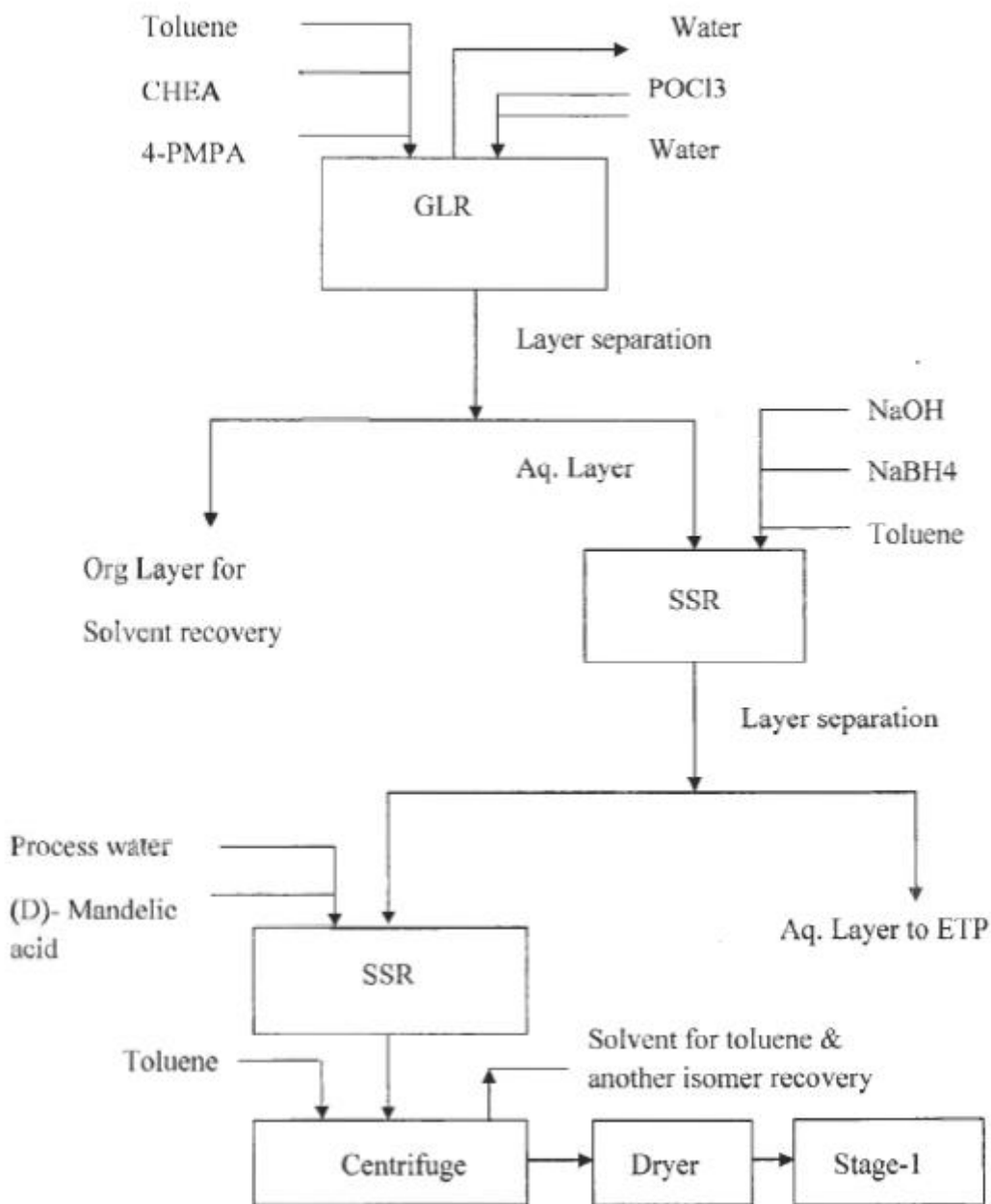


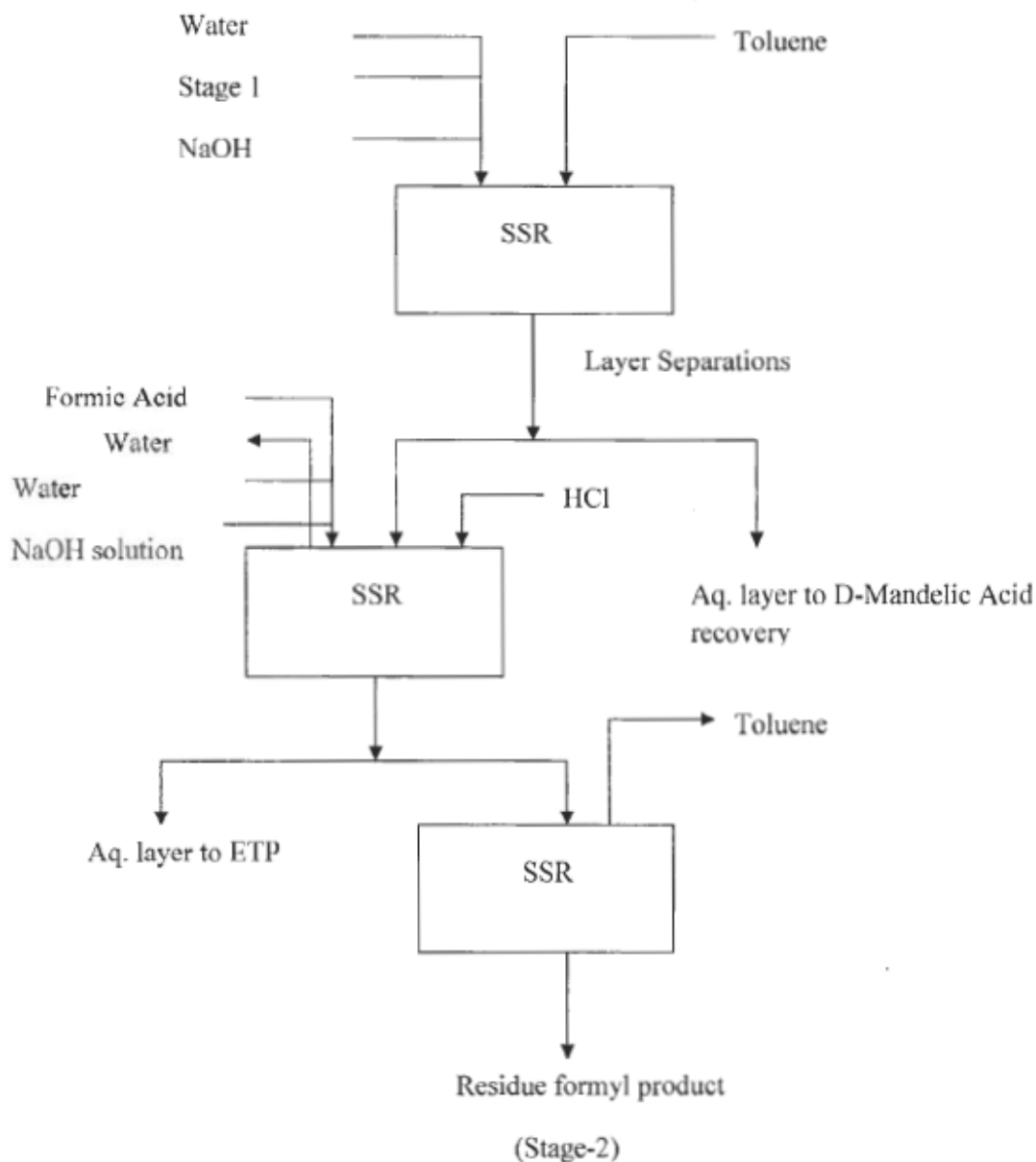
Manufacturing Process Flowchart Dextromethorphan Hydrobromide, Monohydrate, USP (Cat# DE139)

**Stage- I (+)-1-(4-methoxybenzyl)-3, 4, 4a, 5, 6, 7, 8, 8a-octahydroisoquinoline D-
 Mandelic acid Salt**



**(+)-1-(4-methoxybenzyl)-3, 4, 4a, 5, 6, 7, 8, 8a-
 octahydroisoquinoline D- Mandelic acid Salt**

Stage- II: (+)-1-(4-methoxybenzyl)-3, 4, 5, 6, 7, 8-hexahydroisoquinoline-2(1*H*)-carbaldehyde

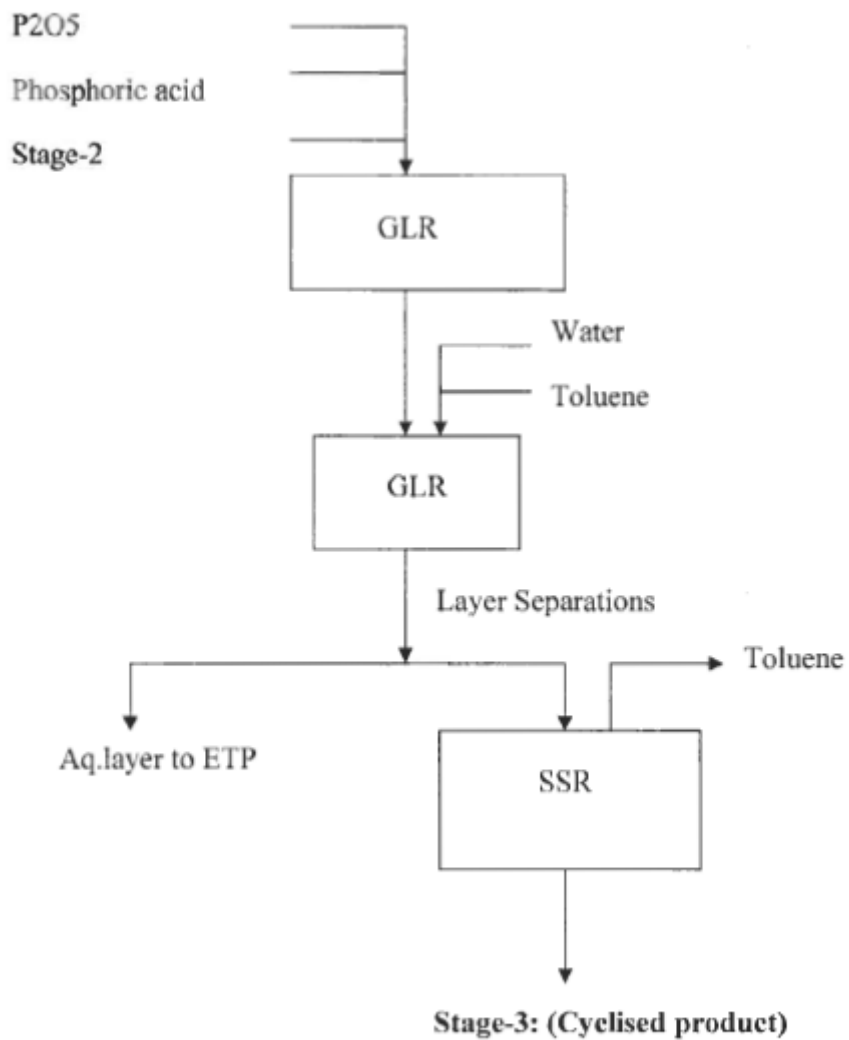


(+)-1-(4-methoxybenzyl)-3, 4, 5, 6, 7, 8-hexahydroisoquinoline-2(1*H*)-carbaldehyde

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Stage- III: 3-methoxy-N-Formyl Morphinan



(+)-3-methoxy-N-Formyl Morphinan

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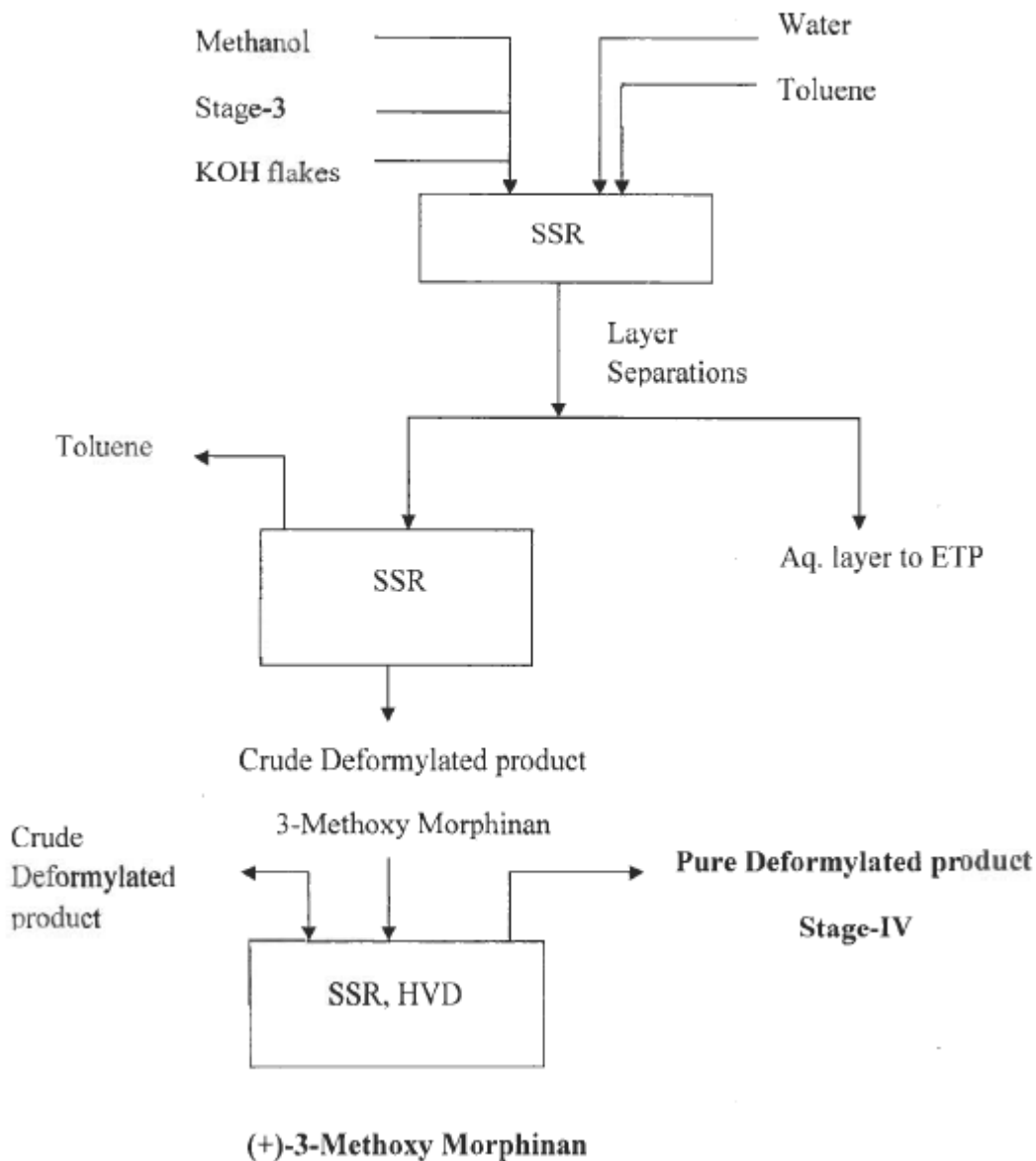
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Stage- IV: (Deformylation) (+)-3-Methoxy Morphinan



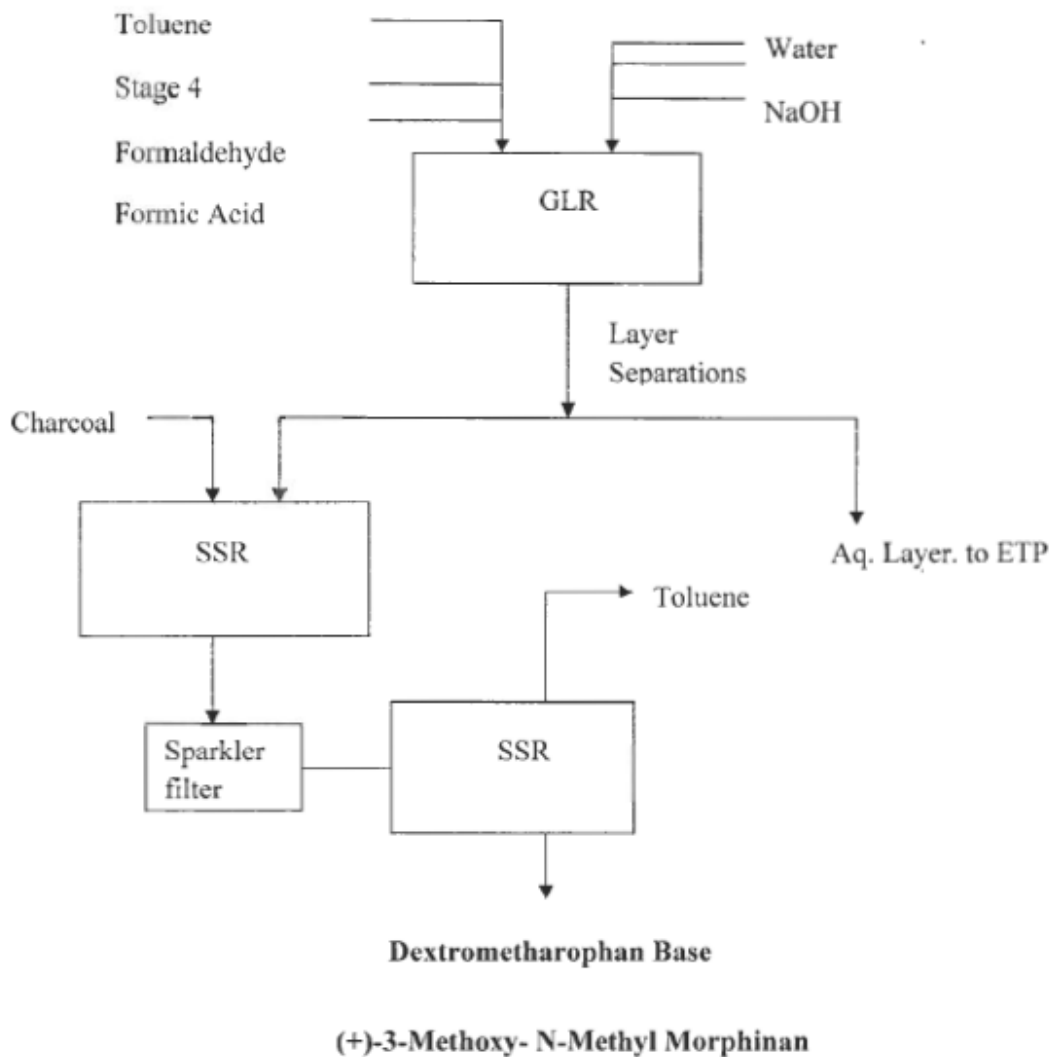
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Stage- V: (+)-3-Methoxy- N-Methyl Morphinan



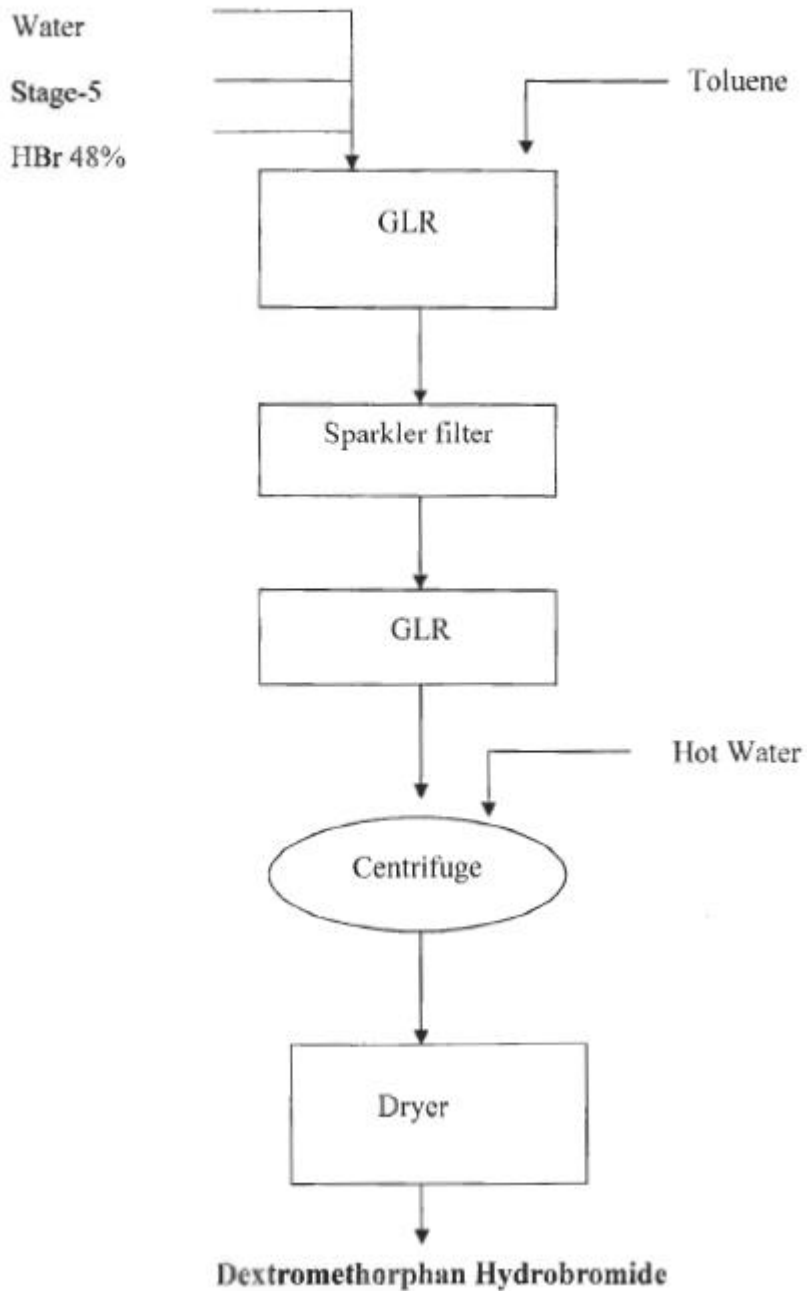
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Stage - VI: Dextromethorphan HBr



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