

LAB JOURNAL - Version 2.0

Experiment No. : LBN 40 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			200.0			1100	0.18	1.0
2	P2O5	Commercial			10.767				0.076	0.42
3	Epomine SP-018	Nippon			32.5	100				
4	2 ethyl hexyl acrylate				66.0	100		184.3	0.36	
5	AIBN catalyst				0.41					
6	Step- B reaction mass (15%)				38.7					
7	Step- A product				140.6					

Experimental Procedure

Sr.No	Time hrs	Temperature °C	Pressure/Vacuum-N2	Process Steps	Remarks
1	1-2 / 0.5	45-50 / 55-60	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	hazy then clear
2	2 / 0.25	50-55 / 60-65	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-51.1, free acid 0.8
3	2	60-65	N2	Step-C To main reactor added Step- B reaction mass (15%) and Step- A product, mixed till uniform	AV 38.0 Amine 32.9

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	1-2	50	hazy then clear

Critical Parameters

S.no	Parameter	Reference	Value
1	av	43.2	38.0
2	aminev	30.1	32.9

SPDu :
Conclusion: AV 38.0 against target 43.2; batch outside range, rework planned.