

***N*-Arenesulphonyl-*N'*-arenesulphenylsulphurdi-imides**

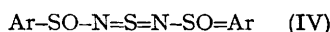
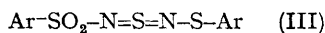
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THE reaction between trichloromethanesulphenyl chloride (I), and the amides of aromatic sulphinic acids (II) in boiling tetrachloroethylene proceeds unexpectedly. In addition to the main products which are ammonium chloride and diaryl disulphide, a series of orange coloured compounds (III) has been isolated in low yield; they are stable in air and are not easily hydrolysed.



These compounds, listed in the Table, are

obtained from benzenesulphinamide, toluene-*p*.sulphinamide, and *p*-chlorobenzenesulphinamide. The infrared bands observed are in good agreement with the corresponding bands in the 1-sulphonylimino-2-sulphonyl-1,2-thiazines.¹

The mass spectrum of (III) (Ar = Ph), confirms the proposed structure. Ions of high abundance at *m/e* 169, [Ph-S-N=S=N]⁺, and at *m/e* 141, [Ph-SO₂]⁺, are formed by cleavage of the molecule into two fragments. The absence of ions containing the (-SO-N=) group suggests that no significant amount of (IV) is present, although traces of (IV) would escape detection in the presence of large amounts of (III).

TABLE

(III) (Ar =)	M.p. (°C.)	% Yield	$\nu(\text{S=N})$ (cm. ⁻¹)	$\nu(\text{SO}_2)$ (cm. ⁻¹)
Ph	139—140	7.3	965	1140, 1310
4-CH ₃ C ₆ H ₄	144—146	6.5	877	1140, 1305
4-Cl-C ₆ H ₄	156—159	4.7	980	1145, 1310

Neither (III) nor (IV) is formed by reaction of (II) with sulphur dichloride, and the reaction of 2,2,2-trichloroethanesulphinamide with (I) does

not lead to any well defined products other than ammonium chloride.

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¹ W. Wucherpennig and G. Kresze, *Tetrahedron Letters*, 1966, 1671.