



Well advised with Roth.

Technical Info



ROTISZINT® Scintillation Cocktails NEXT GENERATION

Features and advantages

- ✓ **NPE free**
- ✓ For hydrous solutions and filter discs
- ✓ Very high sample acceptance capacity
- ✓ High counting efficiency
- ✓ Low photo- and chemoluminescence
- ✓ Very good colour- and chemical quench resistance
- ✓ Non-carcinogenic
- ✓ Low vapour pressure
- ✓ Nearly odour- and colourless
- ✓ High flash point
- ✓ Biodegradable
- ✓ No permeation through plastic vials
- ✓ According to 2003/53/ECC

The ROTISZINT® scintillation cocktails *NEXT GENERATION* are modern, versatile, ready-to-use scintillation cocktails for liquid scintillation (LSC) of β -emitters. (z.B. ^3H , ^{14}C , ^{32}P , ^{35}S).

The ROTISZINT® scintillation cocktails can be used for scintillation of aqueous samples in the entire biological, biochemical and chemical field. Typical applications are, for instance, measurement of cell culture supernatants, routine analysis, enzymatic or flow-count assays in the field of research, development or analytics.

All new ROTISZINT® Cocktails are **biodegradable**.

The composition of the ROTISZINT® Cocktails is modern and **does not contain any NPE** (nonylphenyl-ethoxylates, subject to REACH). The cocktails therefore comply with the requirements of Directive 2003/53/ECC of the European Parliament and Council.

NPE has been replaced by a combination of several reagents specifically adapted to the respective use. A single scintillation solution that covers all applications equally, like ROTISZINT®Eco plus (0016), cannot be implemented without NPEs.



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Application

The ROTISZINT® Cocktails *NEXT GENERATION* contain the same reagents as primary and secondary scintillators that were used in ROTISZINT®Eco plus.

Broad **excitation area** from 190 to 370 nm

Emission maximum: 420-430 nm

Hence, neither the excitation nor the detection wavelength changes in any way for existing protocols.

We also recommend using the same scintillation protocol in the first approaches with one of the ROTISZINT® Cocktails *NEXT GENERATION* that was previously used with cocktail 0016. In many cases, the parameters are directly transferable. If the scintillation results are not satisfactory at first, the sample amount (the ratio sample / cocktail) can be rebalanced.

Use with methanolic solutions

The ROTISZINT® Cocktails *NEXT GENERATION* can be used with methanol as sample solution in small quantities. However, methanol acts as a quench in linear dependence on the measurement - the more methanol is present, the stronger the quenching effect that occurs.

Examples: 5 ml methanol mixed with 10 ml ROTISZINT® Cocktail has a much stronger signal suppressing effect than 1 ml methanol : 10 ml Cocktail. 1 ml methanol quenches just as strongly as 2 ml of a 50 % aqueous methanol solution.

We therefore recommend using methanol as a sample solution only if this quench is taken into account and only if suppression of the signal in the individual samples is acceptable and can be standardised. For the measurement of methanolic samples, the Cocktail ROTISZINT®HighCapacity should be used (1P1C), as it works particularly efficiently even with very small sample quantities.

An alternative is the cocktail ROTISZINT®FlowCount (1P19), which accepts larger amounts of methanol than the other three cocktails due to its special detailed composition. With FlowCount, 3 ml of pure methanol or 6 ml of a water: methanol mixture (1:1) can still be used, whereas with the other cocktails a maximum of 2 ml, or better 1.5 ml, of pure methanol should be expected (or the corresponding amounts of an aqueous methanol mixture). The ROTISZINT®FlowCount cocktail can certainly be used to analyse samples outside of flow cytometry, even though it was specially developed and optimised for this application. However, the quenching effect is not less than with the other cocktails.

Concrete recommendations for samples in methanol:

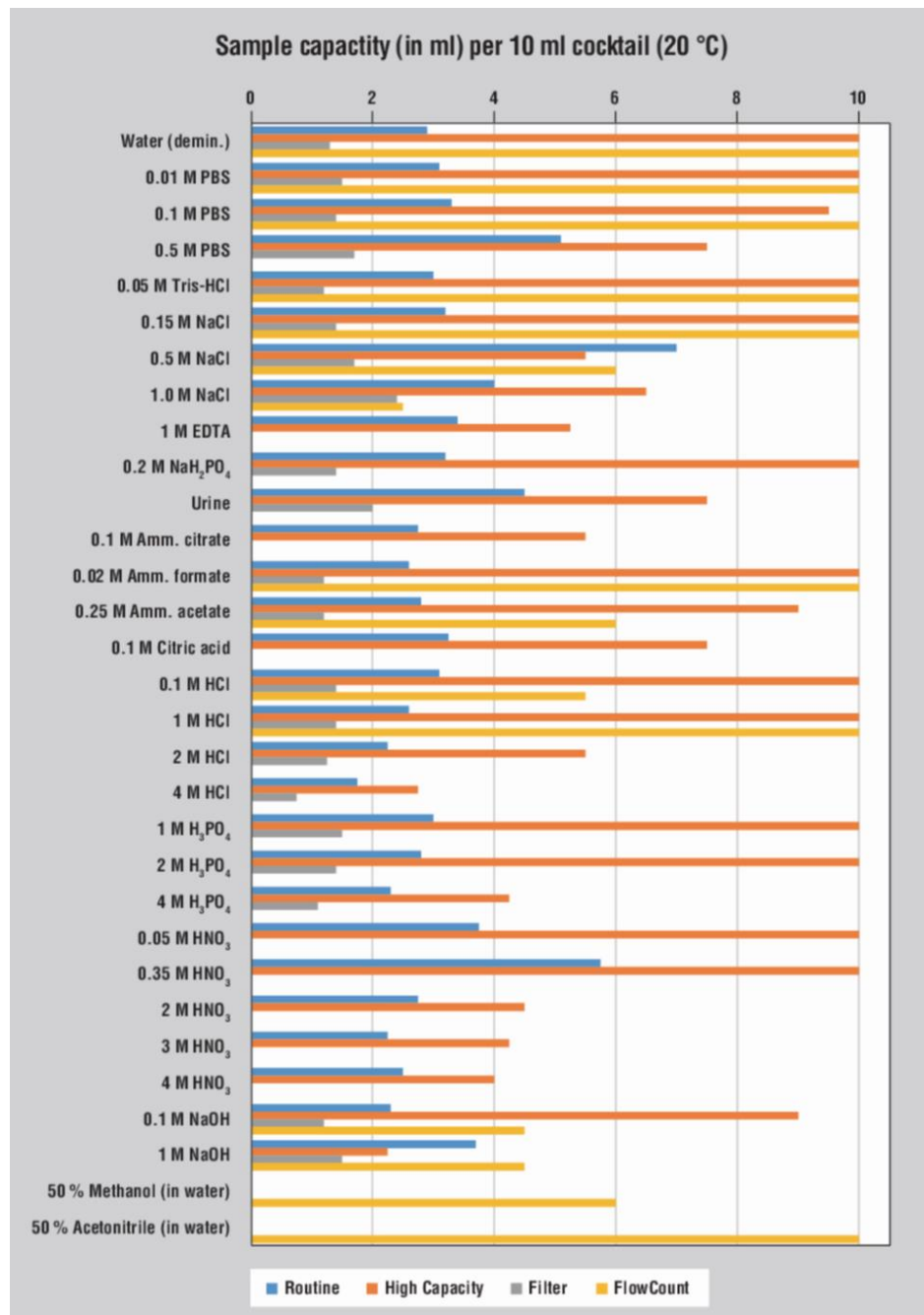
- a) Reduce the sample quantity as far as possible or use diluted methanol as sample solvent.
- b) Check whether a 'standardisation' of the quenching effect is possible by comparison samples at the beginning of the measurements, so that this effect can be included in later measurements (confirmed by corresponding controls).
- c) Test the two cocktails HighCapacity (1P1C) and FlowCount (1P19) in comparison and use the cocktail better suited for your individual samples.

General comment

ROTISZINT® Cocktails are supplied in black plastic bottles that can be used as stand-up containers. They allow safe and space-saving storage and use. With a practical dispenser, you can conveniently and safely take out the amount of cocktail you need at any time. We recommend the ROTILABO® dispensers (order no. HAC6.1 to HAC9.1). To withdraw the entire liquid, you can easily replace the inner withdrawal tube with a longer Teflon® or polyethylene tube (6 mm inner diameter), or use the telescopic suction tube (order no. AA92.1).

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Figure: Typical sample acceptance capacity (in ml) per 10 ml cocktail (20 °C).
The chart shows typical application data where available. Empty bars = not examined.



For advisory support, please contact your personal sales representative or our product management on (phone) ++49 721 5606 522.



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Our Assortment

ROTISZINT®Routine (1P1A) non-expensive and reliable, for standard assays

Scintillation cocktail for all *standard scintillations* with aqueous samples and 'normal' mixing ratios. The *sample uptake capacity* for some sample solutions (such as 0.3 M HNO₃) is up to 5 ml / 10 ml cocktail. For most common as well as for higher concentrated solutions (for example 0.1 M ammonium citrate, 0.1 M EDTA or 2 M HNO₃) the sample uptake volume is 2 to 3.5 ml / 10 ml cocktail.

ROTISZINT®HighCapacity (1P1C) for scintillations in a broad range, also perfectly suited for difficult assays

Advanced scintillation cocktail for *high sample volumes*, e.g. when the aqueous sample has a low concentration or needs to be diluted. Also excellent for all standard assays. The *sample uptake capacity* is up to 10 ml / 10 ml cocktail for many common sample solutions such as 0.5 M HNO₃, 1 M H₃PO₄, 0.1 M NaOH, 0.1 M NaCl, PBS and water. Only for some special and highly concentrated solutions (such as 0.1 M ammonium citrate, 0.1 M EDTA, 4 M H₃PO₄ or 4 M HNO₃) the sample uptake volume is 4 to 6 ml / 10 ml cocktail.

ROTISZINT®Filter (1P18) for measuring dry and wet filter plates

Special scintillation cocktail for measuring samples in *filter plates*. ROTISZINT®Filter can be used with practically all types of filters as well as with dry, moist or wet filter plates, the wetting of the filters by the scintillation cocktail is fast and complete.

ROTISZINT®FlowCount (1P19) for Flow Count Assays

For *flow-through* scintillation counting. Formulated using alcohol ethoxylates that do not contain any NPE. Works perfectly with common eluents used in flow counting, including gradients, also aqueous/organic gradients, e.g. water/methanol or water/acetonitrile gradients up to a ratio of 2:1. ROTISZINT®FlowCount does not form gels and is therefore quick and easy to mix.

s.s. 09/2022