



Chemical Systems

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

Technical Data Sheet

4 January 2010

Product:

DISHconc-BZ-CLR

Description:

Manual Dishwashing liquid - Concentrate

This pour-able liquid concentrate consists of Anionic & 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- Stir in a Fragrance and/or Dye of Choice, then it only requires the addition of a measured quantity of Salt ($\pm 2\%$), to produce a finished dishwashing liquid of impressive viscosity, appearance & value for money.

Active Content: Surfactant 71 - 73%

Recommended Dilutions:

1:9 (10%)	– Economy	Product (7.2% Active)
1:7 (12.5%)	– Mid market	Product (9.0% Active)
1:5.67 (15%)	– Mid market	Product (10.5% Active)
1:4 (20%)	- Premium	Product (14.4% Active)

Form: Viscous Liquid

Colour: Clear, translucent

Odour: Typical

pH: 7.0 - 8.0

Viscosity: 22 000cps @ 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 – Ecwamix DISHconc B2- Clear : Dishwashing Liquid

% Use	Economy			Standard			Premium			
	10%			12.50%			20%			
	1:9		2.4%	1:7		2.0%	1:4		1.6%	
Ratio	Conc	Water	Salt	Conc	Water	Salt	Conc	Water	Salt	
Batch Size that you wish to make (in Litres)	2	0.20	1.80	0.05	0.25	1.75	0.04	0.40	1.60	0.03
	5	0.50	4.50	0.12	0.63	4.38	0.10	1.00	4.00	0.08
	10	1.00	9.00	0.24	1.25	8.75	0.20	2.00	8.00	0.15
	20	2.00	18.00	0.48	2.50	17.50	0.40	4.00	16.00	0.30
	50	5.00	45.00	1.20	6.25	43.75	1.00	10.00	40.00	0.75
	100	10.00	90.00	2.40	12.50	87.50	2.00	20.00	80.00	1.50
	200	20.00	180.00	4.80	25.00	175.00	4.00	40.00	160.00	3.00
	250	25.00	225.00	6.00	31.25	218.75	5.00	50.00	200.00	3.75
	300	30.00	270.00	7.20	37.50	262.50	6.00	60.00	240.00	4.50
	500	50.00	450.00	12.00	62.50	437.50	10.00	100.00	400.00	7.50
	1000	100.00	900.00	24.00	125.00	875.00	20.00	200.00	800.00	15.00
	2000	200.00	1800.00	48.00	250.00	1750.00	40.00	400.00	1600.00	30.00
3000	300.00	2700.00	72.00	375.00	2625.00	60.00	600.00	2400.00	45.00	

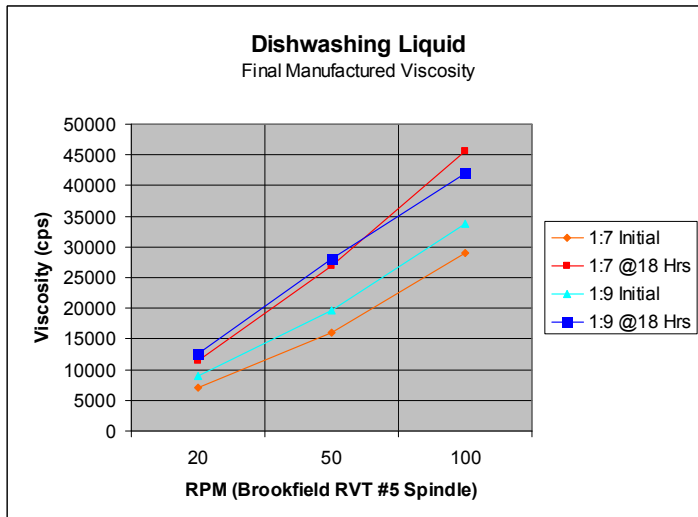
Directions for Use

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** Dishwashing liquid at a strength of 1:7 (12.5%). If you look across from the number **200**, in the orange block, to the pink column under **1:7** you will see that you need **25Kg of Ecwamix DISHconc-B2-CLR**. The green column to its right tells you that you need **175 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** (175Lt/Kg).
2. Using your scale, weigh 25Kg of **Ecwamix DISHconc-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 DISHconc-B2-CLR**, scraping out as much from the bucket/s as possible. Leave the mixer running for at least 15 minutes, the mixture will look cloudy – but this is just because of air bubbles!
5. 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!
6. **OPTIONAL:** Stir in Measured amounts of a Fragrance and/or a Dye of Choice.
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 Dishwashing Liquid!

Finished Product – Viscosity Analysis



A common habit of literally every consumer is to judge the quality of a product, like a dishwashing liquid, 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 dishwashing liquid. 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 dishwashing liquid 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 dilutions of 1:9 & 1:7, yield viscosities 25% 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.