

Looking for a budget-friendly alternative to traditional aqueous heavy liquids?

Our solution: Recycled Sodium Polytungstate – SPT3R

Aqueous sodium polytungstate solutions are non-toxic and present an environmentally-friendly alternative to organic heavy liquids.

However, with the solution being based on the rare element tungsten, its cost can be a disadvantage.

TC-Tungsten Compounds has been producing these solutions in the highest analytical quality for many years now. Using the sink-float method, these high-purity solutions, which contain foreign ions in the ppm range, are frequently employed to separate mixtures of sand samples, soil samples, ash residues, minerals, plastics, glass samples, and more. Yet, many of these applications may not even require high-purity solutions as such. This is why our company, TC-Tungsten Compounds GmbH, has developed a process to make used, contaminated, and diluted sodium polytungstate solutions ready for reuse. Owing to this specially designed cleaning process, we proudly present our recycled sodium polytungstate solution, SPT3-R, as a budget-friendly alternative.

We are committed to sustainability

To support this, our recycled sodium polytungstate solution, SPT3-R, will be available in all requested densities. This recycled material is a transparent solution with an NTU < 10 and maintains the same physical properties as the original (see figure).



Standard Solution

e.g. SPT3 with a density of $3.00 \pm 0.02 \text{ g/cm}^3$
(available in all densities)



Recycled Solution*)

e.g. SPT3-R with a density of $3.00 \pm 0.02 \text{ g/cm}^3$
(available in all densities)

The colour of the solution can vary slightly depending on the raw material or cleaning process used. The main difference between those two solutions is the higher level of foreign ions in the recycled solution, although this is still only within the ppm range. Despite this, the tungsten already present in the recycled solution helps to reduce costs by eliminating the need for additional raw material expenses. The actual costs of the solution are mainly attributed to the specialised cleaning process we have developed. Recycling solutions requires preliminary assessments and, if needed, additional information about their intended applications.

Polytungstate solutions are often used in situations where there is no interaction between the heavy liquid and the samples, such as with glass samples, polymers, semi-precious stones, and flow testing solutions. However, it is important to note that not all polytungstate solutions can be recycled. Depending on the assessment, these solutions will either be disposed of by us or returned to the raw material manufacturers for further processing.

Below is a comparison of the costs for the different solutions:

Price comparison of sodium polytungstate solutions with a density of 3.00 g/cm^3

	SPT3 Standard	SPT3R Recycled*)	Savings
1 kg	€218 (225 US\$)	€145 (149 US\$)	- 34%
1 litre	€654 (674 US\$)	€435 (448 US\$)	- 34%

*) We would be pleased to send you a free sample.