

LAB JOURNAL - Version 2.0

Experiment No. : LBN 35 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			178.0			1100	0.16	1.0
2	P2O5	Commercial			10.469				0.074	0.46
3	Epomine SP-012	Nippon			27.4	100				
4	2 ethyl hexyl acrylate				73.3	100		184.3	0.4	
5	Step- B reaction mass (25%)				47.3					
6	Step- A product				154.1					

Experimental Procedure

Sr.No	Time hrs	Temperature °C	Pressure/Vacuum-N2	Process Steps	Remarks
1	2	40-45	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	exotherm controlled, clear mass
2	0.25 / 0.5	45-50 / 60-65	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-47.3, free acid 0.9
3	2	65-70	N2	Step-C To main reactor added Step- B reaction mass (25%) and Step- A product, mixed till uniform	AV 43.3 Amine 29.7

Optimized Reaction Conditions: Temperature c: 60-65 | N2/Vac: N2 | Time: 4h

Critical Process Parameter

Sr No	Source	Time	Temp	Observation Details
1	Step-A	2	45	exotherm controlled, clear mass
2	Step-B	0.5	60	free acid < 0.5 endpoint check

Critical Parameters

S.no	Parameter	Reference	Value
1	av	43.2	43.3
2	aminev	30.1	29.7

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