Description
DWB is a formulated blend of powdered salts to increase mineral content of brewing liquor to produce the desired beer characteristics.

Benefits

- Reduces the pH during mashing and wort boiling which improves enzyme activity
- Promotes the precipitation of unwanted proteins in the kettle, hop back or whirlpool
- Improves health and vigour of the yeast
- Improves extract yield and fermentability
- Reduces risk of infection
- Reduces extraction of undesirable silicates, tannins and polyphenols
- Reduces beerstone and can prevent gushing in beer
- Reduces colour formation in the copper
- Improves beer fining performance
- Promotes head retention on beer
- Adds chloride which impart palate fullness
- Adds sulphate which give beer a drier and more bitter effect

Principle

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	Bitter	Strong Bitter	Lager (65°C)	Porter	Mild	Wheat	Stout
Calcium	180-220	220-220	120-140	130-160	120-140	180	120-140
Alkalinity	30-50	30-50	30-50	100	100	35	150
Chloride	150-300	200-300	Low	200-300	300	250	300
Sulphate	250-400	300-400	Low	200-300	150	220	100

TABLE 1. TYPICAL LEVELS OF IONS IN BREWING LIQUOR USED TO PRODUCE DIFFERENT TYPES OF BEER (ALL FIGURES ARE IN MILLIGRAMS PER LITRE COMMONLY KNOWN PPM)

The objective of liquor treatment is to convert your water supply into acceptable brewing liquor. Treating your brewing liquor is vitally important. When applied correctly all the steps throughout the brewing process will be at the opti-mum pH. If it is applied incorrectly, you will get poor extract and beer that is difficult to clarify.

AMS adjusts liquor alkalinity without the need for boiling by removing unwanted carbonate ions and adding desirable ions, such as chloride and sulphate in the correct ratios, ideal for most beer styles.

Alkalinity
Alkalinity is mainly caused by calcium carbonate and bicarbonate. The alkalinity of your liquor plays a very important role in pH control. It causes high pH values throughout the brewing process. Hydrogen ions are removed from solution, thus wort pH remains high which results in low extract yield; presence of undesirable protein components; worts and beers prone to infection; increased extraction of silicates, polyphenols and tannins during sparge and harsh “after tastes” in the finished beer.

pH
The pH of the liquor will have little effect on the pH of the wort and beer. Alkalinity and calcium are more important in pH control. Once you have established correct levels of these ions it is advisable to follow the guidelines of typical pH measurements in the brewing process shown below.

Raw Liquor	pH 6.0-8.0
Treated Liquor	pH 6.0-8.0
Mash	pH 5.2-5.5
1st Runnings	pH 4.8-5.2
Last Runnings	pH 5.4-5.6
Wort in Copper	pH 5.1-5.4
Wort after boil	pH 4.9-5.3
Beer after fermentation	pH 3.7-4.2

TABLE 2. TYPICAL pH MEASUREMENTS THROUGHOUT THE BREWING PROCESS

Rates of DWB should be determined based on the final brew-length and are dependent on the levels of calcium, sulphate and chloride present in your untreated liquor.
Levels of the relevant ions present in your liquor can be obtained from your Local Water Authority.

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Please note;

Local Authority reports can provide results that are not up to date and this may affect your calculations for ideal dosage rates. It is advisable to check the analysis of your water at least once a year, or on a more regular basis if the supply changes.
Once you have obtained your analysis of your raw liquor you can then calculate your dosage rates by selecting which beer type you wish to brew and refer to table 1, this will help you determine how many ions to add.

Knowing this information, you can calculate the amount of DWB needed to increase the relevant ions to the ideal level.