



Theme: **Resistance of silica gel against ethanol**

Question: *Can silica gel used for the aeration of ethanol tanks and is silica resistant to ethanol?*

Answer:

Yes, silica gel is resistant and can be used for the ventilation of ethanol tanks. Silica gel is used among other things in the thin layer chromatography for the drying of ethanol. It is one of the polar adsorbents and be carried out at the 90% of all separations in the thin layer chromatography. It is a porous and amorphous silica dioxide which having a large internal surface. Separately, moderately polar analytes in organic solvents (e.g. ethanol) are solubled.<sup>1</sup>

The partly or completely drying of water-soluble solvents is possible, wherein, for economic reasons only the residual dewatering max 0,5 - 1% by weight can be achieved. Are dehydrated as alcohols (e.g. methanol, ethanol, isopropanol), esters (e.g. ethyl acetate, propyl acetate) and ketones (e.g. acetone, MEK, cyclohexanone).<sup>2</sup>

For dehydrating of ethanol silica gel or zeolite keep back the smaller water molecules and leave the larger ethanol molecules through. The alcohol is allowed to stand over the silica gel.<sup>3</sup>

GIEBEL FilTec, 12.11.2015

<sup>1</sup> [http://www.chemgapedia.de/vsengine/vlu/vsc/de/ch/3/anc/croma/duennschichtchromatographie.vlu/Page/vsc/de/ch/3/anc/croma/dc/stat\\_phase/kieselgel/kisel1m70te0101.vscml.html](http://www.chemgapedia.de/vsengine/vlu/vsc/de/ch/3/anc/croma/duennschichtchromatographie.vlu/Page/vsc/de/ch/3/anc/croma/dc/stat_phase/kieselgel/kisel1m70te0101.vscml.html)

<sup>2</sup> Trocknung durch Adsorption; Silica Verfahrenstechnik GmbH

<sup>3</sup> <http://www.chemieunterricht.de/dc2/r-oh/alk-dest.htm>