

# 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
	<b>Part A:</b>	
1.	<b>Carbopol® 980 NF polymer</b>	2.5
2.	Deionized water	53.0
	<b>Part B:</b>	
3.	Salicylic acid	2.0
4.	Ethanol	40.0
	<b>Part C:</b>	
5.	2-Amino-2-methyl-1 propanol	q.s. to pH 4.0
6.	Deionized water	q.s. to 100.0
	<b>TOTAL:</b>	<b>100.00</b>

Lab batch size - 600 gm

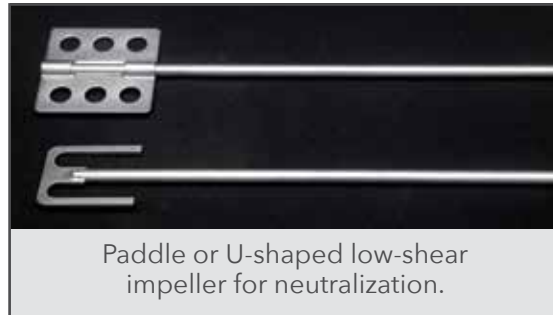
## Process:

- 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.
- Part B:** Dissolve salicylic acid in ethanol.
- Add Part B ingredients to Part A ingredients and mix thoroughly.
- 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
<b>Appearance:</b> Clear gel	Passed 3 freeze/thaw cycles
<b>pH:</b> 4.00	Stable for a minimum of 6 months when stored under the following ICH conditions: Long term (25 ± 2°C / 60 ± 5% relative humidity)
<b>Viscosity (cP)*:</b> 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.**

