

Alcohol and Tobacco Tax and Trade Bureau, Treasury

§ 21.151

USES OF SPECIALLY DENATURED ALCOHOL¹—
Continued

Product or process	Code No.	Formulas authorized
Soaps, toilet	142	1, 3-A, 3-C, 23-A, 30, 36, 38-B, 39-B, 39-C, 40, 40-A, 40-B, 40-C.
Sodium ethylate, anhydrous (restricted).	524	2-B.
Sodium hydrosulfite (dehydration).	312	1, 2-B, 3-A, 3-C.
Soldering flux	035	1, 3-A, 3-C, 23-A, 30.
Solutions, miscellaneous.	485	1, 3-A, 3-C, 13-A, 23-A, 30, 32, 35-A, 40-B, 40-C.
Solvents and thinners (other than proprietary solvents or special industrial solvents).	042	1, 23-A, 30.
Solvents, special (restricted sale).	043	1, 3-A, 3-C.
Stains (wood)	053	1, 3-A, 3-C, 23-A, 30.
Sterilizing solutions	430	1, 3-A, 3-C, 13-A, 23-A, 30, 32, 37, 38-B, 44.
Theater sprays	470	3-A, 3-C, 37, 38-B, 39-B, 39-C, 40, 40-A, 40-B, 40-C.
Tobacco sprays and flavors.	460	4.
Toilet waters	122	38-B, 39-B, 39-C, 40, 40-A, 40-B, 40-C.
Transparent sheetings ..	032	1, 2-B, 3-A, 3-C, 13-A, 23-A.
Unclassified uses ²	900	1, 3-A, 3-C.
Vaccine (processing)	343	1, 2-B, 3-A, 3-C, 13-A, 23-A, 30, 32, 35-A.
Vinegar	511	18, 29, 35-A.
Vitamins (processing) ...	342	1, 2-B, 3-A, 3-C, 13-A, 23-A, 30, 32, 35-A.
Xanthates	573	1, 2-B, 29.
Yeast (processing)	342	1, 2-B, 3-A, 3-C, 13-A, 23-A, 30, 32, 35-A.

¹Other products or processes may be authorized under § 21.31(c).

²Persons desiring other formulas for this use should indicate the fact in the space provided for this purpose on TTB Form 5150.19.

[T.D. ATF-133, 48 FR 24673, June 2, 1983, as amended by T.D. ATF-199, 50 FR 9183, Mar. 6, 1985; T.D. ATF-435, 66 FR 5475, Jan. 19, 2001; T.D. ATF-442, 66 FR 11854, Mar. 1, 2001; T.D. TTB-140, 81 FR 59463, Aug. 30, 2016]

**Subpart G—Denaturants
Authorized for Denatured Spirits**

§ 21.151 List of denaturants authorized for denatured spirits.

Following is an alphabetical listing of denaturants authorized for use in denatured spirits:

DENATURANTS AUTHORIZED FOR COMPLETELY DENATURED ALCOHOL (C.D.A), SPECIALLY DENATURED ALCOHOL (S.D.A.), AND SPECIALLY DENATURED RUM (S.D.R.)

Acetaldehyde S.D.A. 29.

DENATURANTS AUTHORIZED FOR COMPLETELY DENATURED ALCOHOL (C.D.A), SPECIALLY DENATURED ALCOHOL (S.D.A.), AND SPECIALLY DENATURED RUM (S.D.R.)—Continued

Acetone, U.S.P	S.D.A. 23-A, 23-H.
Acetaldol	C.D.A. 18.
Alkylate	C.D.A. 20.
Almond oil, bitter, N.F.X	S.D.A. 38-B.
Alpha Terpineol	S.D.A. 38-B.
Ammonia, aqueous	S.D.A. 36.
Ammonia solution, strong, N.F. ...	S.D.A. 36.
Anethole, N.F.	S.D.A. 38-B.
Anise oil, N.F.	S.D.A. 38-B.
Bay oil (myrcia oil), N.F.XI	S.D.A. 38-B, 39-D.
Benzaldehyde, N.F.	S.D.A. 38-B.
Bergamot oil, N.F.XI	S.D.A. 38-B.
Boric acid, N.F.	S.D.A. 38-F.
Brucine alkaloid	S.D.A. 40.
Brucine sulfate, N.F.IX	S.D.A. 40.
<i>n</i> -Butyl alcohol	S.D.A. 44.
<i>tert</i> -Butyl alcohol	S.D.A. 39-B, 40, 40-A, 40-B, 40-C.
Camphor, U.S.P	S.D.A. 38-B.
Caustic soda, liquid	S.D.A. 36.
Cedar leaf oil, U.S.P.XIII	S.D.A. 38-B.
Chlorothymol, N.F.XII	S.D.A. 38-B, 38-F.
Cinnamic aldehyde (cinnamaldehyde), N.F.IX.	S.D.A. 38-B.
Cinnamon oil, N.F.	S.D.A. 38-B.
Citronella oil, natural	S.D.A. 38-B.
Clove oil, N.F.	S.D.A. 38-B.
Coal tar, U.S.P	S.D.A. 38-B.
Commint oil	S.D.A. 38-B.
Cyclohexane	S.D.A. 3-A.
Denatonium benzoate, N.F.	S.D.A. 1, 40-B.
Diethyl phthalate	S.D.A. 39-B, 39-C.
Distilled lime oil	S.D.A. 38-B.
Ethyl acetate	C.D.A. 35; S.D.A. 29, 35-A.
Ethyl ether	S.D.A. 13-A, 19, 32.
Ethyl tertiary butyl ether	C.D.A. 20.
Eucalyptol, N.F.XII	S.D.A. 37, 38-B.
Eucalyptus oil, N.F.	S.D.A. 38-B.
Eugenol, U.S.P	S.D.A. 38-B.
Formaldehyde solution, U.S.P.	S.D.A. 38-D.
Gasoline	C.D.A. 18, 19; S.D.A. 28-A.
Gasoline, unleaded	C.D.A. 18, 19, 20; S.D.A. 28-A.
Glycerin (Glycerol), U.S.P	S.D.A. 31-A.
Guaiaicol, N.F.X	S.D.A. 38-B.
Heptane	C.D.A. 18, 19; S.D.A. 2-B, 28-A.
Hexane	S.D.A. 2-B.
<i>n</i> -Hexane	S.D.A. 2-B.
High octane denaturant blend	C.D.A. 20.
Hydrochloric acid, N.F.	S.D.A. 38-F.
Iodine, U.S.P	S.D.A. 25, 25-A.
Isopropyl alcohol	S.D.A. 3-C.
Kerosene	C.D.A. 18, 19, 20.
Kerosene (deodorized)	C.D.A. 18, 19, 20.
L(-)-Carvone	S.D.A. 38-B.
Lavender oil, N.F.	S.D.A. 38-B.
Lemon oil	S.D.A. 38-B.
Menthol, U.S.P	S.D.A. 37, 38-B, 38-D, 38-F.
Methyl alcohol	S.D.A. 1, 3-A, 30.
Methylene blue, U.S.P	S.D.A. 4; S.D.R. 4.
Methyl isobutyl ketone	C.D.A. 18, 19; S.D.A. 1, 23-H.
Methyl <i>n</i> -butyl ketone	C.D.A. 18, 19; S.D.A. 1.
Methyl salicylate, N.F.	S.D.A. 38-B.
Methyl tertiary butyl ether	C.D.A. 20.
Mustard oil, volatile (allyl isothiocyanate), U.S.P.XII.	S.D.A. 38-B.

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DENATURANTS AUTHORIZED FOR COMPLETELY DENATURED ALCOHOL (C.D.A), SPECIALLY DENATURED ALCOHOL (S.D.A.), AND SPECIALLY DENATURED RUM (S.D.R.)—Continued

Naphtha	C.D.A. 20.
Natural gasoline	C.D.A. 20.
Nicotine solution	S.D.A. 4; S.D.R. 4.
Nitropropane, mixed isomers of	C.D.A. 18, 19; S.D.A. 1.
Peppermint oil, N.F	S.D.A. 38–B.
Peppermint oil, terpeneless	S.D.A. 38–B.
Phenol, U.S.P	S.D.A. 38–B.
Phenyl salicylate (salol), N.F.XI	S.D.A. 38–B.
Pine needle oil, dwarf, N.F.	S.D.A. 38–B.
Pine oil, N.F.	S.D.A. 38–B.
Poloxamer 407, N.F.	S.D.A. 38–F.
Polysorbate 80, N.F.	S.D.A. 38–F.
Potassium hydroxide	S.D.A. 36.
Potassium iodide, U.S.P	S.D.A. 25, 25–A.
Pyronate	C.D.A. 18.
Quassin	S.D.A. 40.
Quinine bisulfate, N.F.XI	S.D.A. 39–D.
Quinine sulfate, U.S.P	S.D.A. 39–D.
Raffinate	C.D.A. 20.
Rosemary oil, N.F. XII	S.D.A. 38–B.
Rubber hydrocarbon solvent	C.D.A. 18, 19, 20; S.D.A. 2–B, 28–A.
Safrole	S.D.A. 38–B.
Sassafras oil, N.F.XI	S.D.A. 38–B.
Shellac (refined)	S.D.A. 45.
Soap, hard, N.F.XI	S.D.A. 31–A.
Sodium iodide, U.S.P	S.D.A. 25, 25–A.
Sodium salicylate, U.S.P	S.D.A. 39–D.
Spearmint oil, N.F.	S.D.A. 38–B.
Spearmint oil, terpeneless	S.D.A. 38–B.
Spike lavender oil, natural	S.D.A. 38–B.
Storax, U.S.P	S.D.A. 38–B.
Straight run gasoline	C.D.A. 20.
Sucrose octaacetate	S.D.A. 40–A.

DENATURANTS AUTHORIZED FOR COMPLETELY DENATURED ALCOHOL (C.D.A), SPECIALLY DENATURED ALCOHOL (S.D.A.), AND SPECIALLY DENATURED RUM (S.D.R.)—Continued

Thyme oil, N.F.XII	S.D.A. 38–B.
Thymol, N.F	S.D.A. 37, 38–B, 38–F.
Tolu balsam, U.S.P	S.D.A. 38–B.
Toluene	C.D.A. 12–A; S.D.A. 2–B.
Turpentine oil, N.F.XI	S.D.A. 38–B.
Vinegar	S.D.A. 18.
Zinc chloride, U.S.P	S.D.A. 38–F.

[T.D. ATF–133, 48 FR 24673, June 2, 1983, as amended by T.D. ATF–442, 66 FR 12854, Mar. 1, 2001; T.D. TTB–140, 81 FR 59463, Aug. 30, 2016; T.D. TTB–196, 89 FR 87940, Nov. 6, 2024]

Subpart H—Weights and Specific Gravities of Specially Denatured Alcohol

§21.161 Weights and specific gravities of specially denatured alcohol.

The weight of one gallon of each formula of specially denatured alcohol at 15.56 °C. (60 °F.) is as listed in this section. The specific gravity of each formula of specially denatured alcohol at 15.56 °C./15.56 °C. (60 °F./60 °F.) in air is as listed in this section. (Weight of 1 gallon of water at 15.56 °C. (60 °F.) is 8.32823 pounds in air.)

WEIGHTS AND SPECIFIC GRAVITIES OF SPECIALLY DENATURED ALCOHOL ¹

[Slight deviations from this table may occur due to variations in specific gravities of authorized denaturants. Values for 190 proof determined experimentally in air. Other values calculated from these gravities.]

S.D.A. Formula No.	Finished formula (gals)	190 proof		192 proof		200 proof	
		Wt./gal. in air (lbs)	Sp. gr. in air	Wt./gal. in air (lbs)	Sp. gr. in air	Wt./gal. in air (lbs)	Sp. gr. in air
1	104.0	6.788	0.8151	6.756	0.8112	6.611	0.7938
2–B	100.5	6.795	.8159	6.762	.8119	6.612	.7939
3–A	105.0	6.787	.8149	6.755	.8111	6.611	.7938
3–C	105.0	6.784	.8146	6.752	.8107	6.608	.7935
4	100.8	6.823	.8193	6.791	.8154	6.640	.7973
13–A	109.7	6.740	.8093	6.710	.8057	6.572	.7891
18	195.4	7.802	.9368	7.785	.9348	7.708	.9255
19	197.9	6.468	.7766	6.452	.7747	6.375	.7655
23–A	107.9	6.788	.8151	6.758	.8115	6.619	.7948
23–H	109.45	6.785	.8147	6.755	.8111	6.617	.7945
25	100.9	7.080	.8501	7.047	.8462	6.897	.8282
25 ²	100.9	7.083	.8505	7.050	.8465	6.900	.8285
25–A	102.5	7.119	.8548	7.087	.8510	6.939	.8332
25–A ²	102.5	7.117	.8546	7.085	.8507	6.938	.8331
28–A	101.0	6.786	.8148	6.753	.8109	6.603	.7929
29	100.76	6.808	.8175	6.775	.8135	6.624	.7954
30	110.0	6.785	.8147	6.755	.8111	6.617	.7945
31–A	111.5	7.167	.8606	7.138	.8571	7.002	.8408
32	104.8	6.769	.8128	6.737	.8089	6.593	.7916
35–A ³	105.0	6.817	.8185	6.785	.8147	6.641	.7974
35–A ⁴	104.25	6.826	.8196	6.794	.8158	6.649	.7984
36	102.7	6.837	.8209	6.804	.8170	6.657	.7993
37	100.9	6.794	.8158	6.762	.8119	6.612	.7939
38–B	101.3	6.804	.8170	6.772	.8131	6.622	.7951
38–D	102.7	6.863	.8241	6.830	.8201	6.682	.8023
38–F	100.9	6.828	.8199	6.796	.8160	6.646	.7980