

LAB JOURNAL - Version 2.0

Experiment No. : LBN 30 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			9.715				0.068	0.4
3	Epomine SP-018	Nippon			37.3	100				
4	2 ethyl hexyl acrylate				72.3	100		184.3	0.39	
5	Step- B reaction mass (20%)				32.0					
6	Step- A product				138.6					

Experimental Procedure

Sr.No	Time hrs	Temperature °C	Pressure/Vacuum-N2	Process Steps	Remarks
1	2 / 0.25	40-45 / 60-65	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	2 / 0.25	40-45 / 55-60	N2	Step-B To main reactor added Epomine SP-018- reaction mass held with slow addition of 2 ethyl hexyl acrylate, checked free acid at interval	AV-46.0, free acid 0.9
3	1	60-65	N2	Step-C To main reactor added Step- B reaction mass (20%) and Step- A product, mixed till uniform	AV 45.9 Amine 33.7

Optimized Reaction Conditions: Temperature c: 55-60 | 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	45.9
2	aminev	30.1	33.7

Conclusion: Product hazy at RT, AV marginally above target. Repeat with reduced P2O5 charge.