



Formulation

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| Name | LIQUID DISH DETERGENT USING BIO-SOFT® S-120 | |
| No. | 1273 | |
| Description | This liquid dishwash formulation provides good cleaning and foaming performance in manual dishwash applications. | |
| Formulation | INGREDIENTS: | <u>% by Weight</u> <u>Functionality</u> |
| | Water | q.s. to 100.00 Carrier |
| | Sodium Hydroxide (Caustic Soda) | 1.80 Neutralizer |
| | BIO-SOFT® S-120 | 6.75 Primary Surfactant |
| | STEOL® CS-230 | 18.10 Primary Surfactant |
| | AMMONYX® LMDO | 3.00 Secondary Surfactant |
| | Citric Acid, 50% Solution | As Needed pH Modifier |
| | Sodium Chloride | 1.00 Viscosity Builder |
| | Preservative, Dye, Fragrance, etc. | q.s. |
| | Total | 100.00 |
| Procedure | <ol style="list-style-type: none"> 1. Charge water and add sodium hydroxide while mixing. 2. Slowly add the BIO-SOFT® S-120 acid and mix until homogeneous. Note: This neutralization generates heat. Keep the temperature below 50 °C (122 °F) while neutralizing. 3. Check the pH, and if it is below 5, adjust with Sodium Hydroxide until it is above 5. 4. Once the pH is above 5, add the STEOL® CS-230 and mix until homogeneous. 5. Add the AMMONYX® LMDO and mix until homogeneous. Check the pH. 6. Use Citric Acid, 50% Solution or Sodium Hydroxide to adjust the pH to between 6.5 - 8.5. 7. Add preservative, dye, fragrance and other additives and mix until homogeneous. 8. Add the sodium chloride to increase the viscosity and mix until homogeneous. <p>NOTE: STEOL® CS-130 or STEOL® CS-330 may be used in place of STEOL® CS-230 without affecting the performance or stability of the formulation, but the typical viscosity range may be different. See the "External Comment" section for the alternate viscosity ranges.</p> | |
| Physical Properties | Appearance at 25 °C | Clear liquid |
| | pH, as is | 6.5-8.5 |
| | Viscosity at 25 °C, cps | 1,300 - 1,900 |
| | Density at 25 °C, lbs/U.S. gal | 8.59 |
| | Density at 40 °C, lbs/U.S. gal | 8.47 |
| Storage/Stability | Freeze/Thaw (3 cycles) | Pass |
| | 6 weeks at 4 °C (39 °F) | Stable |
| | 6 weeks at 25 °C (77 °F) | Stable |
| | 6 weeks at 40 °C (104 °F) | Stable |
| Instructions for Use | <p>Squirt a small amount of detergent into sink and fill sink with warm/hot water. Alternately, squirt a small amount of detergent onto damp sponge or washcloth.</p> <p>The performance of this formulation is equal to or slightly better compared to two U.S. consumer economy brand dish detergents.</p> | |

External
Comment

If using STEOL® CS-130 instead of STEOL® CS-230, the viscosity range is 1,300 - 1,900 cps. If using STEOL® CS-330 instead of STEOL® CS-230, the viscosity range is 800 - 1,400 cps.

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Additional
Assistance

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).
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Revision Date: Publication Date: 07/30/2018 © 2018, Stepan Company. All rights reserved.