

MANUAL MolyTester XS™ Drip Probe Method

For analysis of stainless steels and nickel base alloys

INTRODUCTION

With the MolyTester you can analyse stainless steels and nickel base alloys on the Element Molybdenum.

The measuring principle is based upon electrochemical solution, followed by a colorimetric reaction with an indicator on the element Molybdenum.

INSTRUMENT DESCRIPTION

The instrument consists of a battery with two electrodes: The anode (+, the long electrode) and the cathode (-, the short electrode).

INDICATOR SET MoXS

The Indicator set MoXS is used for analysis on the element Mo.

If stored cool, the fluid can be used for 2 years.

Safety precautions indicator set Mo

1. Harmful if swallowed.
2. Harmful if contacted with the eyes.
3. Irritating if contacted with the skin.
4. If mixed with other liquids and at temperatures higher than 50 °C, toxic gases can arise.
5. The liquid can damage clothing.

What to do if / precautions

1. Wear safety glasses and protective clothing/ gloves.
2. If swallowed: Warn doctor immediately.
3. If contacted with eyes: rinse with plenty of water and warn doctor if necessary.
4. Avoid contact with the skin. Wash hands after use. Wear gloves.
5. In case of heating liquid above 50 °C or in case of mixing it with other liquids, ventilate room and dispose liquid.
6. Keep bottle and interior of suitcase clean. By working with care and cleaning it with tissue if necessary.

SPECIFICATIONS

Temperature limits:

| | Minimum °C | Maximum °C |
|---------------------------|------------|------------|
| Measuring surface | 5* | +25* |
| Indicator Mo (short term) | 5* | 30* |
| Indicator Mo (long term) | 15* | 20* |

NOTE!!!: If the temperature of the measuring surface is higher than 30 °C, results can get unreliable. For example if the sun has burned on material, cool it

with cold water (and dry it with tissue) prior to testing.

MAINTENANCE AND CALIBRATION

The MolyTester does not need a lot of maintenance.

However, keeping the MolyTester clean from liquids and dust is important. In other words, it is advisable to clean the instrument and the suitcase interior with a piece of cloth if required.

HOW TO DO THE MEASUREMENT

1. Apply a drip of indicator fluid on the surface.
2. Place the long pin on the surface and the short pin above the drip.
3. Turnover the short pin in the drip but do NOT touch the stainless surface. The current should migrate through the fluid.
4. Wait one second.
5. Lift the instrument.
6. Wait >10 seconds.
7. Evaluate the color. No color = SS 304 and a clear red colour = SS 316 (or higher Mo, such as 904L or 254 SMO).

NOTE Sometimes SS 304 may contain up to 0,5% Mo. This might result in a very slight red coloration on a SS 304 sample. In this case use a reference sample.

BATTERY and BATTERY Tester

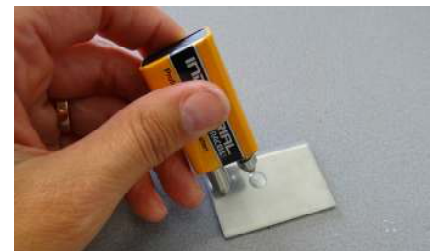
A 9 Volt alkaline battery is used. In order to assure the battery quality, use the battery tester supplied to this instrument. If the signal is 'yellow' double the time required from 1 second to 2 seconds.

TROUBLE SHOOTING

- *Measurement result is expected to be incorrect:*
 - Be sure the circuit is closed as follows: Anode tip contacts stainless steel and cathode tip contacts the drip fluid (and not the stainless steel).
 - Be sure that there is no short circuit (metal contact) between probe tip and stainless surface.
 - Temperature of measuring surface is too high.
 - Measuring surface has been contaminated.
- *Drip becomes too red.*
 - Wait 10 extra seconds, the over red color will faint away.
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MolyTester XS with the long pin (the anode, +) and the short pin (the cathode, -)



The long pin on the surface and the short pin above the drip.



Lift the short pin in the drip during 1 second, while leaving the long pin on the surface for making a circuit.



Drip colorless: SS 304



Drip red: SS 316