

Company: BCG

CEO: Abhinaba Mukherji

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Chemical Formula: C₁₁H₂₄O₃

Chemical Name: ethylhexylglycerin

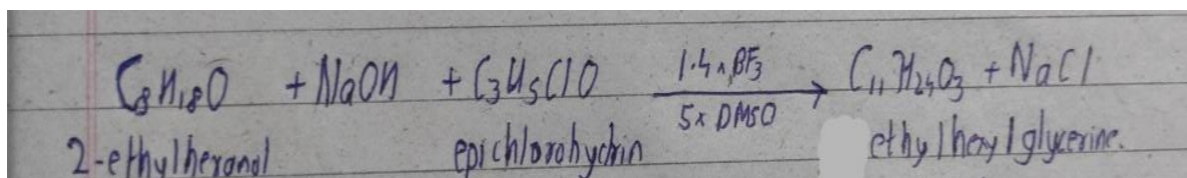
Use case:

- Ethylhexylglycerin is a multifunctional cosmetic ingredient used as an active component in deodorants, as an emollient and humectant in skin care, and boosting the anti-microbial performance of other ingredients to protect products from spoilage.
- Alternatives to this compound are Phenoxyethanol, sodium benzoate, leuconostoc /radish root ferment filtrate, etc.
- Ethylhexylglycerin is superior to its alternatives in terms of its cost-effectiveness and ability to function as a preservative, surfactant, deodorizer, and a skin-conditioning agent with different properties
- India imports most of its Ethylhexylglycerin from Germany, Thailand and Poland and is the largest importer of Ethylhexylglycerin in the World.

Economic feasibility: The input raw materials needed for the synthesis of ethylhexylglycerin are Glycerine, 2-ethylhexanol, Sodium hydroxide (NaOH), Ethyl acetate, Epichlorohydrin, Boron trifluoride (BF₃), and Dimethyl sulfoxide (DMSO).

- Glycerine- Rs.40/kg
- 2-ethylhexanol- Rs.180/Lt
- Sodium hydroxide (NaOH) - Rs.65/kg
- Ethyl acetate- Rs.98/kg
- Epichlorohydrin- Rs.74/kg
- Catalyst – Boron trifluoride (BF₃)- Rs.500/kg
- Solvent – Dimethyl sulfoxide (DMSO) -Rs.1158/kg
- Product – Ethylhexylglycerin (C₁₁H₂₄O₃) -Rs.2065/kg

Assuming 90% conversion we get for analysis-



Compound	Rate per Kg/Lt	Rate per Kmole (in Rs)	Qty	Amount
2-ethylhexanol	Rs.180/Lt	2812	1	2812
Sodium hydroxide (NaOH)	Rs.65/kg	2600	1	2600
Epichlorohydrin	Rs.74/kg	6845	1	6845
Dimethyl sulfoxide (DMSO)	Rs.1158/kg	5772	5	28860
Boron trifluoride (BF ₃)	Rs.500/kg	33500	1.4	46900
Ethylhexylglycerin (C ₁₁ H ₂₄ O ₃)	Rs.2065/kg	421260	0.9	379134

Total Reactant cost- Rs 88017

Total value of the product- Rs. 379134

Profitability per Kmole of 2-ethylhexanol is Rs.291117

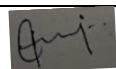
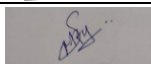
References:

<https://www.zauba.com/import-Glycerin-hs-code.html>
<https://www.indiamart.com/proddetail/2-ethyl-hexanol-11458516712.html>
<https://www.indiamart.com/proddetail/white-sodium-hydroxide-18652418091.html>
<https://www.indiamart.com/proddetail/ethyl-acetate-21761167797.html>
<https://www.zauba.com/import-Epichlorohydrin-hs-code.html>
<https://www.indiamart.com/proddetail/boron-trifluoride-11667355648.html>
<https://www.ibuychemikals.com/product/dimethyl-sulphoxide-lr>
<https://www.zauba.com/import-Ethylhexylglycerine-hs-code.html>

List the contributions of each author:

- Samarth Agrawal carried out the market research for chemical trade data.
- Harshal Jivnani prepared the use case.

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