NON TECHNICAL NOTE

Process on Electrochemical preparation of 2,5-dihydro dimethoxy furan

1. **Name of the process** : Electrochemical preparation of 2,5-dihydro dimethoxy furan

2. **Product** : **2,5-dihydro dimethoxy furan**

3. **Uses of the product** :

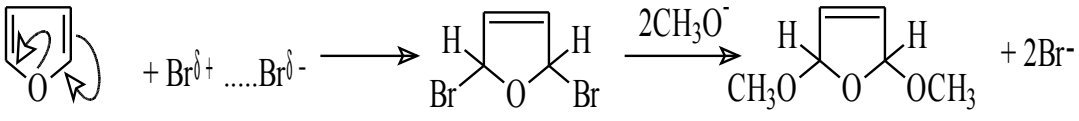
2,5-dihydro, 2,5-dimethoxy furan is a disinfectant and is used for the manufacture of succindialdehyde, a valuable intermediate in organic chemical industries. .

4**. Advantages**:

i. The formation of product is in high yield.
ii. The conversion is high.
iii. There is no bye-product formation.
iv. No spent reagent disposal.
v. Process is eco-friendly.

5. **Description of the process**:

This electrochemical method involves the anodic methoxylation of furan in an undivided cell employing methanolic NaBr as supporting electrolyte with Graphite anode and nickel cathode. The bromine consumption in this method is very low. The yield of product is 85% and the energy consumption is 2.5 Kwh / kg.



6. a. Present consumption pattern : 10000 TPA
   b How is the demand being met : by import/indigenous
   c. Estimated future demand : Expected to increase
   d. Present market price :

7. Suggested plant capacity : 30 TPA

8. Consumer acceptability : I.P specification

9. Laboratory work details

   a. Scale of investigation : 10 kgs per day

   b. Can you supply samples : yes

   c. Demonstration scale : 100 gram of product per batch

10. **Total Capital Investment**

a.	Total Capital Investment	: Rs.50.00 lakhs
b.	Fixed capital investment	: Rs.20.00 lakhs
c.	Working capital investment	: Rs.30.00 lakhs
d.	Cost of production	: Rs.760/- per kg
e.	Selling price	: Rs.1000/- per kg
f.	Annual Turnover	: Rs.270.00 lakhs
g.	Gross profit	: Rs. 42.00 lakhs
h.	Net profit	: Rs. 30.00 lakhs
i.	Return on investment	: 60%

11 Suggested terms of release of the process:

i. Lump sum premium : Rs. 5.0 lakhs
ii. Recurring royalty : 5% on sales.

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Experimental details

[Electrochemical preparation of 2,5-dihydro dimethoxy furan]

i.	Anode.	: Graphite
ii.	Cathode	: Ni coated on copper or Graphite
iii.	Current Density	: 50 mA/cm^2
iv.	Electrolyte	: NaBr +MeOH
v.	Temperature	: 0^0C
vi.	Amount of Furan taken	:
vii.	Charge passed	: 2F/mole
viii.	Total current	: Ahr
ix.	Current rate	: A
x.	Cell Voltage	: V
xi.	Time of electrolysis	: hrs
xii.	Amount of product formed	: g
xiii.	Yield	: 85 %
xiv.	Current efficiency	: 80 %
xv.	Conversion	: 90%