

**BULLETIN RELATIVE  
TO PRODUCTION OF  
DISTILLED SPIRITS**

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Bulletin Relative to Production of Distilled Spirits by Various

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TREASURY DEPARTMENT,  
OFFICE OF COMMISSIONER OF INTERNAL REVENUE,  
*Washington, June 1, 1912.*

*To collectors and all other internal-revenue officers:*

The data contained in this bulletin has been compiled and is furnished for the information of all internal-revenue officers, and particularly for the information of those whose duties bring them in touch with the operations of distilleries.

There appears to have been drawn over the operation of distilleries more or less of mystery, when, as a matter of fact, the manufacture of distilled spirits is not a complicated process, but every step is a simple application of well-known laws of chemistry and physics to factors such as material and equipment, which produce, within lines of variation capable of definite ascertainment, very constant results. It is hoped and believed that the information furnished herein, so far as all internal-revenue officers are concerned, removes anything that may be of mystery from the operations of these plants; and it is further expected, and in the future will be required, that every distillery officer shall sufficiently familiarize himself with the simple laws of chemistry and physics involved in the production of spirits so as to understand their application to the materials and the equipment in the plant to which he is assigned.

It is not intended that this bulletin shall constitute a primer or a guide to the production of spirits. An effort has been made to give a general description of the various processes in common use, and an explanation of the reason why certain things are done; and, further than this, that the information herein shall furnish a method by which, from knowing what is done, the officer assigned to a distillery can ascertain whether or not the amount of distilled spirits normally to be expected has resulted therefrom.

Most of the steps are described generally. Where examples or temperatures are given, or processes are discussed, it means that the given examples, temperatures, or processes, are but types which may be and are varied, depending on the equipment or ideas of the particular distiller, the variation, however, being within lines capable of definite ascertainment. The basic principles involved are the same whether the plant is located in one section of the country or another, or whether one process or another is followed.

ROYAL E. CABELL,  
*Commissioner.*



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## INTRODUCTION.

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Chemically, alcohol is the class name for a group of compounds of which ethyl alcohol, or, as commonly called "grain alcohol," is the second member of the series. Wherever the term alcohol is used herein it is used in its commercial meaning; that is, ethyl alcohol (or grain alcohol).

Alcohol is a product resulting from the fermentation of fermentable substances (sugar). There are many materials which contain such substances and in each case they may be used for the production of distilled spirits. Whether they are so used or not depends upon the commercial factor, i. e., the cost of raw material and cost of manufacture.

The material is prepared for fermentation by a process called mashing. After the mash has been placed in the fermenter, fermentation is developed by means of yeast; this may be added by the distiller (as is usually the case) or may be developed from yeasts which drop into the tubs from the air. After the fermentable material has been changed into alcohol the next step is to separate this alcohol in such strength that it can be used for whatever purpose intended. This process is called distillation. The different kinds of stills and steps in the process will be described later.

