

## VDS optilab phases and their corresponding USP codes

USP code and description	VDS optilab phases
<p><b>L1</b> Octadecyl silane chemically bonded to porous or non-porous silica or ceramic micro-particles, 1.5 to 10 µm in diameter, or a monolithic rod</p>	<p>VDSpher® C18-E VDSpher® C18-NE VDSpher® C18-SE VDSpher® C18-M VDSpher® C18-M-E VDSpher® C18-M-SE VDSpher® C18-H VDSpher® PUR C18-E VDSpher® PUR C18-NE VDSpher® PUR C18-SE VDSpher® PUR C18-M VDSpher® PUR C18-M-E VDSpher® PUR C18-M-SE VDSpher® PUR C18-H U-VDSpher® PUR C18-E U-VDSpher® PUR C18-M-SE U-VDSpher® PUR C18-H VDSpher® OptiAqua C18 VDSpher® OptiAqua PUR C18 VDSpher® OptiBio C18-E VDSpher® OptiBio C18-SE VDSpher® OptiBio C18-V VDSpher® OptiBio PUR C18-E VDSpher® OptiBio PUR C18-SE VDSpher® OptiBio PUR C18-V-E VDSpher® OptiBio PUR C18-TSE VDSpher® OptiBio PUR C18-H VDSpher® OptiBio PUR C18-PSE VDSpher® MS C18-DE VDSpher® MS C18-B VDSpher® MS C18-B-DE VDSpher® MS C18-H VDSpher® MS C18-LC-H</p>
<p><b>L3</b> Porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silica rod.</p>	<p>VDSpher® SIL VDSpher® PUR SIL U-VDSpher® PUR SIL</p>
<p><b>L7</b> Octylsilane chemically bonded to totally or superficially porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silica rod.</p>	<p>VDSpher® C8-E VDSpher® C8-SB VDSpher® C8-SE VDSpher® C8-M VDSpher® C8-H VDSpher® PUR C8-E VDSpher® PUR C8-NE VDSpher® PUR C8-SB VDSpher® PUR C8-SE VDSpher® PUR C8-M-E VDSpher® PUR C8-M-SE</p>

<p><b>L7 (continued)</b> Octylsilane chemically bonded to totally or superficially porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silica rod.</p>	<p>VDSpher® PUR C8-H U-VDSpher® PUR C8-E VDSpher® OptiAqua C8 VDSpher® OptiAqua PUR C8 VDSpher® OptiBio C8-V VDSpher® OptiBio PUR C8-E VDSpher® OptiBio PUR C8-SE VDSpher® OptiBio PUR C8-V-E VDSpher® OptiBio PUR C8-PSE VDSpher® MS C8-B-DE</p>
<p><b>L8</b> An essentially monomolecular layer of aminopropylsilane chemically bonded to totally porous silica gel support, 1.5 to 10 µm in diameter, or a monolithic silica rod.</p>	<p>VDSpher® NH<sub>2</sub> VDSpher® PUR NH<sub>2</sub> VDSpher® PUR SAC VDSpher® PUR HILIC-AM VDSpher® PUR HILIC-SAC U-VDSpher® PUR NH<sub>2</sub></p>
<p><b>L10</b> Nitrile groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silica rod.</p>	<p>VDSpher® CN VDSpher® CN-RP VDSpher® PUR CN VDSpher® PUR CN-RP VDSpher® PUR CN-SE VDSpher® PUR CN-SE-RP U-VDSpher® PUR CN U-VDSpher® PUR CN-RP VDSpher® MS CN-DE VDSpher® MS CN-DE-RP</p>
<p><b>L11</b> Phenyl groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silica rod.</p>	<p>VDSpher® Phenyl-E VDSpher® PUR Phenyl-E VDSpher® PUR Phenyl-B VDSpher® PUR Phenyl-SE U-VDSpher® PUR Phenyl-E VDSpher® MS Phenyl-DE</p>
<p><b>L17</b> Strong cation-exchange resin consisting of sulfonated cross-linked styrenedivinylbenzene copolymer in the hydrogen form, 6 to 12 µm in diameter</p>	<p>Optigel CarbEx II H+</p>
<p><b>L19</b> Strong cation-exchange resin consisting of sulfonated cross-linked styrenedivinylbenzene copolymer in the calcium form, about 9 µm in diameter</p>	<p>Optigel CarbEx II Ca++</p>
<p><b>L20</b> Dihydroxypropane groups chemically bonded to porous silica or hybrid particles, 1.5 to 10 µm in diameter, or a monolithic silica rod.</p>	<p>VDSpher® Diol VDSpher® PUR Diol VDSpher® PUR HILIC-OH</p>
<p><b>L26</b> Butyl silane chemically bonded to totally porous silica particles, 1.5 to 10 µm in diameter</p>	<p>VDSpher® C4-E VDSpher® C4-SE VDSpher® PUR C4-E VDSpher® PUR C4-SE VDSpher® OptiAqua PUR C4 VDSpher® OptiBio C4-E</p>

<p><b>L26 (continued)</b> Butyl silane chemically bonded to totally porous silica particles, 1.5 to 10 µm in diameter</p>	<p>VDSpher® OptiBio C4-V VDSpher® OptiBio PUR C4-E VDSpher® OptiBio PUR C4-SE VDSpher® OptiBio PUR C4-V-E VDSpher® OptiBio PUR C4-PSE VDSpher® MS C4-B-DE</p>
<p><b>L27</b> Porous silica particles, 30 to 50 µm in diameter</p>	<p>VDSpher® 100 SIL, 30µm</p>
<p><b>L52</b> A strong cation exchange resin made of porous silica with sulfopropyl groups, 5 to 10 µm in diameter</p>	<p>VDSpher® PUR OA-1</p>
<p><b>Unknown</b> For these phases the USP code is not existing or not known</p>	<p>VDSpher® PUR PEI VDSpher® PUR HILIC-Z</p>