

**Subpart D—Specially Denatured Spirits Formulas and Authorized Uses**

**§ 21.31 General.**

(a) *Formulas for specially denatured spirits.* Alcohol and rum shall be specially denatured only in accordance with formulas prescribed in this subpart (or in accordance with § 21.5).

(b) *Proof of spirits for denaturation.* Alcohol of not less than 185 proof shall be used in the manufacture of all formulas of specially denatured alcohol, unless otherwise specifically stated or unless otherwise authorized by the appropriate ATF officer. Rum for denaturation shall be of not less than 150 proof and may be denatured only in accordance with Formula No. 4.

(c) *Use of Denatured Spirits.* Users and manufacturers holding approved Forms 5150.19 (formerly 1479-A) covering use in processes or manufacture of products no longer authorized for a particular formula may continue that use. Pursuant to written application and subject to the provisions of 26 U.S.C. Chapter 51, Part 20 of this chapter, and this part, the appropriate ATF officer, may authorize the use of any formula of specially denatured alcohol or specially denatured rum for uses not specifically authorized in this part. The code number before each item under "authorized uses" shall be used in reporting the use of specially denatured alcohol or specially denatured rum.

[T.D. ATF-133, 48 FR 24673, June 2, 1983, as amended by T.D. ATF-199, 50 FR 9183, Mar. 6, 1985]

**§ 21.32 Formula No. 1.**

(a) *Formula.* To every 100 gallons of alcohol add:

Four gallons of methyl alcohol and either 1/8 avoirdupois ounce of denatonium benzoate, N.F.; 1 gallon of methyl isobutyl ketone; 1 gallon of mixed isomers of nitropropane; or 1 gallon of methyl *n*-butyl ketone.

(b) *Authorized uses.* (1) As a solvent:

- 011. Cellulose coatings.
- 012. Synthetic resin coatings.
- 013. Shellac coatings.
- 014. Other natural resin coatings.
- 016. Other coatings.
- 021. Cellulose plastics.
- 022. Non-cellulose plastics, including resins.

- 031. Photographic film and emulsions.
- 032. Transparent sheeting.
- 033. Explosives.
- 034. Cellulose intermediates and industrial collodions.
- 035. Soldering flux.
- 036. Adhesives and binders.
- 041. Proprietary solvents.
- 042. Solvents and thinners (other than proprietary solvents or special industrial solvents).
- 043. Solvents, special (restricted sale).
- 051. Polishes.
- 052. Inks (not including meat branding inks).
- 053. Stains (wood, etc.).
- 141. Shampoos.
- 142. Soap and bath preparations.
- 311. Cellulose compounds (dehydration).
- 312. Sodium hydrosulfite (dehydration).
- 315. Other dehydration products.
- 320. Petroleum products.
- 331. Processing pectin.
- 332. Processing other food products.
- 341. Processing crude drugs.
- 342. Processing glandular products, vitamins, hormones, and yeasts.
- 343. Processing antibiotics and vaccines.
- 344. Processing medicinal chemicals (including alkaloids).
- 345. Processing blood and blood products.
- 349. Miscellaneous drug processing (including manufacture of pills).
- 351. Processing dyes and intermediates.
- 352. Processing perfume materials and fixatives.
- 353. Processing photographic chemicals.
- 354. Processing rosin.
- 355. Processing rubber (latex).
- 358. Processing other chemicals.
- 359. Processing miscellaneous products.
- 410. Disinfectants, insecticides, fungicides, and other biocides.
- 420. Embalming fluids and related products.
- 430. Sterilizing and preserving solutions.
- 440. Industrial detergents and soaps.
- 450. Cleaning solutions (including household detergents).
- 481. Photoengraving and rotogravure dyes and solutions.
- 482. Other dye solutions.
- 485. Miscellaneous solutions (including duplicating fluids).

(2) As a raw material:

- 521. Ethyl acetate.
- 522. Ethyl chloride.
- 523. Other ethyl esters.
- 530. Ethylamines.
- 540. Dyes and intermediates.
- 551. Acetaldehyde.
- 552. Other aldehydes.
- 561. Ethyl ether.
- 562. Other ethers.
- 571. Ethylene dibromide.
- 572. Ethylene gas.
- 573. Xanthates.

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- 574. Fulminate of mercury and other detonators.
- 575. Drugs and medicinal chemicals.
- 579. Other chemicals.

(3) As a fuel:

- 611. Automobile and supplementary fuels.
- 612. Airplane and supplementary fuels.
- 613. Rocket and jet fuels.
- 620. Proprietary heating fuels.
- 630. Other fuel uses.

(4) As a fluid:

- 710. Scientific instruments.
- 720. Brake fluids.
- 730. Cutting oil.
- 740. Refrigerating uses.
- 750. Other fluid uses.
- 760. Proprietary anti-freeze.

(5) Miscellaneous uses:

- 812. Product development and pilot plant uses (own use only).
- 900. Specialized uses (unclassified).

[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-442, 66 FR 12854, Mar. 1, 2001]

**§ 21.33 Formula No. 2-B.**

(a) *Formula.* To every 100 gallons of alcohol add:

One-half gallon of benzene, ½ gallon of rubber hydrocarbon solvent, ½ gallon of toluene, or ½ gallon of heptane.

(b) *Authorized uses.* (1) As a solvent:

- 021. Cellulose plastics.
- 022. Non-cellulose plastics, including resins.
- 031. Photographic film and emulsions.
- 032. Transparent sheeting.
- 033. Explosives.
- 311. Cellulose compounds (dehydration).
- 312. Sodium hydrosulfite (dehydration).
- 315. Other dehydration products.
- 320. Petroleum products.
- 331. Processing pectin.
- 332. Processing other food products.
- 341. Processing crude drugs.
- 342. Processing glandular products, vitamins, hormones, and yeasts.
- 343. Processing antibiotics and vaccines.
- 344. Processing medicinal chemicals (including alkaloids).
- 349. Miscellaneous drug processing (including manufacture of pills).
- 351. Processing dyes and intermediates.
- 352. Processing perfume materials and fixatives.
- 353. Processing photographic chemicals.
- 358. Processing other chemicals.
- 359. Processing miscellaneous products.

(2) As a raw material:

- 521. Ethyl acetate.

- 522. Ethyl chloride.
- 523. Other ethyl esters.
- 524. Sodium ethylate, anhydrous.
- 530. Ethylamines.
- 540. Dyes and intermediates.
- 551. Acetaldehyde.
- 552. Other aldehydes.
- 561. Ethyl ether.
- 562. Other ethers.
- 571. Ethylene dibromide.
- 572. Ethylene gas.
- 573. Xanthates.
- 575. Drugs and medicinal chemicals.
- 576. Organo-silicone products.
- 579. Other chemicals.

(3) Miscellaneous uses:

- 812. Product development and pilot plant uses (own use only).

(c) *Conditions governing use.* This formula shall be used in a closed and continuous system unless otherwise authorized by the appropriate ATF officer.

[T.D. ATF-133, 48 FR 24673, June 2, 1983, as amended by T.D. ATF-442, 66 FR 12854, Mar. 1, 2001]

**§ 21.34 Formula No. 2-C.**

(a) *Formula.* To every 100 gallons of alcohol add:

Thirty-three pounds or more of metallic sodium and either ½ gallon of benzene, ½ gallon of toluene, or ½ gallon of rubber hydrocarbon solvent.

(b) *Authorized uses.* (1) As a solvent:

- 344. Processing medicinal chemicals (including alkaloids).
- 358. Processing other chemicals.
- 359. Processing miscellaneous products.

(2) As a raw material:

- 523. Miscellaneous ethyl esters.
- 530. Ethylamines.
- 540. Dyes and intermediates.
- 575. Drugs and medicinal chemicals.
- 579. Other chemicals.

(3) Miscellaneous uses:

- 812. Product development and pilot plant uses (own use only).

(c) *Conditions governing use.* This formula shall be used in a closed and continuous system unless otherwise authorized by the appropriate ATF officer.

**§ 21.35 Formula No. 3-A.**

(a) *Formula.* To every 100 gallons of alcohol add: