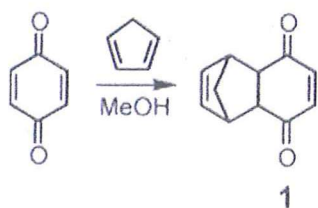


1,4,4a,8a-tetrahydro-1,4-methanonaphthalene-5,8-dione

### 2.2.1. Synthesis of 1,4,4a,8a-tetrahydro-1,4-methanonaphthalene-5,8-dione (1)



Purchased p-benzoquinone was first purified by recrystallization from dichloromethane before use. Next, 21.62 g (0.20 mol) of the purified p-benzoquinone in 500 mL of methanol (95%) was slowly added 15.53 mL of fresh cracked cyclopentadiene (0.26 mol) at  $-78\text{ }^{\circ}\text{C}$ . The reaction mixture was then slowly warmed to room temperature and stirred for 8 h. The desired solid product was filtered and re-crystallized from methanol, 31.36 g, 90% yield.  $^1\text{H}$  NMR (200 MHz in  $\text{CDCl}_3$ ):  $\delta$  1.23–1.26 (dd, 1H), 1.37–1.40 (dd, 1H), 3.18 (s, 2H), 3.51 (s, 2H), 6.02 (s, 2H), 6.53 (s, 2H,  $\text{CH}=\text{CH}$ ).

Li-Kuan Chen, Chien-Shun Wu, Ming-Chou Chen, Ko-Lun Hsu, Hsing-Chieh Li, Chi-Han Hsieh, Meng-Hua Hsiao, Chung-Liang Chang, Peter Po-Jen Chu, *J. Membr. Sci.* **2010**, 361, 143.