

ABSTRACT

SHALLOW TRENCH ISOLATION

5 CHEMICAL AND MECHANICAL POLISHING SLURRY

Shallow Trench Isolation (STI) chemical mechanical planarization (CMP) compositions, methods of using the composition and systems for using the composition are provided. The compositions comprise abrasive particles, and two different groups of
10 chemical additives; a non-ionic organic surfactant molecule including polysorbate-type surfactants formed by the ethoxylation of the sorbitan and non-ionic organic molecules with multi hydroxyl functional groups in the same molecule. The compositions provide high silicon oxide removal rate (RR) and suppressed SiN removal rate (RR). A good
15 pattern performance are provided by the compositions which offer desired silicon oxide RR at a reasonable DF and showing the high SiN RR suppression at an even higher DF from the blanket wafer data.

[No figure]