



Salicylic Acid Clear Hydroalcoholic Gel

The gel contains Salicylate acid, 2.0% w/w. This keratolytic gel features Carbopol® 980 NF polymer which imparts viscosity and clarity to the hydroalcoholic formulation.

Number	Ingredients	% w/w
	Part A:	
1.	Carbopol* 980 NF polymer	2.5
2.	Deionized water	53.0
	Part B:	
3.	Salicylic acid	2.0
4.	Ethanol	40.0
	Part C:	
5.	2-Amino-2-methyl-1 propanol	q.s. to pH 4.0
6.	Deionized water	q.s. to 100.0
	TOTAL:	100.00

Lab batch size - 600 gm

Process:

- **1. Part A:** Add purified water in a vessel equipped with dispersing type or propeller type impeller. Disperse Carbopol 980 NF into the water by submerging the impeller until it is very close to the bottom of the vessel. Angle the impeller to generate a vortex that is 1 to 1½ impeller diameters. Slowly sift the polymer through a stainless steel 20 mesh screen into the vortex of the rapidly agitating liquid (about 800-1500 rpm). Increase the agitation as the viscosity of the dispersion increases to maintain a vortex. After all the dry polymer has been introduced, reduce the agitation to 400-600 rpm and reposition the mixer to vertical position to avoid or minimize air entrapment. Continue the agitation for about 45 minutes, or until a uniform dispersion is attained.
- 2. Part B: Dissolve salicylic acid in ethanol.
- 3. Add Part B ingredients to Part A ingredients and mix thoroughly.
- **4. Part C:** Adjust the above mixture slowly with 2-amino-2-methyl-propanol to pH 4.0 and add the remaining deionized water. Mix with Paddle or S/U-shaped low-shear impeller to minimize the air entrapment and to obtain a clear gel.





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Product Properties	Stability	
Appearance: Clear gel	Passed 3 freeze/thaw cycles	
pH: 4.00	Stable for a minimum of 6 months when stored under the following ICH conditions: Long term (25 \pm 2°C / 60 \pm 5% relative humidity)	
Viscosity (cP)*: 15,150 ● *Brookfield RVT @25 °C, 20 rpm, Spindle #5, measured at 24 hours	Accelerated (40 ± 2°C / 75 ± 5% relative humidity)	

Design of mixing elements:





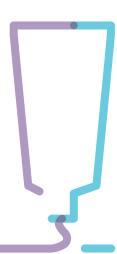
Summary:

Carbopol® polymers have demonstrated to be useful and highly efficient as rheology to obtain a clear viscous hydroalcoholic topical gel.

The Lubrizol Life Science Health website https://www.lubrizol.com/Health provides additional information:

- Bulletin 04 Dispersion Techniques; Bulletin 07 Flow and Suspension Properties; Bulletin 08 - Emulsification Properties; Bulletin 21 - Formulating Semisolid Products
- Dispersion and neutralization videos under video gallery
- Technical Data Sheets, Test Procedures, Certificates, and other Formulations

Please contact your Lubrizol representative to get samples, quotations or further technical assistance.





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