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(54) Title: METAL ION REDUCTION IN NOVOLAK RESINS SOLUTION IN PGMEA		
(57) Abstract The present invention provides methods for producing water insoluble, aqueous alkali soluble novolak resins having a very low level of metal ions, utilizing treated chelated ion exchange resins to make the neutral ammonium salt or acid form. A method is also provided for producing photoresist composition having a very low level of metal ions from such novolak resins and for producing semiconductor devices using such photoresist compositions.		