

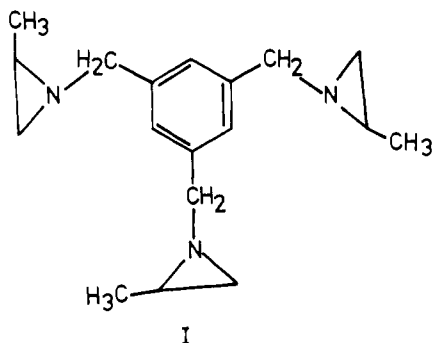
# Synthesis of 1,3,5-Tris[(2-methylaziridiny-1)methyl]benzene

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A new cross-linking agent for carboxyl-terminated polybutadiene, 1,3,5-tris[(2-methylaziridiny-1)methyl]benzene, was prepared from 2-methylaziridine and 1,3,5-tris(bromomethyl)benzene.

Aziridine rings containing multifunctional compounds are widely used as curing agents for carboxyl-terminated polybutadiene (CTPB) (1). The important compounds reported so far are tris(2-methylaziridiny-1)phosphine oxide (2), 1,3,5-tris[(2-ethyl-1-aziridiny)carbonyl]benzene (3), and 2,4,6-tris(2-ethylaziridiny-1)-s-triazine (4). In this communication we report a new trifunctional aziridine compound, 1,3,5-tris[(2-methylaziridiny-1)methyl]benzene (I), which may be used as a cross-linking agent for CTPB.



## Experimental Section

2-Methylaziridine was prepared from 1-aminopropan-2-ol by the procedure of Minoura et al. (5). 1,3,5-Tris(hydroxy-

methyl)benzene was prepared from trimethylbenzene-1,3,5-tricarboxylate (6) and this was converted to 1,3,5-tris(bromomethyl)benzene by treating with phosphorous tribromide in ether as reported in the literature (7).

**1,3,5-Tris[(2-methylaziridiny-1)methyl]benzene (I).** 2-Methylaziridine (2.98 g, 0.05 mol) in triethylamine (100 mL) was added to 1,3,5-tris(bromomethyl)benzene (5.50 g, 0.0154 mol) and the reaction mixture was refluxed (4 h). The solvent was removed in vacuo and the product was extracted twice with ether. The extract was washed with alkaline water (1%  $\text{Na}_2\text{CO}_3$ ) and dried ( $\text{Na}_2\text{SO}_4$ ). On evaporation of the ether, the title compound was obtained as a viscous liquid (2 g, 42%):  $^1\text{H}$  NMR ( $\text{CDCl}_3$ )  $\delta$  7.23 (s, 3 H, aryl), 3.40 (s, 6 H,  $\text{CH}_2$ ), 1.53–1.17 (m, 9 H, aziridiny), 1.13 (d, 9 H,  $\text{CH}_3$ ); IR (neat) 3030 (w), 2980 (s), 2920 (s), 1650 (w), 1600 (m), 1450 (s), 1400 (s), 1260 (s), 1160 (m), 1060 (m), 850 (m), 800 (s)  $\text{cm}^{-1}$ .

Anal. Calcd for  $\text{C}_{18}\text{H}_{27}\text{N}_3$  (Found): C, 75.80 (75.72); H, 9.48 (9.54).

**Registry No.** I, 90219-40-2; 2-methylaziridine, 75-55-8; 1,3,5-tris(bromomethyl)benzene, 18226-42-1.

## Literature Cited

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