

| Project Type: | |
|--|--|
| Contract / Toll Manufacturing Scale Up / Piloting Research & Development | Material Procurement Other : |
| Are you willing to co-invest cap | ital? |
| Ves No | |
| Sector: | |
| Agrochemical Pharmaceuticals Personal Care Electronics Renewable/Green | Performance CASE Industrial Fuel Oil/Lube Additives Other : HI&I |
| Raw Materials: | |
| I will source materials | You will source materials Combination sourcing |
| Glycolipids Surfactants | |
| Professional Certifications: | |
| ChemStewards® | ISO 9001 cGMP ISO 14001 Other : |
| Process/Technology Type: | |
| Sulfation process | |



Unit Operations/Equipment:

Sulfation process utilizing moderately viscous liquid. Depending on pathway taken, may need to strip solvent from final product.

Specialized equipment needs:

Analytical equipment needs: TLC, potential HPLC

Equipment material of construction: Glass lined, SS 316 or higher

Operating Conditions:

Temperature range: 5 - 120 C

Pressure range: 0-2 ATM

Viscosity range: 200 (@80C)- 5000 cPs (@23C)

Multiple pathways can be utilized to manufacture this product.

| Processing Volumes: | | | |
|--|-----|------|--|
| R&D: | | | |
| Pilot: 100 kg | Q2 | 2024 | |
| Commercial: 1000 MT/year | Q4 | 2024 | |
| Packaging Type: | | | |
| ✓ Drum/Tote Supersack ✓ ISO/tank truck Other : | | | |
| Delivery & Transportation: | | | |
| ✔ Domestic International ✔ Road Rail | Sea | Air | |
| Storage Conditions: | | | |
| Ambient Blanketing required Other : | | | |

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