

COPPER & SILVER CORROSION BATHS

ASTM D130; D4048; D4814 Annex; IP 112; IP 154; IP 227 (obs); IP PM DJ 2005; BS 2000 Parts 112 & 154; DIN 51 811; EN 2160; FTM 791 5325; NF M07-015; JIS K2513

A range of stirred water or oil filled baths featuring digital temperature control to an accuracy $\pm 0.1^\circ\text{C}$. All baths are manufactured from stainless steel and have a stainless steel top plate with multiple positions for test stations. Each position is equipped with a lid with an integral hook for suspending either a copper corrosion test vessel (Seta 11500-0) or a test tube support (Seta 11420-0).

A test tube support can hold up to three test tubes (Seta 11590-0). Any combination of copper corrosion vessels and test tube supports may be used. The Oxi-Cor can also accept up to three oxidation test vessels.

15550-2 SETA OXI-COR BATH

Also suitable for **OXIDATION TESTS** to: **ASTM D525; D873; D5304; IP 40; IP 138; BS 2000 Parts 40 and 138; ISO 2160; FTM 791 3352; FTM 791 3354; NF M07-012; NF M07-013; JIS K2276** and for **Accelerated Shelf Life Test for Dried Pet Food (Provisional)**

- Ambient $+5^\circ\text{C}$ to 150°C temperature range
- 4 test stations (3 when used for Oxidation Tests)
- Copper/Silver Corrosion and Oxidation tests
- Optional automatic pressure monitoring

The Oxi-Cor Bath, when used with the relevant accessories, is an economic and versatile bath capable of carrying out copper/silver corrosion tests (including ASTM D4814) and oxidation tests (including IP 40).

Oxi-Cor is a four station bath with a maximum temperature of 150°C , and is temperature controlled to $\pm 0.1^\circ\text{C}$ by a top mounted thermostir circulator with integral over-temperature and low fluid level protection devices.

A Silver Corrosion Conversion Kit (Seta 11510-0) is available to convert test stations to hold Seta 11430-0 glassware, and a Silver Corrosion Test Kit - Gasoline (Seta 11515-0) allows silver corrosion tests to ASTM D4814 to be carried out at two test positions.

For oxidation tests, one or more of the lids may be replaced by up to a maximum of three Seta 15802-0 Oxidation Vessels and pressure measuring/monitoring devices. Further details of using the Oxi-Cor as an Oxidation Bath are shown in the Oxidation Section on page 68.

SUPPLIED WITH: 4 lids, mains lead and instruction manual.



15550-2 (Corrosion/Oxidation glassware and vessels supplied separately)



BIO-FUEL TESTING

11400-6 SETA COPPER/SILVER CORROSION BATH

- Ambient $+5^\circ$ to 150°C temperature range
- Copper and silver corrosion tests
- 9 test stations

The 11400-6 is an oil filled bath with a maximum temperature of 150°C and nine test stations. The bath is protected against over-temperature and low fluid level.

A Silver Corrosion Conversion Kit (11510-0) is available to provide coolant flow to six sets of silver corrosion glassware (11430-0).

SUPPLIED WITH: 9 lids, mains lead and instruction manual.



BIO-FUEL TESTING



11400-6 with Accessories (supplied separately)

COPPER & SILVER CORROSION BATHS

11300-0 SETA COPPER CORROSION BATH

- Ambient +5° to 100°C temperature range
- Copper and Silver corrosion tests
- 2 test stations
- Small footprint

The 11300-0 is an ultra compact water filled bath with a maximum temperature of 100°C and two test stations. The bath is protected against low water level.

SUPPLIED WITH: 2 lids, mains lead and instruction manual.



BIO-FUEL TESTING

11305-0 SETA HIGH TEMP COPPER CORROSION BATH

- Ambient +5° to 150°C temperature range
- 2 test stations

The 11305-0 is a high temperature version of the 11300-0 Seta Copper Corrosion Bath. The oil filled bath has a maximum temperature of 150°C and is protected against over-temperature and low fluid level.

SUPPLIED WITH: 2 lids, mains lead and instruction manual.



BIO-FUEL TESTING

11308-0 SETA COPPER CORROSION SOLID BLOCK BATH

- Dry heating for up to 4 test samples
- Accommodates 4 x 25mm OD test tubes
- Rapid heat up time
- Ambient to 150°C
- ±0.1°C accuracy at 150°C
- Over temperature cut-off
- External temperature probe for in-block or in-sample measurement
- Function timer for delayed start/stop (1 min - 72 hours)
- Audible end of test buzzer

A precision processor controlled block heater bath with 4 test wells designed to take Copper Corrosion test tubes as specified in ASTM D130; IP 154. The external temperature probe allows control of either the sample or the bath block and a separate test well is provided for calibration checks. The bath has an integral timer and audible alarm.

SUPPLIED WITH: block extractor tool, mains lead and instruction manual.



BIO-FUEL TESTING



11300-0 with Accessories (Supplied separately)

SPECIFICATIONS


Seta Part No:	15550-2	11400-6	11300-0	11305-0	11308-0
Temperature Range:	Ambient +5 to 150°C	Ambient +5 to 150°C	Ambient +5 to 100°C	Ambient +5 to 150°C	Ambient to 150°C
Temperature Stability:	±0.1°C	±0.1°C	±0.1°C	±0.1°C	±0.1°C
No of Test Stations	4	9	2	2	4
Bath Fluid	Water or Oil	Water or Oil	Water	Water or Oil	N/A
Bath Capacity:	35 Litres	35 Litres	18 Litres	18 Litres	N/A
Heater Power:	1500W	1500W	1200W	1500W	300W
Voltage:	110/120V, 50/60Hz 220/240V, 50/60Hz	110/120V, 50/60Hz 220/240V, 50/60Hz	110/120V, 50/60Hz 220/240V, 50/60Hz	110/120V, 50/60Hz 220/240V, 50/60Hz	110/120V, 50/60Hz 220/240V, 50/60Hz
Size (HxWxD):	41 x 45 x 33cm	52 x 45 x 33cm	52 x 34 x 23cm	52 x 34 x 23cm	10 x 20 x 28cm
Weight:	10kg	10kg	9kg	9.5kg	3kg

COPPER & SILVER CORROSION BATHS

ACCESSORIES – Copper & Silver Corrosion Baths

REQUIRED

Select from the table "ITEMS REQUIRED FOR EACH TEST".

- 11241-0 SILICONE CARBIDE PAPER, 105µm (150 grit FEPA), 28 x 23cm, pack of 50.
- 11420-0 SUPPORT, for copper tests except natural gasoline and aviation fuels. Holds three test tubes in bath, pack of 2.
- 11430-0 SILVER CORROSION GLASSWARE, comprises amber glass oil test tube, cold finger condenser with glass hook for test strip and glass cradle.
- 11440-0 SILVER TEST STRIPS, 99.9% Ag, pack of 5, (for details see below).
- 11450-0 ASTM COLOUR STANDARD, ASTM D1660; D3241/IP323.
- 11460-0 SILICONE CARBIDE PAPER, 65µm (240 grit FEPA), 28 x 23cm, pack of 50.
- 11470-0 SILICONE CARBIDE PAPER, 100 grit FEPA, 28 x 23cm, pack of 50.
- 11480-0 SILICONE CARBIDE GRAINS, 105µm (150 mesh), 5 packs of 500g.
- 11490-0 GLASS SUPPORT CRADLE, to hold silver token for D4814, pack of 3.
- 11500-0 COPPER CORROSION TEST VESSEL, for copper tests on natural gasoline and aviation fuels. Stainless steel with 'O' ring sealed screw-top closure. Max working pressure 690kPa (100psi).
-  **PRESSURE CERTIFICATE (WORKS)**
- 11510-0 SILVER CORROSION CONVERSION KIT, adapts 15550-0 for silver corrosion test. Comprises six support rings, water manifold, clips and tubing.
- 11514-0 TONGS, 150mm long, stainless steel, for sample handling.
- 11515-0 SILVER CORROSION TEST KIT - GASOLINE, (for details see page 77).
- 11520-0 TEST TUBE EJECTOR SPRING, to aid removal of test tube from corrosion vessel. Required for D4814 only.
- 11530-0 SETA MULTI-STRIP VICE, holds up to five strips while polishing.
- 11550-0 COPPER TEST STRIP, 99.9% Cu, pack of 30, (for details see below).
- 11570-0 FLAT GLASS TEST TUBE, to protect strip during inspection, pack of 10.
- 11580-0 ASTM-IP COPPER STRIP CORROSION STANDARD, a set of 13 plaques, printed on aluminium and encapsulated in plastic for protection.
- 11590-0 TEST TUBE, 25 x 150mm, pack of 10.
- 22750-2 DIGITAL STOPWATCH, 0.1s resolution, (for details see page 141).
- 94632-0 SILICONE BATH OIL, 20 litres, for filling bath, for temperatures between 100 and 150°C. Note: 1 required for 11305-0, 2 required for 15550-0 or 11400-6.
- 94633-0 BATH OIL, 20 litres, for filling bath, for temperatures up to 80°C. Note: 1 required for 11300-0 or 11305-0, 2 required for 15550-0 or 11400-6.

ACCESSORIES – Cont'd

REQUIRED

- 94635-0 BATH OIL, 20 litres, for filling bath, for temperatures between 80 and 120°C. Note: 1 required for 11300-0 or 11305-0, 2 required for 15550-0 or 11400-6.

THERMOMETERS:

- ASTM12C/IP64C or ASTM12F/IP64F

OPTIONAL

- 15650-0 WATER PURIFIER, to minimise scale production. Note: Other items which may be required include Solvents, Stainless steel forceps.

ITEMS REQUIRED FOR EACH TEST

Seat Part No.	Copper Corrosion		Silver Corrosion	
	D130 IP 154	D4048 IP 112	D4814 IP PM DJ 2005	IP 227
11241-0	●	●		●
11420-0		●		
11430-0				●
11440-0			■	●
11450-0				●
11460-0	●	●	■	●
11470-0	●	●		
11480-0	●	●	■	●
11490-0			■	
11500-0	●		■	
11510-0				▲
11514-0	●	●	■	●
11520-0			■	
11530-0	●	●	■	●
11550-0	●	●		
11570-0	●	●	■	
11580-0	●	●	●	
11590-0		●	■	
22750-2			●	
ASTM12C	●	●	●	●

Items marked ■ are available as a kit (Seta Part No. 11515-0) for tests to ASTM D4814.
Item marked ▲ is only suitable for use with 15550-2 and 11400-6.

COPPER & SILVER TEST STRIPS

22190-0 COPPER TEST STRIP

ASTM D1838; IP 411; BS 2000 Part 411; BS 6924; EN 6251; ISO 6251; NF M41-007

- 99.9% purity

Finished to 75 x 12.5 x 2.4mm with 3.0mm hole for suspension. Ready for final polish according to the test method. Supplied in pack of 30 strips.



22190-0



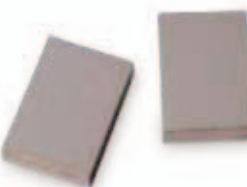
CONFORMANCE CERTIFICATE (WORKS)

11440-0 SILVER TEST STRIP

ASTM D4814; IP 227 (obs); IP PM DJ 2005

- 99.9% purity

Finished to 19 x 12.7 x 3mm. Ready for final polish according to the test method. Supplied in pack of 5 strips.



11440-0



CONFORMANCE CERTIFICATE (WORKS)

11550-0 COPPER TEST STRIP

ASTM D4048; IP 112; BS 2000 Part 112

- 99.9% purity

Finished to 75 x 12.5 x 2.4mm. Ready for final polish according to the test method. Supplied in pack of 30 strips.



CONFORMANCE CERTIFICATE (WORKS)

ACCESSORIES – Copper & Silver Test Strips

OPTIONAL

- 11241-0 SILICONE CARBIDE PAPER, 105µm (150 grit FEPA), 28 x 23cm, pack of 50.
 - 11460-0 SILICONE CARBIDE PAPER, 65µm (240 grit FEPA), 28 x 23cm, pack of 50.
 - 11470-0 SILICONE CARBIDE PAPER, 100 grit FEPA, 28 x 23cm, pack of 50.
 - 11480-0 SILICONE CARBIDE GRAINS, 105µm (150 mesh), 500g/pack, 5 packs.
 - 11530-0 SETA MULTI-STRIP VICE, holds up to five strips while polishing.
- Note: Other items which may be required include: Petroleum Spirit 40/60, Diethyl Ether.

SILVER CORROSION IN GASOLINE

11515-0 SILVER CORROSION TEST KIT - GASOLINE

ASTM D4814 Annex; IP PM DJ 2005

- Complete kit for two test stations
- Silver test tokens included
- Test token preparation materials included

Note: An ASTM12C thermometer and a corrosion bath, are required.



CONFORMANCE CERTIFICATE (WORKS)



11515-0 (components for 1 test position only)

CORROSION IN LPG

22220-4 SETA CORROSION TEST BATH

Stainless steel water bath which accommodates up to 3 pressure vessels. Fitted with heater and thermostatic temperature controller with integral circulator and LED display.

SUPPLIED WITH: mains lead, instruction manual and gabled stainless steel lid.

SPECIFICATIONS	
Temperature range:	Ambient +5°C to 100°C
Stability:	± 0.2°C
Capacity:	38 litres
Voltage:	110/120V, 50/60Hz 220/240V, 50/60Hz
Power:	1.4kW
Size (HxWxD):	60 x 35 x 33cm
Weight:	9kg

ACCESSORIES

REQUIRED

- 11241-0 SILICONE CARBIDE PAPER, 105µm (150 grit FEPA), 28 x 23cm, pack of 50.
- 11460-0 SILICONE CARBIDE PAPER, 65µm (240 grit FEPA), 28 x 23cm, pack of 50.
- 11470-0 SILICONE CARBIDE PAPER, 100 grit FEPA, 28 x 23cm, pack of 50.
- 11480-0 SILICONE CARBIDE GRAINS, 105µm (150 mesh), 5 packs of 500g.
- 11530-0 SETA MULTI-STRIP VICE, to hold copper strips while being polished.
- 11570-0 FLAT GLASS TEST TUBE, to protect strip during inspection, pack of 10.
- 11580-0 ASTM-IP COPPER STRIP CORROSION STANDARD, a set of thirteen plaques, printed on aluminium and encased in plastic for protection.
- 22150-5 SETA LPG CORROSION PRESSURE VESSEL (*for details see separate entry*).
- 22190-0 COPPER TEST STRIP, 75 x 12.5 x 2.4mm with 3.0mm hole, pack of 30.
- 22230-0 SETA BRACKET, holds Pressure Vessel correctly in bath, pack of 3.

THERMOMETERS:

ASTM12C/IP64C or ASTM12F/IP64F



22220-4 with 22150-4 (supplied separately)

22150-5 SETA LPG CORROSION PRESSURE VESSEL

ASTM D1838; IP 411; ISO 6251; NF M41-007; BS 2000 Part 411; BS 6924; EN 6251

- Pressure tested to 6890kPa (1000psi)

Used to determine the resistance to corrosion of a polished copper strip when immersed in LPG.

Comprises polished stainless steel vessel with two stainless steel needle valves, dip tube and 'O' ring sealed cap. Tested to 6890kPa, (1000psi).



PRESSURE CERTIFICATE (WORKS)



22150-5