

FOR USA ONLY

1-(3-Sulfopropyl)-pyridinium-betain vs. Pryridiniumhydroxypropylsulfobetain

1) Is there free pyridinium in 1-(3-Sulfopropyl)-pyridinium-betain? PPS from Raschig and from others (China) does contain some free pyridinium. Raschig less than 0,1 g/kg and does not need to be reported. Chinese depending upon the manufacturer may contain some but normally very low. Sometimes it is below analytical detection range but does not mean there is none. However, everyone thinks it is pyridinium free.

2) Is PPS-OH just water solution of PPS? PPSOH is a different molecule than PPS but similar. The main difference is that besides Pyridine a part of the molecule contains Hydroxy propyl sulfonate. PPS does contain besides of pyridine propylsulfonate. So, no Hydroxy group. Way of synthesis of PPSOH is completely different. Thus, PPSOH always will contain sodium chloride as a by-product while PPS does not contain sodium chloride or any other by-product. In the market you will find PPSOH solid with a PPSOH content of max 78%. The remaining will be sodium chloride. There are suppliers that also sell a lower concentration, e.g. aqueous solution with 40% PPSOH and approx. 10% sodium chloride.

The free pyridinium content of the liquid types can be up to 4 g/liter, while in the solid product it may be up to 0,5 g/l. depending how they dry and if they wash and recrystallize (Indians and Chinese do not recrystallize).

3) MPBSOH contains some free pyridine? MPBSOH contains ~ 39% PPSOH, ~10% Sodium chloride and harmless sulfonates in water. The free pyridinium content is between 1 and 2 g/l pyridine. The product is clear colorless. Since the product is saturated, some easily soluble precipitation may happen in wintertime.

4) MPBSOH-US contains no free pyridine. Back to question 1. It is same as MPBSOH but we remove the free pyridinium to a level where it cannot be detected anymore by analytical methods. So its free pyridinium level is comparable to Raschigs PPS.

Please clarify the product similarities and differences.

Levelling: all 3 products give good levelling,

LCD performance (uniformity) MPBSOH has best, followed by PPS and then PPSOH (explaining that to customers is not easy, best is doing hullcells and comparing).

Lifetime before obtaining by-product requiring carbon treatment because brittleness starts to happen (results were achieved by using otherwise identical formulations so to avoid mixing up data since also other formulation ingredients can make embrittlement) PPS lasts up to 800AH per liter, MPBSOH-US Last up to 600 AH per liter, MPBSOH 500 AH/liter and PPSOH last 400 AH/liter.