

Thesis Title : THE USE OF GLYCOL ALDEHYDE DIMER IN ORGANIC  
SYNTHESIS.

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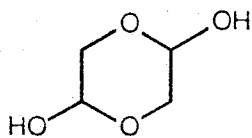
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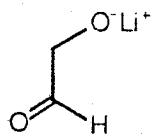
### ABSTRACT

The work described in this thesis deals with the generation of lithium alkoxide of glycolaldehyde monomer (**126**) from commercial glycolaldehyde dimer (**112**). The monomer can be trapped by ester- or keto-enolate to give the corresponding hydroxylactone or ketodiol. Such trapping by the enolate derived from (**100**) results in anthracene-tulipalin B (**138**), from which tulipalin B (**65**), the skin sensitizer  $\beta$ -hydroxy- $\alpha$ -methylene- $\gamma$ -butyrolactone isolated from *Tulipa gesneriana* L., can be released by flash vacuum pyrolysis.

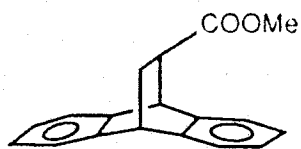
PDC oxidation of (**138**) gives the spiroketolactone-anthracene adduct (**257**) which is found to smoothly undergo silica gel-catalysed retro Diels-Alder reaction at room temperature.



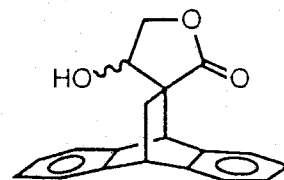
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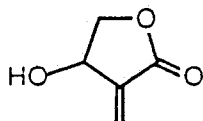
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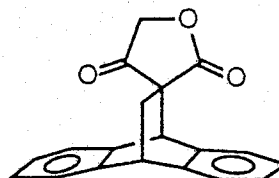
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(65)



(257)