

# Formulation

Name	<b>ALCOHOL-FREE FOAMING HAND SANITIZER</b>	
No.	1377	
Description	<p>If you're tired of alcohol based hand sanitizers drying out your hands, try this alternative instead. This alcohol-free, water based hand sanitizer still meets the U.S. FDA recommendations for sanitizing hand rubs*** but is more skin-friendly. For best results, we recommend using this formulation in a self-foaming pump applicator.</p> <p>***when formulated as directed by the U.S. FDA Consumer Antiseptic Rub Final Ruling 84 FR 14847</p>	
Formulation	<p><b>INGREDIENTS:</b></p> <p>=== Phase 1 ===                  Deionized Water                  Natrosol™ 250 HHR (Ashland) Hydroxyethylcellulose                  AMPHOSOL® HCG-HP</p> <p>=== Phase 2 ===                  Benzalkonium Chloride                  AMMONYX® CETAC-30</p> <p>=== Phase 3 ===                  Microcare® BDB (Thor) Benzyl Alcohol (and) Dehydroacetic Acid (and) Benzoic Acid                  Fragrance</p> <p>=== Phase 4 ===                  Sodium Hydroxide, 25% solution                  Citric Acid, 50% solution</p> <p><b>Total</b></p>	<p><u>% by Weight</u>    <u>Functionality</u></p> <p>97.660 Diluent                  0.050 Film Former                  0.550 Surfactant</p> <p>0.260 Antimicrobial Agent                  0.670 Foam Booster</p> <p>0.710 Preservative                  0.100 Fragrance</p> <p>q.s. pH Adjuster                  q.s. pH Adjuster</p> <hr/> <p><b>100.000</b></p>
Procedure	<ol style="list-style-type: none"> <li>1. Add Phase 1 ingredients to the main vessel with regular mixing in order listed above. Ensure each ingredient is fully incorporated and the batch is uniform before adding the next ingredient.</li> <li>2. Adjust the pH of the batch to 8.5 using Sodium Hydroxide, 25% solution. The Sodium Hydroxide, 25% solution should be added with mixing. Continue mixing the batch until the batch contains no globules.</li> <li>3. Adjust the pH of the batch to 6.0 with Citric Acid, 50% solution.</li> <li>4. Add each Phase 2 ingredient with mixing to the main vessel, ensuring that the batch is crystal clear before adding the next ingredient.</li> <li>5. Add each Phase 3 ingredient with mixing to the main vessel, ensuring that the batch is clear and uniform before adding the next ingredient.</li> <li>6. Adjust pH of the batch to 6.0 and adjust with Citric Acid, 50% solution and/or Sodium Hydroxide, 25% solution, as needed.</li> </ol>	
Physical Properties	Appearance, as is pH, as is Viscosity, as is	Clear to slightly hazy liquid 5.5 - 6.5 (Target: 6.0) Water thin

Storage/ Stability	3 months at room temperature	Stable
	3 months at 40°C	Stable
	Freeze/Thaw, cycles	Pass
Instructions for Use	With a foaming pump, dispense product onto hands and distribute evenly.	
External Comment	This formulation was tested internally according to U.S. FDA Efficacy Testing as outlined in 21 CFR Part 310. Customers need to formally run third-party testing for commercialization.	
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For Additional Assistance	AMPHOSOL® AMMONYX®	

For applications or product handling assistance, call our Technical Service Department at 1-800-745-7837 (U.S.) or 011-334-76-505-100 (Europe).  
For ordering assistance, call our Account Service Department at 1-800-457-7673.

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