

Phase	INCI Ingredients	Trade Name (Supplier)	%ww
A	Water	Water	QS to 100
A	Trisodium Ethylenediamine Disuccinate	Natrquest E30 (Innospec)	0.10
A	Glycerin	Glycerin	1.00
B	Cocamidopropylamine Oxide	Empigen® OS/A (Innospec)	15.00
B	Decyl Glucoside	Pureact Gluco D (Innospec)	5.00
B	Cocamidopropyl Betaine	Empigen® BS/O (Innospec)	7.00
B	Cocamide MIPA	Empilan® CIS (Innospec)	1.00
B	PEG-120 Methyl Gluceth Dioleate	Methyl Gluceth DOE 120KC (Chemtec)	1.50
C	Phenoxyethanol (and) Ethylhexylglycerin	Euxyl® PE9010 (Schulke)	1.00
C	Benzalkonium Chloride	Empigen® BKC 50 (Innospec)	0.10
D	Water (and) Citric Acid	Citric Acid (50% solution)	QS pH to 5.5-6.0

### Preparation Procedure and Properties

1. Charge Water into main mixing vessel. Blend in Natrquest E30 and Glycerin. Mix until clear and uniform.
2. Begin heating batch to 60°C. Slowly blend in Phase B and mix until flakes have melted and batch is uniform.
3. Begin cooling batch to 45°C, then add Phase C.
4. Adjust pH to 5.5-6.0 using Citric Acid (50% solution).

Appearance:	Crystal clear hand soap
pH:	5.5-6.0
Viscosity:	1,800cP – 3,000 cP Brookfield viscometer DV-E @ 20 rpm, spindle 5 @ 25°C
Stability:	Passed 8 weeks at 45°C, 25°C, 5°C and 3 F/T cycles

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