

each uncorrected reading of a proof hydrometer.

(Sec. 201, Pub. L. 85-859, 72 Stat. 1358, as amended (26 U.S.C. 5204))

**§ 30.66 Table 6, showing respective volumes of alcohol and water and the specific gravity in both air and vacuum of spirituous liquor.**

This table provides an alternate method for use in ascertaining the quantity of water needed to reduce the strength of distilled spirits by a definite amount. To do this, divide the alcohol in the given strength by the alcohol in the required strength, multiply the quotient by the water in the required strength, and subtract the water in the given strength from the product. The remainder is the number of gallons of water to be added to 100 gallons of spirits of the given strength to produce a spirit of a required strength.

*Example.* It is desired to reduce spirits of 191 proof to 188 proof. We find that 191 proof spirits contains 95.5 parts alcohol and 5.59 parts water, and 188 proof spirits contains 94.0 parts alcohol and 7.36 parts water.

95.5 (the strength of 100 wine gallons of spirits at 191 proof) divided by 94.0 (the strength of 100 wine gallons of spirits at 188 proof) equals 1.01.

7.36 (the water in 188 proof) multiplied by 1.01 equals 7.43.

7.43 less 5.59 (the water in 191 proof spirits) equal 1.84 gallons of water to be added to each 100 wine gallons of 191 proof spirits to be reduced.

This rule is applicable for reducing to any proof; but when it is desired to reduce to 100 proof, it is sufficient to point off two decimals in the given proof, multiply by 53.73, and deduct the water in the given strength. Thus, to reduce 112 proof spirits to 100 proof:

$1.12 \times 53.73 - 47.75$  equals 12.42 gallons of water to be added to each 100 wine gallons of spirits to be reduced.

This table may also be used to obtain the proof gallonage of spirituous liquor according to weight and percent of proof.

*Example.* It is desired to determine the number of gallons in 400 pounds of spirits of 141 percent of proof. Multiply the weight of one gallon of water in air by the specific gravity in air of the spirits—8.32823 by 0.88862—the product (7.40063) divided into 400 gives 54.049 wine gallons, which rounded to

the nearest hundredth is 54.05 and multiplied by 1.41 gives 76.2 proof gallons. In rounding off where the decimal is less than five, it will be dropped; if it is five or over a unit will be added.

(Sec. 201, Pub. L. 85-859, 72 Stat. 1358, as amended (26 U.S.C. 5204))

**§ 30.67 Table 7, for correction of volume of spirituous liquors to 60 degrees Fahrenheit.**

This table is prescribed for use in correcting spirits to volume at 60 degrees Fahrenheit. To do this, multiply the wine gallons of spirits which it is desired to correct to volume at 60 degrees Fahrenheit by the factor shown in the table at the percent of proof and temperature of the spirits. The product will be the corrected gallonage at 60 degrees Fahrenheit. This table is also prescribed for use in ascertaining the true capacity of containers where the wine gallon contents at 60 degrees Fahrenheit have been determined by weight in accordance with Tables 2, 3, 4, or 5. This is accomplished by dividing the wine gallons at 60 degrees Fahrenheit by the factor shown in the table at the percent of proof and temperature of the spirits. The quotient will be the true capacity of the container.

*Example.* It is desired to ascertain the volume at 60 degrees Fahrenheit of 1,000 wine gallons of 190 proof spirits at 76 degrees Fahrenheit:

$1,000 \times 0.991$  equals 991 wine gallons, the corrected gallonage at 60 degrees Fahrenheit.

*Example.* It is desired to ascertain the capacity of a container of 190 proof spirits at 76 degrees Fahrenheit, shown by Table 2 to contain 55.1 wine gallons at 60 degrees Fahrenheit:

55.1 divided by 0.991 equals 55.6 wine gallons, the true capacity of the container when filled with spirits of 60 degrees temperature.

It will be noted the table is prepared in multiples of 5 percent of proof and 2 degrees temperature. Where the spirits to be corrected are of an odd temperature, one-half of the difference, if any, between the factors for the next higher and lower temperature, should be added to the factor for the next higher temperature.

*Example.* It is desired to correct spirits of 180 proof at 51 degrees temperature:

$1.006 (50^\circ) - 1.005 (52^\circ) = 0.001$  divided by 2 = 0.0005

### § 30.71

0.0005+1.005=1.0055 correction factor at 51 °F.

*Example.* It is desired to correct spirits of 180 proof at 53 degrees temperature:

1.005 (52°)–1.003 (54°)=0.002 divided by 2=0.001  
0.001+1.003=1.004 correction factor at 53 °F.

Where the percent of proof is other than a multiple of five, the difference, if any, between the factors for the next higher and lower proofs should be divided by five and multiplied by the degrees of proof beyond the next lower proof, and the fractional product so obtained should be added to the factor for the next lower proof (if the temperature is above 60 degrees Fahrenheit, the fractional product so obtained must be subtracted from the factor for next lower proof), or if it is also necessary to correct the factor because of odd temperature, to the temperature corrected factor for the next lower proof.

*Example.* It is desired to ascertain the correction factor for spirits of 112 proof at 47 degrees temperature:

1.006 (46°)–1.005 (48°)=0.001 divided by 2=0.0005  
0.0005+1.005=1.0055 corrected factor at 47 °F.  
1.007 (115 proof)–1.006 (110 proof)=0.001  
0.001 divided by 5=0.0002 (for each percent of proof)×2 (for 112 proof)=0.0004  
0.0004+1.0055 (corrected factor at 47 °F.)=1.0059 correction factor to be used for 112 proof at 47 °F

*Example.* It is desired to ascertain the correction factor for spirits of 97 proof at 93 degrees temperature:

0.986 (92°)–0.985 (94°)=0.001 divided by 2=0.0005  
0.0005+0.985=0.9855 corrected factor at 93 °F.  
0.986 (95 proof)–0.985 (100 proof)=0.001  
0.001 divided by 5=0.0002 (for each percent of proof)×2 (for 97 proof)=0.0004

### 27 CFR Ch. I (4–1–02 Edition)

0.9855 (corrected factor at 93 °F.)=0.0005=0.9851 correction factor to be used for 97 proof at 93 °F.

(Sec. 201, Pub. L. 85-859, 72 Stat. 1358, as amended (26 U.S.C. 5204))

### Subpart F—Optional Gauging Procedures

#### § 30.71 Optional method for determination of proof for spirits containing solids of 400 milligrams or less per 100 milliliters.

The proof of spirits shall be determined to the nearest tenth degree which shall be the proof used in determining the proof gallons and all fractional parts thereof to the nearest tenth proof gallon. The proof of spirits containing solids of 400 milligrams or less per 100 milliliters shall be determined by the use of a hydrometer and a thermometer in accordance with the provisions of § 30.23. However, notwithstanding the provisions of § 30.31, the proprietor may, at his option, add to the proof so determined the obscuration determined as prescribed in § 30.32.

(Sec. 201, Pub. L. 85-859, 72 Stat. 1358, as amended, 1362, as amended (26 U.S.C. 5211))

#### § 30.72 Recording obscuration by proprietors using the optional method for determination of proof.

Any proprietor using the optional method for determination of proof for spirits containing solids of 400 milligrams or less per 100 milligrams as provided in § 30.71 shall record the obscuration so determined on the record of gauge required by 27 CFR part 19.

(Sec. 201, Pub. L. 85-859, 72 Stat. 1358, as amended, 1362, as amended (26 U.S.C. 5211))