

MARITA*

manual radioactivity TLC analyser



Applications

- radioactivity detector for Thin-Layer-Chromatography
- β⁻ nuclides H-3, C-14 etc.
- (β⁺) nuclides F-18, C-11 etc.
- external standardisation
- ultra high sensitivity

General description

MARITA* – the single trace radioactivity thin-layer-chromatography detector – is using a linear analyser detector, which is sensitive over the entire chromatogram trace from the start to the front. The entrance window can be open for H-3-applications or closed for C-14 or any other beta⁻ or beta⁺ radiation emitting nuclide.

Beta+(PET) emitting nuclides can be detected very efficiently. Many gamma radiation emitting nuclides are emitting beta⁻ radiation as well. The pure gamma emitting nuclides can be detected as well, because they produce some Compton electrons.

MARITA* has 2 simultaneous sensing electrodes: the delayline determines the location of the counted event, the pulse height of the counting wire is used for the electronic collimation. Thus high energy beta radiation can be detected with high resolution using a narrow collimator window.

MARITA* can measure a single trace at once.

The **MARITA*** detector is elevated after the end of the measurement and a new chromatogram plate can be placed for the following measurement.

Counting gas is a non-inflamable mixture of 90% Argon and 10% Methane, which is traded as P10 gas. The gas consumption is very low.

1 TLC plate of 50 x 200 up to 200 x 200 mm can be placed on **MARITA***.

Features

- open window detection for H-3
- antistatic protection grid for open window operation
- closed window detection for C-14, F-18, C-11 etc.
- very high sensitivity
- live-display of measurement
- peak integration, background subtraction
- manual or automatic
- limit of detection calculation

Ordering information

- 02200001** **MARITA*** β⁻ (β⁺)TLC analyser for single traces
- 02000105** **MARITA*** homogeneity + resolution standard
C-14 source 22.14 MBq
200 x 10 mm with holder
- 02110010** **MARITA*** IQ/OQ C-14 standard for check of homogeneity + resolution
18 spots homogeneity test
4 spots sensitivity test
1-3-mm resolution test
counting gas and valve are expected on-site

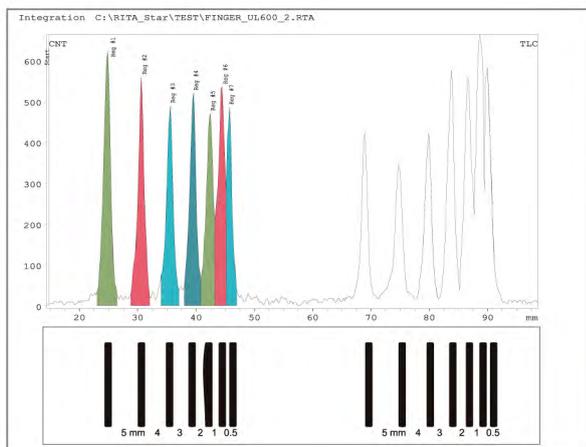




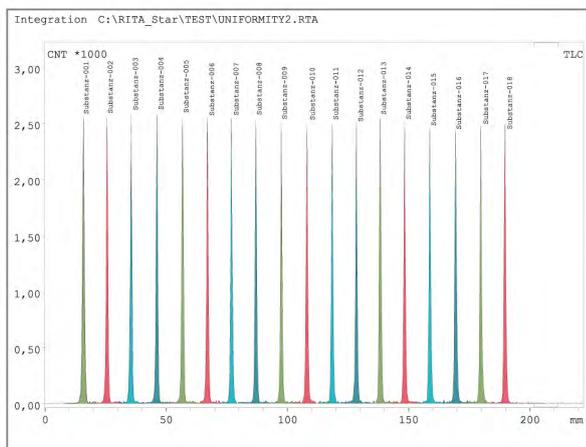
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β-Radiochromatography



resolution test



uniformity test

Technical data

detector:	gas flow proportional counter
counting gas:	P10 90% Argon, 10% Methan
gas consumption:	1l/min
detection area:	200 mm long, 20 mm wide
detection window:	open or closed, 0.9 mg/cm ²
diaphragm:	3 – 20 mm wide magnetic attached
resolution:	H-3 < 1 mm C-14 < 2 mm
sensitivity:	H-3 16 Bq in 10 min C-14 1.6 Bq in 10 min
background:	1.3 cps/200 mm
energy discrimination:	electronic collimator
traces:	1
display	live single chromatogram
evaluation:	manual or automatic peak integration background subtraction limit of detection
dimension (w x h x d):	235 x 135 x 500 mm
weight:	9 kg
power supply:	110- 230 V, 20 VA
operating conditions:	10-40°C max 70% r.H.



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