

LAB JOURNAL - Version 2.0

Experiment No. : LBN 12 Aim : To develop product equivalent to reference product
Equipment Details : Glass RBF with stirrer set up
Reaction Scheme : Safety Precautions :

Input Raw Material

Sr.No	Raw Material	Sources	Cas No.	RM No	Quantity gms	Purity	Rm %	Molecular Wt.	No. of Moles	Molar Ratio
1	Vicaspin LUB 1020 (R226011203) Bu- EO-PO HV-66.0/ MW-1100	Viswaat			190.0			1100	0.17	1.0
2	P2O5	Commercial			9.273				0.065	0.38
3	Epomine SP-012	Nippon			27.4	100				
4	2 ethyl hexyl acrylate				56.8	100		184.3	0.31	
5	AIBN catalyst				0.24					
6	Step- B reaction mass (25%)				46.5					
7	Step- A product				140.8					

Experimental Procedure

Sr.No	Time hrs	Temperature °C	Pressure/Vacuum-N2	Process Steps	Remarks
1	2 / 1 / 0.5	40-45 / 55-60 / 65-70	N2	Step- A To main reactor added Vicaspin LUB 1020 (R226011203) Bu- EO-PO HV-66.0/ MW-1100 under stirring and nitrogen atmosphere temp. 40 deg increased temp slowly with addition of P2O5	viscous clear mass
2	0.25 / 0.5	40-45 / 50-55	N2	Step-B To main reactor added Epomine SP-012- reaction mass held with slow addition of 2 ethyl hexyl acrylate, checked free acid at interval	AV-47.9, free acid 0.3
3	1-2	60-65	N2	Step-C To main reactor added Step- B reaction mass (25%) and Step- A product, mixed till uniform	AV 43.7 Amine 30.5

Optimized Reaction Conditions: Temperature c: 50-55 | N2/Vac: N2 | Time: 4h

Critical Process Parameter

Sr No	Source	Time	Temp	Observation Details
1	Step-A	2	45	viscous clear mass

Critical Parameters

S.no	Parameter	Reference	Value
1	av	43.2	43.7
2	aminev	30.1	30.5

Conclusion: Product clear, AV and amine value within target range. Sample submitted for application testing.