

PROCESS FOR PREPARING CYCLOHEXANOL AND CYCOHEXANONE FROM CYCLOHEXANE

ABSTRACT

A process for preparing cyclohexanol and cyclohexanone from cyclohexane includes steps of: (1) non-catalyticly oxidizing cyclohexane with molecular oxygen to obtain an oxidized mixture liquid containing cyclohexyl hydroperoxide (CHHP) as a main product; (2) performing a homogenous catalytic decomposition with an oil-soluble transitional metal compound serving as a catalyst, and serving as a scale inhibitor by 1-hydroxy ethidene-1,1-diphosphonic acid (di)octyl ester, or a combination of 1-hydroxy ethidene-1,1-diphosphonic acid (di)octyl ester and phosphoric acid octyl ester, to decompose the CHHP in the oxidized mixture liquid into cyclohexanol and cyclohexanone; and (3) rectifying to obtain products of the cyclohexanol and the cyclohexanone.