"

ASTM D 7525 (Gasoline), ASTM D 7545 (Diesel, Biodiesel, FAME)

Alternative procedure to: ASTM D 525, ASTM D 942, ASTM D 943, ASTM D 2272, ASTM D 2274, ASTM D 5304, ASTM D 7525, ASTM D 7545, ISO 4263, ISO 7536, ISO 12205, DIN 51808, EN 14112, EN 15751, IP 40, IP 142, IP 229, IP 388

Product group(s): Fuel, Grease, Oil

User group(s): Biodiesel, Diesel, Engine Oil, Fuel, Fuel Oil, Gas Oil, Gasoline, Gear Oil, Grease, Hydraulic Oil, Insulating Oil, Lube Oil, Lubricant, Lubricating Grease, Lubricating Oil, Mineral Oil, Motor Fuel, Motor Gasoline, Motor Oil, Oil, Spark Ignition Fuel

Scope: The **Rapid Small Scale Oxidation Test (RSSOT)** is a new method to evaluate the storage stability of **liquid fuels** (gasoline, diesel, biodiesel, FAME), **grease or oil**.

New approved methods are:

ASTM D 7525 for Gasoline

ASTM D 7545 for Diesel, Biodiesel & FAME

The automatic PetroOXY offers advantages like:

Good repeatable results ... in a minum of time ... by best possible user safety!

PetroOXY - Method

5 ml of a sample is heated together with oxygen in a small hermetically sealed test chamber. This initiates a very fast artificial aging process, that is displayed by a pressure drop in the system.

It was found that the time consumption to the pressure drop is directly related to the oxidation stability. The results include all volatile & non-volatile oxidation products, thereby provide a complete analysis of the sample's oxidation stability.

- microprocessor controlled
- results of 20 tests can be stored
- pressure and temperature is stored once per minute
- a maximum of 16000 data-sets can be stored
- data can be exported to a PC

Economical Aspects and Advantages

The PetroOXY-Method performs a massive reduction of testing time.

The handling & cleaning time per test is limited to approx. 5 min.

As a result of improved repeatability, for producers there is the possibility of cost saving, because now the concentration of valuable additives can closer be limited to the required level.

Compared to some other oxidation and storage stability test methods, this test method uses a small sample and gives a result in a short time period.



The **Automatic Rapid Small Scale Oxidation Tester (RSSOT) PetroOXY** complies with requirements of users regarding an improvement of the currently used Oxidation Stability Tests.

- small sample volume of 5 ml
- short test time, normally less than 1 hour
- improved user safety
- automatic pressure detection system
- automated oxygen charging & relief
- automatic heating & re-cooling
- easy handling even for less qualified users
- no complicated evaluation (soon as the test is finished the result is displayed)
- interface to transfer test data
- easy cleaning after test run

The **Active Re-Cooling Device** uses Peltier cooling. It allows an automatic re-cooling to a defined temperature in the range of +17 to +24 °C. Fully self-contained and liquid-free it is a very easy and safe way of testing. Especially recommended for easy vaporizing fluids like gasoline.

The high-graded **Aluminum Chamber with galvanic coating** is used to provide an even and super fast heat transfer. The coating of the cell avoids catalytic effects. Suitable for: fuel, oil and with a sample dish for grease but not for water containing products.

Technical Data

Temperature Range: up to +200 °C
 Heater capacity: 500 W
 Re-Cooling Device: fan & active Peltier cooling
 Pressure sensor: 0 to 2000 kPa
 Temperature sensor: Pt-100
 Interfaces: 1 x RS-232 for Printer, 1 x RS-232 for Data-Export
 Dimensions: 24 x 40 x 26 cm (W x D x H)

Main Unit

13-3006

**PetroOXY "Active Cool"
 Automatic RSSOT Oxidation Stability Tester with Peltier-Cooling**



ASTM D 7525 (Gasoline) & ASTM D 7545 (Diesel, Biodiesel, FAME)
Correlation with:
 Gasoline (Method: ASTM D 525, IP 40, ISO 7536)
 Diesel (Method: ASTM D 2274, IP 388, ISO 12205; ASTM D 5304)
 FAME (Method: EN 14112, EN 15751)
 Grease (Method: ASTM D 942, DIN 51808, IP 142)
 Oil (Method: ASTM D 943, ISO 4263; ASTM D 2272, IP 229)

Consisting of:
 automatic tester with microprocessor control, high-grade stainless steel housing with two-color powder coating, touch-key panel with large LC-display for pressure and temperature, as well as simple display of the pressure curve membrane key pad for selection of desired program and parameters and control electronics with power supply, heating control with safety over-temperature shutoff, cool-down fan, sample cup with galvanic coating for 5 ml standard sample, screw cap cover, safety and insulation cover, hose nipples, internal tubing, solenoid valves for automatic pressurization and pressure relief.

Supplied with:
 1 set seals
 1 set cleaning tissues
 1 oxygen filling line
 1 verification fluid set
 1 software PetroOXY-logger
 1 data-transfer-cable
 1 USB-adapter RS232
 1 RS232-adapter DS9/DS25 plug

Note: for pasty samples like grease a PTFE-sample dish is required.

Power supply: 115/230 V, 50/60 Hz, EU-plug

13-3007

**PetroOXY "Active Cool"
 Automatic Oxidation-Stability Tester with Peltier-Cooling**

Like 13-3006 but:
 Power supply: 115/230 V, 50/60 Hz, US-plug

Options & Accessories

13-3028

Dish, PTFE
Dimensions:
 outside: Ø 42 mm, 10 mm high
 inside : Ø 37 mm, 8 mm high
 Volume: approx. 8.6 ml



13-3029

Dish, PTFE, pack of 10

13-3035

Pressure-Calibration Manometer
 with connection adapter



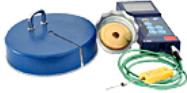
Technical Data:
 Digital pressure gage: 0 ... 10 bar
 Accuracy: 0.1% FSS typ.
 Indication: kPa, bar, PSI

13-3037

Works Certificate - PetroOXY
 about Pressure & Temperature, with 5 test points each

13-3039 Reference Fluid Set - PetroOXY
 PetroOXY ASTM D 7545 & Rancimat EN 14 112
Consisting of:
 5 ampoules of reference fluid, 11 ml, with certificate
 1 ampoule opener

13-3040 Temperature Calibration Set - PetroOXY
Consisting of:
 1 precision thermometer
 1 measuring chain with temperature sensor
 1 lid and 1 hood



13-3049 Service Set - PetroOXY
 for test cell cleaning and leak detection



13-3054 Bluetooth Set
 for wireless connection of 1 instrument (with RS-232 interface) to 1 PC



Spare Parts

13-3021 O-Ring-Set, pack of 100

13-3022 Pipettes, 5 ml, pack of 100
 graduated, made of plastic



13-3025 Cleaning-Tissue, pack of 100

13-3034 Verification Fluid Set - PetroOXY
Consisting of:
 1 flask diesel oil (50 ml) with works certificate
 2 pipettes (5 ml)



13-3030 Oxygen-Tubing, EU-version
 pressure reducing max. 8 bar

13-3031 Oxygen-Tubing, US-version
 pressure reducing max. 8 bar, 1/4" NPT

Order Guideline

Minimum equipment: 1x 13-3006
 Spares (approx. 1 year): 13-3021, 13-3022, 13-3025
 Additional requirements: Oxygen