

ZTS1240 ZETA TRANSFER STANDARD

Issue	ZTS1240 Zeta Transfer Standard - Replacement of DTS1235 Zeta Transfer Standard
Notice audience	Existing customers
Product	Zetasizer range
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Introduction

ZTS1240 is Malvern Panalytical's new Zeta Transfer Standard which is being introduced as a direct replacement for the long established DTS1235 Zeta Transfer Standard.

DTS1235 is used to verify the correct operation of Malvern Panalytical's range of Zetasizer Instruments (Zetasizer Nano series and Zetasizer Advance series in particular). ZTS1240 directly replaces DTS1235 for this purpose.

ZTS1240 is being introduced from 17th February 2020 and will be shipped as part of installation kits as of that date, as well as sold by Malvern Panalytical via our normal sales channels. Users wishing to order Zeta Transfer Standard after this date should use the part number ZTS1240 to order. DTS1235 will no longer be available to order after this date.

Frequently Asked Questions

Why have we stopped selling DTS1235?

The Zeta Transfer Standards provided by Malvern Panalytical are based on surface modified latex beads suspended in an aqueous buffer. The buffer is to maintain a consistent ionic environment and the modified latex provides the particles on which we perform the zeta potential measurement.

In establishing the typical value and limits for a Zeta Transfer Standard Malvern Panalytical characterize a single batch of the modified latex by measuring the zeta potential of the modified latex in its final formulated form on numerous Zetasizer instruments and types, zeta potential cells and cell types.

This round-robin approach is done to provide sufficient, statistically relevant, data to establish the typical value and limits for the modified latex in its formulated form. This characterization then provides the basis for zeta potential limits for the life of the Zeta Transfer Standard and for batch release testing.

We have now used all the modified latex that formed the particles in DTS1235 and hence we can no longer manufacture DTS1235 with the original batch of latex characterized as part of the DTS1235 development.

Is ZTS1240 identical to DTS1235?

The surface chemistry of the modified lattices used are equivalent and differ only slightly in their relative surface modification coverage and is slightly smaller in mean particle size.

The change in latex has meant that ZTS1240 has a slightly less negative typical zeta potential value than DTS1235 and as such users should be aware of this change and not compare results obtained on ZTS1240 to pass/fail criteria based on DTS1235.

In all other respects, such as stability and temperature sensitivity, we fully expect ZTS1240 to behave as DTS1235 did and we have the same recommendations on storage and lifetime of the Zeta Transfer Standard.

Why have the zeta potential limits changed for ZTS1240?

When DTS1235 was characterized it was characterized using one instrument type and one folded capillary cell type.

ZTS1240 has been characterized on a greater number of system and cell types than was previously done. This has increased the number of variables and hence the uncertainty around the limits. We have also increased our coverage factor to 2.5 to expand the uncertainty and give a near 99% confidence level for the Zeta Transfer Standard.

We would fully expect that a single instrument type with a single sample type in a single cell type to exhibit significantly lower uncertainty than used for establishing our limits for ZTS1240.

Why is ZTS1240 called a “transfer” standard?

Like its predecessor ZTS1240 is called a transfer standard as it is referenced to a recognized standard, in this case NIST 1980 SRM. NIST 1980 is a positively charged goethite material. Most systems studied are negatively charged and hence use of a negatively charged standard is preferable. In addition, negatively charged particles will have minimal interaction with the negatively charged surfaces typical to zeta measurement cells wetted surfaces. The minimal interaction of a negatively charged sample means that cells are easier to clean after use of the Transfer Standard.

The system of transfer standards is often used to reduce issues such as this and to better represent a more “typical” sample type.

How do you know that each batch of ZTS1240 is as good as the last?

Every bulk batch of transfer standard manufactured is tested prior to being packed into syringes, and further tests are carried out on a random sample of these from each batch before they are released for sale. Batch release tests are performed on a reference system that is reserved and maintained specifically. The system is verified on a regular basis and checked against NIST 1980 SRM on a regular basis. Batch release certificates for ZTS1240 are available on request.

Do these changes mean I need to update my methods or SOPs I use for validation?

Yes, if you have been using DTS1235 in the past and have a Zetasizer Nano Software version 7.13 or earlier. Users of Zetasizer Advance systems and ZS XPLOER software should also use our defined ZTS1240 method.

Updated methods and SOPs for both system types, as well as instructions for use, can be found at www.malvernpanalytical.com/zts1240.

Is ZTS1240 used to calibrate my Zetasizer?

Your Zetasizer uses the technique of Electrophoretic Light Scattering (ELS), this is a first principles measurement and as such cannot be nor needs to be calibrated. ZTS1240 is therefore used to “verify” correct operation only of your Zetasizer system.

How long do you expect ZTS1240 to be available for?

Malvern Panalytical have sourced enough modified latex for a predicted 10-years of production of ZTS1240. However, this is only a prediction and circumstances outside our control may change the expected lifetime of this Zeta Transfer Standard. As a rule, we therefore do NOT recommend that part numbers, names and pass/fail values be directly specified in your SOPs or working practices or guides, as any changes in Zeta Transfer Standard will need to be reflected back into your working documents and SOPs. It is better to refer to ‘Zeta Transfer Standard’ generically and to acceptance criteria and limits as those specified by the manufacturer of the transfer standard.

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