

LAB JOURNAL - Version 2.0

Experiment No. : LBN 24A 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 1010 (R225100845) Bu- EO-PO HV-62.3/ MW-900	Viswaat			170.0			900	0.19	1.0
2	P2O5	Commercial			7.655				0.054	0.28
3	Epomine SP-012	Nippon			37.3	100				
4	2 ethyl hexyl acrylate				59.5	100		184.3	0.32	
5	AIBN catalyst				0.79					
6	Step- B reaction mass (20%)				38.2					
7	Step- A product				164.9					

Experimental Procedure

Sr.No	Time hrs	Temperature °C	Pressure/Vacuum-N2	Process Steps	Remarks
1	0.5 / 0.5	50-55 / 60-65	N2	Step- A To main reactor added Vicaspin LUB 1010 (R225100845) Bu- EO-PO HV-62.3/ MW-900 under stirring and nitrogen atmosphere temp. 40 deg increased temp slowly with addition of P2O5	viscous clear mass
2	3 / 3	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-45.0, free acid 0.5
3	1-2	65-70	N2	Step-C To main reactor added Step- B reaction mass (20%) and Step- A product, mixed till uniform	AV 43.2 Amine 30.0

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	0.5	55	viscous clear mass
2	Step-B	3	60	free acid < 0.5 endpoint check

Critical Parameters

S.no	Parameter	Reference	Value
1	av	43.2	43.2
2	aminev	30.1	30.0

Conclusion: