

TECHNICAL INFORMATION SHEET: LACTIC ACID 80% - LIQUOR TREATMENT

PRODUCT NAME:**LACTIC ACID 80%****PRODUCT CODE:****LACA****COMMODITY CODE:****29181100****PACKAGING:****6, 25, 240 AND 1200****KG**

Description

Lactic Acid (E270) is a ready for use acid used to reduce alkalinity in brewing liquor.

The lactic acid is Food Grade and made by fermentation of natural (beet or cane) sugar.

Benefits

- Reduces the alkalinity levels of brewing liquor stimulating maximum enzyme activity in the wort enabling optimum pH levels throughout the whole brewing process
- Improves extract yield and fermentability
- Suitable for beers where no other anions are needed, for example pilsner lagers
- Can also be used to reduce the pH of final wort or products.

Guidelines for use

- Check that the product is within its shelf life before use
- Test your water regularly to obtain ideal dosage rates for the best results
- Read the Safety Data Sheet prior to use



TECHNICAL SUPPORT

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REGULATORY COMPLIANCE INFORMATION

Refer to the **Product Specification Sheet** or contact us on
tel: +44 (0) 115 978 5494 | e: compliance@murphyandson.co.uk

HEALTH & SAFETY INFORMATION

Refer to the **Safety Data Sheet (SDS)**

	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)

Principle

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 optimum pH. If it is applied incorrectly you will get poor extract and beer that is difficult to clarify.

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 in Table 2.

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

Application

Lactic Acid can be added to either the cold or hot liquor tank and should be thoroughly mixed. Time should be allowed to release the carbon dioxide produced by the neutralisation of excess carbonate. Please take into account any residual treated liquor when topping up your tank as this will adversely effect alkalinity levels. Addition of Lactic Acid to the hot liquor tank has the added benefit of preventing scale build up on the heating elements.

Rates of use

Addition rates for Lactic Acid are dependant on the levels of alkalinity in your untreated liquor. Raw liquor can have an alkalinity of up to 300 mg/litre. Brewers need to reduce their alkalinity down to a range of 30–100 ppm (refer to table 1) depending on which beer styles they wish to produce. In some cases raw liquor can already be in that range so no acid treatment is required.

Knowing this information you can calculate the amount of Lactic Acid needed to reduce your alkalinity to the ideal level. For the beer style you wish to produce.

Murphy's are more than happy to help you calculate these dosage rates.

Storage and shelf life

- Store in cool conditions away from direct sunlight
- Keep in original container
- Keep containers sealed when not in use
- Storage temperature is 10°C - 20°C
- The shelf life at the recommended storage temperature is 5 years from the date of manufacture

PRODUCT	LACTIC ACID	PRODUCT CODE	LACA
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