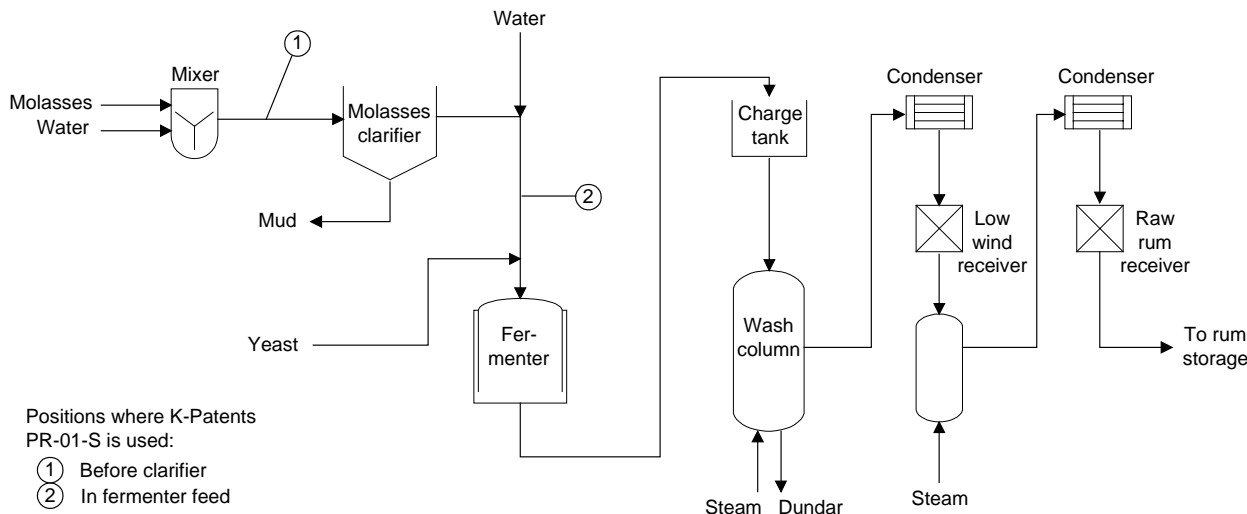
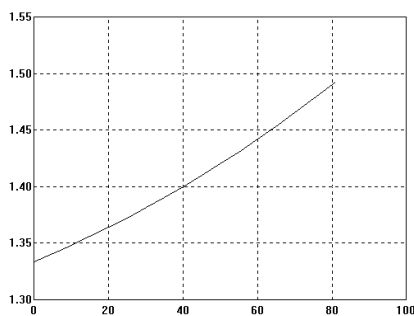


## Rum Distillation Process



### Rum

Chemical curve: R.I. per Brix



R.I. Reference Temp. 20°C

### Introduction

Rum is derived from molasses, which is a thick black viscous by-product of the sugar industry. Molasses contains about 50% sugar, 25% water, 15% inorganic salts, and about 10% other organic matter.

### Application

#### Clarification of molasses

Molasses is diluted with water and recycled product from the wash column. The mixture is then heated and a flocculent is added

to help unwanted inorganic impurities settle as sludge in the clarifier tank. The clarified molasses is pasteurised in the heating process to destroy unwanted bacteria.

#### Fermentation

A yeast solution is added to the molasses and mixed in the fermentation tanks. Enzymes from the yeast convert sugar to ethanol plus carbon dioxide in nearly equal proportions. Initially the solution contains about 16% sucrose which drops to about 8% alcohol after 30 hours.

#### Stillhouse

The fermented mixture is pumped into the top of tall wash columns which are special distillation columns heated by steam. Alcohol vapour is driven off at the top at about 50% by volume.

The condensed alcohol mixture is diluted with water in the low wine charger tank and fed in batches to pot stills, which are like large kettles where the liquid is heated. The product from the beginning and the end of the batch distillation process is rejected to waste streams for reprocessing, while

the raw rum produced is at a strength of about 78% alcohol.

#### The maturation vats

From the raw rum receiver, the clear water liquid is transferred to maturing vats, where it is gradually converted from raw alcohol to smooth rum. During maturing, colour is adjusted by addition of carefully controlled amounts of a special alcohol caramel. After maturing the rum is diluted from storage strength to the different bottling strengths.

### Installation

K-Patents Process Refractometer, PR-01-S is used to measure and control the molasses dilution with dunder and water to a strength of about 47 Brix. K-Patents PR-01-S also measures and controls the feed to fermenters at about 28 Brix.