

Title (en)  
FLAME RETARDANT

Title (de)  
FLAMMSCHUTZMITTEL

Title (fr)  
AGENTS IGNIFUGES

Publication  
**EP 2531557 A1 20121212 (DE)**

Application  
**EP 11702446 A 20110203**

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Abstract (en)  
[origin: WO2011095552A1] The invention relates to phosphine sulfide derivatives of formula (I),  $S=PR_1R_2R_3$  (I) which are suitable as flame retardants, in particular for polymers, wherein the symbols in formula (I) have the following meanings:  $R_1$ ,  $R_2$  are identically or differently C1-C12-alkyl, C3-C8-cycloalkyl, which is unsubstituted or substituted by one or more C1-C4-alkyl groups, C2-C12-alkenyl, C2-C12-alkinyl, C6-C10-aryl, C6-C10-aryl-C1-C4-alkyl;  $R_3$  is H, SH,  $SR_4$ , OH,  $OR_5$  or a group:  $-(Y_1)_n-P(=X_1)R_6-(Y_2)_m-P(=X_2)R_7R_8$ ; or two groups  $R_1$ ,  $R_2$ ,  $R_3$  together with the phosphorus atom to which they are bound form a ring system;  $X_1$ ,  $X_2$  are identically or differently O or S;  $Y_1$ ,  $Y_2$  are identically or differently O or S;  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$  are independently of each other identically or differently C1-C12-alkyl, C3-C8-cycloalkyl, which is unsubstituted or substituted by one or more C1-C4-alkyl groups, C2-C12-alkenyl, C2-C12-alkinyl, C6-C10-aryl or C6-C10-aryl C1-C4-alkyl;  $n$  is 1 if  $Y_1$  or  $Y_2$  is O, and 1, 2, 3, 4, 5, 6, 7 or 8 if  $Y_1$  or  $Y_2$  is S, and  $m$  is a whole number between 0 and 100.

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