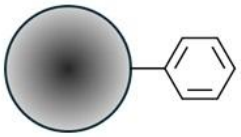
TEMIZ™ DVB/PS-SPE Resin

Material overview

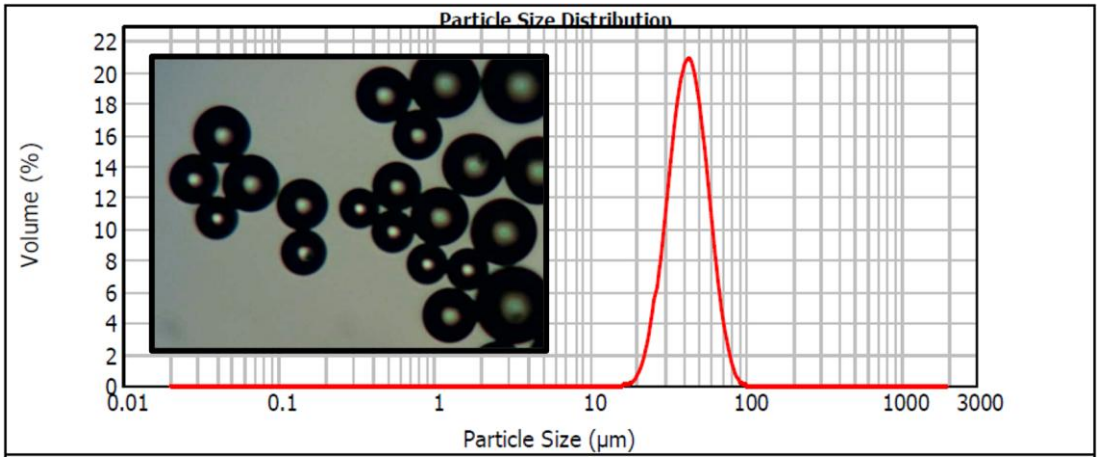
TEMIZ™ DVB/PS-SPE is a rigid and porous polymeric resin with highly hydrophobic (DVB/Sty) surface properties and are made in a size range optimal for use in analytical flow-through SPE columns or other formats.

Resin property list

Resin parameter	Value
Resin backbone	DVB/Sty
Particle size	20-90 µm
Pore size	90 Å
Pore area	500 m^2/g
Pore volume	0.8 ml/g



Schematic structure of benzyl groups on a DVB/PS bead surface



Particle characterization of 20-90 µm DVB/PS beads by light microscopy and particle size distribution analysis.

Material properties and areas of use

This resin is an alternative to reverse-phase RP SPE products on the market. Although alternative RP products appear similar on paper, each commercial RP resin may perform differently, and the user must determine which variant is best suited for their specific application for a given target analyte.

TEMIZ™ DVB/PS is characterized by a high surface area with highly hydrophobic surface properties. The resin is pH-stable in the full range, has an exceptional selectivity for small organics compounds or oligomeric biomolecules spanning a wide range of differing polarities and Log P values. Target matrices include food or environmental samples but also biological samples such as urine, serum, plasma, or the like.

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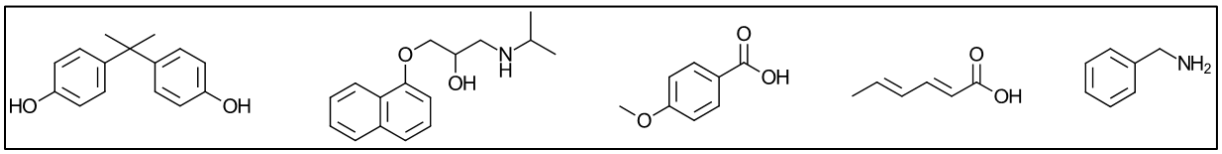
Generic Application Sequence

Recommended use is in solid phase extraction (SPE)-LC-MS/MS applications. It allows for a simple SPE workup (user must optimize their specific method), a simplified starting method is as follows:

1) Condition the resin with methanol
2) Wash with water
3) Load sample
4) Optimize washing or elution steps
5) Elute with MeOH or AcN or mixtures thereof

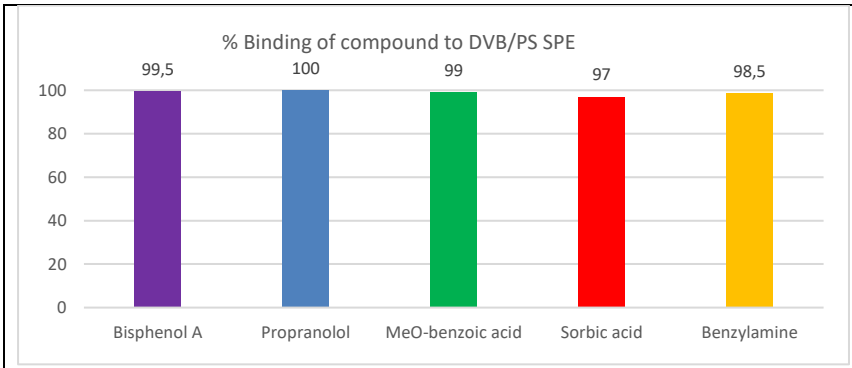
Proof-of-concept adsorption study

A variety of compounds spanning from acids to bases and hydrophobic compounds were diluted in water and loaded on conditioned (methanol, water) Temiz DVB-SPE columns determining adsorption.



Chemical structures of bisphenol A, propranolol, 4-methoxybenzoic acid, sorbic acid and benzyl amine.

Results of adsorption study:



Adsorption of the various compounds is quite strong. Temiz DVB//PS-SPE exhibits exceptionally strong retention all the tested compounds in water. These were of a broad variety of compounds from both acidic, basic, and hydrophobic compounds. Other compounds are also expected to be retained well on this broad-selectivity resin adsorbent.

Many other compounds, which are not well retained on other solid phase resins, may also be expected to efficiently adsorb to the high surface area material. Examples are certain hydrophilic compounds, that do not bind to HLB materials – this is due to their hydrophilic portion of Hydrophilic-Lipophilic-Balance resins that may shield the hydrophobic adsorption and prevents binding of weakly hydrophobic chemicals. HLB resins are very popular, such as Waters Oasis or other similar products, but they suffer from a reduced spectrum of compounds that offer sufficient hydrophobicity. Temiz DVB/PS SPE offers an alternative to poorly retained compounds.

A strong retention offers the possibility to do an efficient clean-up of a complex sample with selective wash steps prior to LC-UV or MS. This can be optimized to wash out matrix components and then elute the target compound. Alternatively, disturbing matrix compounds may remain on the column, and the target compound is eluted earlier to obtain a clean fraction for analysis.

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The resin can also be used in suspension mode to adsorb the target compounds. The resin can then be either filtered off or separated from the liquid by sedimentation. Further desorption and elution steps can be adapted depending on the target application. To obtain the product as bulk resin, pls contact us directly at info@redstone-sep.com.

TEMIZ™ DVB/PS SPE is supplied as resin (50 mg) packed into 3 ml SPE columns. Other column geometries, resin packed in HPLC cartridges, or other resin contents can be provided, as well as resin packed in multi-well plates or other formats for use in bio/analytical applications. For format or other inquiries, or to obtain more information, please contact us at info@redstone-sep.com.

See Web shop for prices, or inquire directly at order@redstone-sep.com

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