



Chemical Systems

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Reg. No: CK2005/156636/23 VAT No: 4570227746

Technical Data Sheet

4 January 2010

Product:

HANDconc-BZ-CLR

Description:

Liquid Hand Soap - Concentrate

Used as a Liquid Hand Dispenser Soap. This pour-able liquid concentrate consists of Anionic, Amphoteric & Non Ionic Surfactants, Water Conditioners, Sterilizers and Preservative. It dissolves in water in 15 minutes with agitation, or 3-5 hours without. Once fully dissolved; **OPTIONAL** – Add Required amounts of Fragrance and Dye of Choice, it only requires the addition of a measured quantity of Salt (\pm 2-3%), to produce a finished transparent **Liquid Hand Soap** in keeping with market standards.

Active Content: Surfactant 61%

Recommended Dilutions:

1:11.5 (8%) – Economy Product (4.9% Active)
1:9 (10%) – Standard Product (6.1% Active)
1:7.3 (12%) - Premium Product (7.3% Active)

Form: Heavy Liquid

Colour: Clear, transparent

Odour: Typical

pH: 6.5 – 7.5

Viscosity: 8 500cps @ 25°C Brookfield RVT #6 Spindle @ 5 RPM

Packing: 20 Kg Bucket - Polypropylene
200 Kg Open top drum – High Density Polyethylene

Precautions: May cause irritation due to high concentration.

Handling: Non-Flammable. Keep containers closed to prevent ingress of water. Due to the highly concentrated nature of the product it is recommended that processing staff wear gloves, eye protection & respiration apparatus when handling the raw concentrate.



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Dilution Chart - *HANDconc B2-CLEAR*

% Use	Economy			Standard			Premium		
	8%			10.00%			12%		
Ratio	1:11.5			1:9			1:7.3		
Batch Size)	Conc	Water	2.4% Salt	Conc	Water	2.0% Salt	Conc	Water	1.8% Salt
2	0.16	1.84	0.048	0.2	1.8	0.04	0.24	1.76	0.036
5	0.4	4.6	0.12	0.5	4.5	0.1	0.6	4.4	0.09
10	0.8	9.2	0.24	1	9.0	0.2	1.2	8.8	0.18
20	1.6	18.4	0.48	2	18.0	0.4	2.4	17.6	0.36
50	4	46	1.2	5	45.0	1	6	44	0.9
100	8	92	2.4	10	90.0	2	12	88	1.8
200	16	184	4.8	20	180.0	4	24	176	3.6
250	20	230	6	25	225	5	30	220	4.5
300	24	276	7.2	30	270	6	36	264	5.4
500	40	460	12	50	450	10	60	440	9
1000	80	920	24	100	900	20	120	880	18
2000	160	1840	48	200	1800	40	240	1760	36
3000	240	2760	72	300	2700	60	360	2640	54

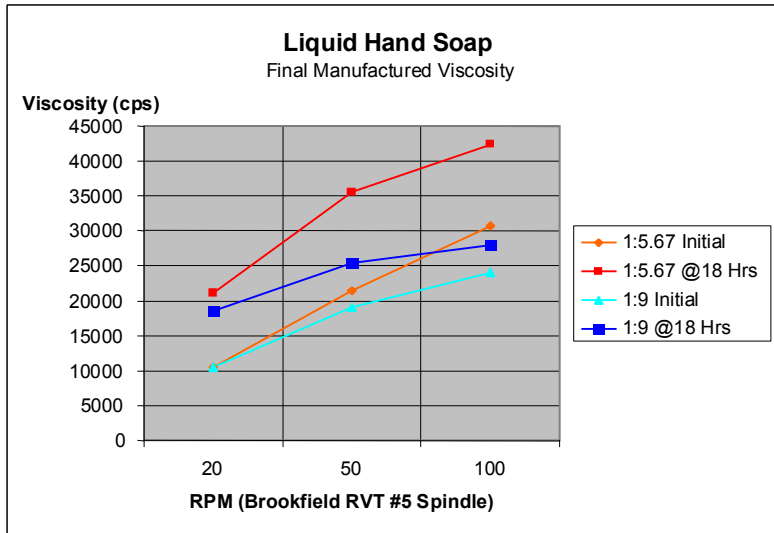
Directions for Use

Using the chart above, first decide on the size of the batch that you wish to make (Orange column). Now decide on the dilution (strength) of your finished product (Blue rows across the top). Let's assume you decide to make 200 Litres of **Standard** Liquid Hand Soap at a strength of 1:9 (10%). If you look across from the number **200**, in the orange block, to the pink column under **1:9** you will see that you need **20Kg of Ecwamix HANDconc-B2-CLR**. The green column to its right tells you that you need **180 Litres of water**, and the yellow column to the right of that tells you that you will need **4KG of Salt**.

1. Fill the tank with the Required amount of **Water**(180Lt/Kg) .
2. Using your scale, weigh 20Kg of **Ecwamix HANDconc-B2-CLR** into a bucket/s, and weigh 4kg of Salt into another clean bucket.
3. Place your mixer in the mixing tank and start it running at a moderate speed.
4. Now steadily pour in the **Ecwamix HANDconc-B2-CLR**, scraping out as much from the bucket/s as possible. Leave the mixer running for at least 15 minutes
5. **OPTIONAL:** Add the required Fragrance And Dye of Choice.
6. Switch off the mixer after 15 minutes and allow the mixture to stand for about half an hour, the bubbles will come to the top!
7. Start the mixer again at a Low Speed , and begin to slowly pour in the salt. After about half the salt has been poured in, the mixture will begin to thicken. You will need to increase the speed of the mixer while adding the remaining salt, keeping the mixture moving all the time. NB: you don't want to mix too fast or you may cause lots of bubbles in your product. Don't panic if you do, they will float to the top but it will take a few hours!
8. Once all the salt has been added, continue mixing for 5 minutes at the highest speed you can, without sucking in air. If necessary, add more water to bring the batch up to the 200 Litre mark.
9. Now switch off the mixer and let the batch stand for 10 minutes then check with a spoon to see if your product is thick enough, just remember that it will get slightly thicker once it has stood for about 12 Hours.

Congratulations, you have just manufactured your first batch of Liquid Hand Soap!

Finished Product – Viscosity Analysis



A common habit of literally every consumer is to judge the quality of a product, such as a Liquid Hand Soap, by its viscosity (thickness). Ironically, it is very easy these days to create a vastly more powerful product with a viscosity like that of water, as much as it is possible to make plain water as thick as a Liquid Hand Soap. And unfortunately the latter situation does occur, with many low quality products using auxiliary thickeners to hide the fact that they don't contain sufficient active material. Building stable and acceptable viscosity into a Liquid Hand Soap has long been a problem that has plagued the manufacturers of economy products. The reason for this is

that they rarely understand the interactions of the various ingredients with respect to their contribution to the viscosity of the end product. It is also true to say that some systems use more active ingredient than may be necessary, in order to guarantee a suitable and stable viscosity - this is obviously an unnecessary expense. With many systems, the final addition of salt (to increase the viscosity) is a very delicate issue. It is at this point that the entire batch can be ruined by the addition of too much salt, too little often appears good for a while but then slips backwards to a watery product some days later. We believe we've taken the guesswork out of the equation! The above graphs indicate that our product, even at the lower dilution of 1:9, yields viscosities 15% higher than is required. This test was conducted to establish how high the viscosity could be driven and how much salt the system could tolerate before collapsing. Despite an almost 50% over dosage of salt the system simply yielded a very high viscosity that actually increased further after 18 hours! The results obtained indicate that our product will reliably deliver suitable and stable viscosity, and further tolerate an unusually high margin of error. These factors substantially reduce the manufacturing risks and simplify the process.

Disclaimer / Non-warranty

This product has been subjected to limited stability tests and has been shown to perform well. However formulators should establish their own long term stability and functionality tests. The information contained herein is to our best knowledge true and accurate, but since the conditions of use are beyond our control, **Ecwamix Chemical Systems** disclaims any liability in connection with the use of this product and/or information. Warranty extends only as far as to the replacement of material shipped if not compliant with the specification as set out in the attached "Certificate of Analysis" and within the expiry period of the said product. All recommendations or suggestions are made without guarantee. It is good practice to conduct one's own safety/stability tests on all final Formulations prior to marketing.