

[INCH-POUND]
A-A-59342
September 30, 1998
SUPERSEDING
MIL-E-463B
14 May 1962

COMMERCIAL ITEM DESCRIPTION
ETHYL ALCOHOL (FOR ORDNANCE USE)

The General Services Administration has authorized the use of this commercial item description, for all federal agencies.

1. SCOPE. This commercial item description (CID) covers the requirements for six grades of ethyl alcohol intended for ordnance use.

2. CLASSIFICATION. Ethyl alcohol shall be of the following grades as specified (see 7.4).

- Grade 1 - 95.0 percent by volume without denaturant.
- Grade 2 - 94.9 percent by volume with denaturant.
- Grade 3 - 99.0 percent by volume (anhydrous), with toluene denaturant
- Grade 4 - 95.0 percent by volume, denatured with tertiary-butyl alcohol and benzyldiethyl(2.6 xylycarbamoyl) ammonium benzoate.
- Grade 5 - 95.0 percent by volume.
- Grade 6 - 88.3 percent by volume.

3. SALIENT CHARACTERISTICS.

3.1 Material. Ethyl alcohol, prior to the addition of dye or denaturant, shall be a clear, transparent, colorless liquid having a characteristic odor, and shall not contain visible insoluble material. The quantity and grade shall be as specified in the contract or order (see 7.2 and 7.4).

3.1.1 Grade 1 ethyl alcohol shall contain neither dye nor denaturant and conform to Table I when tested as specified therein.

3.1.2 Grade 2 ethyl alcohol shall be produced by the addition of toluene to Grade 1, ethyl alcohol and shall conform to Table I when tested as specified therein.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, US Army TACOM-ARDEC, Attn.: AMSTA-AR-QAW-E, Bldg 12, Picatinny Arsenal, NJ 07806-5000 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.
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AMSC N/A

FSC 6810

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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3.1.3 Grade 3 ethyl alcohol shall be produced by the addition of toluene to an anhydrous grade of alcohol that complies with the requirements of Grade 1 ethyl alcohol when tested as specified therein.

3.1.4 Grade 4 ethyl alcohol shall be produced by the addition of 1/8 gallon of tert-butyl alcohol and 1/4 avoirdupois ounce of benzyldiethyl (2.6 xylylcarbamoyl) ammonium benzoate to 100 gallons of Grade 1 ethyl alcohol, and shall be dyed with one part by weight of fuchsin dye to 500,000 parts, by weight, of ethyl alcohol. Grade 4 ethyl alcohol shall conform to Table I when tested as specified therein.

3.1.5 Grade 5 shall be produced by mixing 100 gallons of anhydrous ethyl alcohol with 5 gallons of anhydrous methyl alcohol and shall conform to Table I when tested as specified in the contract or order (see 7.2).

3.1.6 Grade 6 shall be produced by mixing 100 gallons of either anhydrous SD3A Alcohol or Grade 5 alcohol with 5 gallons of ethyl acetate and 1 gallon of methyl isobutyl ketone and shall conform to Table I when tested as specified in the contract or order (see 7.2).

TABLE I. Chemical and physical properties

<u>Properties</u>	<u>Grades</u>						<u>Test Method</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	
Ethyl alcohol by volume, minimum (min.) percent	95.0	94.9	99.0	94.9	95.0	88.3	see 5.3.1
Toluene by volume, maximum (max.) percent	0.01	0.75	0.75	-	-	-	see 5.3.2
Acidity, grams (gm.) per 100 milliliters (mL) (as acetic acid, max.)	0.005	0.01	-	-	0.01	0.01	see 5.3.3
Aldehydes, max. milligram (mg.) per 100 mL	20.0	-	-	-	-	-	see 5.3.4
Non-volatile matter, max. percent	0.004	0.006	-	-	-	-	see 5.3.5
Organic impurities, max., percent	0.1	-	-	-	-	-	see 5.3.6
Water, percent by weight, max.	-	-	-	-	0.3	0.3	see 5.3.7
Methyl alcohol, percent by volume, max.	-	-	-	-	5.0	4.5	see 3.1.5, 5.3.8, and 7.2
Ethyl acetate, percent by volume, max	-	-	-	-	-	5.4	see 3.1.6, 5.3.9, and 7.2
Methyl isobutyl ketone, percent by volume, max.	-	-	-	-	-	1.5	see 3.1.6, 5.3.10 and 7.2
Specific Gravity, max.	.8158	.8162	.7987	.8162	.8158	.8387	see 5.3.1

3.2 Chemical and Physical Properties. The chemical contents and physical properties of each grade shall comply with the requirements shown in Table I when tested as specified herein.

3.3 Taste. (Grade 4 only). Grade 4 ethyl alcohol shall be distinctly bitter.

4. REGULATORY REQUIREMENTS. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

5. QUALITY ASSURANCE PROVISIONS.

5.1 Product Conformance. The products provided shall meet the salient characteristics of this commercial item description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial market. The government reserves the right to require proof of such conformance.

5.2 Testing.

5.2.1 Sampling.

5.2.1.1 Containers. From each inspection lot, two containers shall be selected at random. A composite sample shall be prepared by taking a 16 ounce specimen from each of the selected containers. Transfer the specimen to a 32 ounce air tight glass bottle having a glass stopper or a cap containing a cork or cardboard liner covered with metal foil, and labeled to show the name of the material, grade, manufacturer, plant contract or purchase number and lot size. If the samples fail to comply with any of the requirements, the lot shall be rejected.

5.2.1.2 Tank cars. By means of a clean, weighted, small-neck, glass bottle approximately 1 quart of the material shall be removed from the tank car. The unstoppered bottle shall be rinsed with the material being sampled, and lowered to the bottom of the tank by means of a cord, chain, or rod. The bottle shall be immediately withdrawn to the surface. In order to obtain a representative cross-section of the material, the speed of lowering and raising the bottle shall be uniform, and so regulated that the bottle, is just filled as it reaches the surface of the liquid. This sample shall be placed in an airtight glass bottle, having a glass stopper or a cap containing a cork or cardboard liner covered with metal foil, and labeled to show the name of the material, manufacturer, plant, contract or order number, lot number, and a lot size. If the sample fails to comply with any of the requirements, the lot shall be rejected.

5.3 Test methods and procedures.

5.3.1 Ethyl alcohol content. The specific gravity shall be determined at 15.6°C/15.6 °C (60°F/60 °F) by means of a calibrated hydrometer, pycnometer or other standard method. The percentage of alcohol by volume shall be obtained by reference to Table II.

5.3.2 Toluene. The test for toluene in Grade 1 ethyl alcohol shall be made in accordance with the colorimetric method described in 5.3.2.1 and the tests for toluene in Grades 2 and 3 ethyl alcohol shall be made in accordance with the spectrophotometric method described in 5.3.2.2 or 5.3.2.3.

5.3.2.1 Colorimetric method. A 10 mL portion of nitrating mixture, made by mixing equal parts, by volume, of sulfuric acid (specific gravity 1.84) and fuming nitric acid, free of brown oxides of nitrogen, shall be placed in a 50

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mL beaker. Precautions shall be taken to prevent rise of temperature above 25°C (and subsequent evolution of brown fumes) by use of a buret to permit slow dropwise addition of the sample, and a mechanical stirrer to effect rapid and thorough mixing. Then, 0.5 mL of the sample shall be added. With vigorous stirring, the resultant mixture shall be slowly poured into 40 mL of water. The mixture shall be transferred, at a temperature of not more than 25°C to a 125 mL separatory funnel, and extracted once with 20 mL of ethyl ether by shaking for approximately 1 minute. The lower layer shall be discarded. A 20 mL portion of water shall be added, and shaken vigorously for approximately 1 minute. The wash water (lower layer) shall be discarded. A 20 mL solution, made by diluting 5 mL of saturated sodium bicarbonate solution with 15 mL of water, shall be added. The alkaline wash solution, which should have a yellow to brownish-yellow color, shall be slowly removed and tested for alkalinity with a universal indicator test paper. If the solution is acid, the other portion shall again be treated with dilute sodium bicarbonate solution. The wash solution shall be discarded. The ether layer shall be transferred through the mouth of a separatory funnel to a dry 50 mL beaker and almost, but not completely, evaporated to dryness on a steam bath. The contents shall be washed into a dry test tube (approximately 16 by 150 millimeter (mm) with 10 mL of toluene free 95 percent ethyl alcohol. Then 1 mL of butanone (methyl-ethyl-ketone) shall be added, and the solution shaken. A 0.5 mL portion of alcoholic NaOH solution, made by dilution of 1 volume of aqueous NaOH solution (40g NaOH per 100 mL of aqueous solution) to 10 volumes with toluene-free 95 percent ethyl alcohol shall be added. The solution shall be thoroughly mixed, and allowed to stand for 5 minutes. A blank shall be run simultaneously with the sample, using toluene-free 95 percent ethyl alcohol. In the absence of toluene, the solution has a yellow to yellow-orange color. The presence of toluene is indicated by a reddish color, having a greater intensity than that obtained when a synthetic mixture of 0.01 percent toluene has been tested in toluene-free alcohol.

5.3.2.2 Spectrophotometric method. This method is based on the fact that toluene has a characteristic absorption curve in the ultra-violet region.

5.3.2.2.1 Apparatus. Absorbance measurements shall be made using a spectrophotometer with ultra-violet accessories, matched 1 centimeter silica cells and a blue sensitive phototube in position. (A Beckman Model DU spectrophotometer (see 7.8) has been found to be satisfactory.)

5.3.2.2.2 Standard curve. Standard solutions of toluene in ethyl alcohol shall be prepared by pipetting 0.2, 0.5 and 0.8 mL of reagent grade toluene respectively into labelled 100 mL volumetric flasks. The toluene in the flasks shall be diluted to the mark with toluene free reagent grade ethyl alcohol (95 percent or absolute). Ten mL of each standard shall be pipetted to suitably labelled 100 mL volumetric flasks, diluted to volume with reagent grade methanol and mixed thoroughly. The absorbance readings of these solutions shall be taken at a wave-length of 261 millimicrons using a methanol blank. The absorbance readings shall be plotted against the concentration. This should be a straight line passing through the origin. All pertinent data shall be recorded. The graph for a particular instrument may be retained and used for future routine work by checking two points on the curve.

5.3.2.2.3 Procedure. A 10 mL portion of the sample shall be transferred, quantitatively, to a 100 mL volumetric flask and diluted to a volume with reagent grade methanol. The solution shall be mixed thoroughly and one of the silica cells of the apparatus shall be filled with the sample solution and the other cell filled with methanol. The cells shall be inserted in the cell holder and the optical density at 261 millimicrons shall be recorded, after proper adjustment of the instrument. (Use of a slit width chosen for the best

sensitivity). The quantity of toluene present shall be read from the standard graph (5.3.2.2.2).

5.3.2.3 Alternate method. A 0.10 mL portion of the sample shall be transferred, by means of a pipette, to a dry test tube. Then 5 mL of concentrated sulfuric acid, containing 0.5 percent of formaldehyde solution (not less than 37 percent formaldehyde), shall be added by means of a pipette. The test tube and contents shall be agitated. The color developed shall be no darker than that of a 0.75 percent solution of toluene in 95 percent alcohol, by volume, when treated in the same manner as the sample. In case of question, doubt, or dispute, the spectrophotometric method specified in 5.3.2.2 shall be mandatory.

5.3.3 Acidity. Mix 100 mL of sample with 100 mL of carbon-dioxide free distilled water. Add two drops of bromothymol blue indicator prepared by dissolving 0.1 g bromothymol blue in 100 mL 50% ethyl alcohol and titrate with 0.01 Normal Sodium Hydroxide to a blue endpoint. Calculate acidity as acetic acid as follows:

$$\text{Acetic acid (g per 100 mL)} = 0.06 \text{ VN}$$

where:

V = mL of alkali used

N = Normality alkali

5.3.4 Aldehydes. 120 mL of sample shall be transferred to a 250 mL flask, add approximately 20 mL of distilled water and a few granules of carborundum. Distill slowly into a 100 mL volumetric flask, to the mark, and mix.

5.3.4.1 Procedure. The 100 mL of freshly distilled ethyl alcohol shall be placed in a 500 mL flask and approximately 100 mL of distilled water and excess of .05 normal sodium bisulfite shall be added and allowed to stand approximately 30 minutes shaking occasionally (excess sodium bisulfite should be equivalent of approximately 25 mL of .05 normal iodine). Excess iodine .05 normal solution shall be added and this excess titrated with .05 normal sodium thiosulfate. A blank shall be run using the same quantities of .05 normal iodine and sodium bisulfite as used in the sample.

$$\text{Aldehydes in mg. per 100 mL} = A \times 1.1$$

where:

A = difference in mL between the two titration of sodium thiosulfate used.

5.3.5 Non-volatile matter. Evaporate 100 mL of the sample on a steam bath in a tared platinum or other suitable dish. Dry the dish and residue to constant weight in an oven at 105°C to 110°C. The increase in weight of dish shall be calculated as percentage non-volatile residue. Calculate the increase as follows:

$$\begin{aligned} \text{Non-volatile matter in g per} \\ 100 \text{ mL} = B - A \end{aligned}$$

where:

A = tare weight of dish

B = weight of dish plus residue

5.3.6 Organic impurities. A 0.1 mL portion of reagent grade, isoamyl alcohol (isobutyl-carbinol) shall be transferred to a volumetric flask, and made up to 100 mL with reagent grade absolute ethyl alcohol (standard solution). Both of the following tests, on this standard solution, and on the sample, shall be

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conducted using test tubes of uniform size. These tests are especially intended for the detection of an excessive percentage of fuse oil.

5.3.6.1 Sulfuric acid method. To 10 mL of the sample, in a large test tube, 10 mL of sulfuric acid (specific gravity 1.84) shall be cautiously added down the side of the test tube. During this addition, the test tube shall be gently swirled to obtain thorough mixing of the acid with sample. The temperature of the mixture will rise to approximately 90°C. This procedure shall be repeated on 10 mL of the standard solution, in another test tube of the same size. Both test tubes shall be placed in an oven or bath at 65°C for 18 hours. The development of a definitely darker color in the sample than in the standard solution shall be cause for rejection.

5.3.6.2 Potassium permanganate method. Two clean test tubes of the same size shall be selected. A 10 mL portion of the sample shall be placed in one test tube, and 10 mL of the standard solution in the other test tube. The temperature shall be adjusted to $25^{\circ} \pm 0.2^{\circ}\text{C}$. One drop of potassium permanganate solution (1g KMnO₄, per liter) from 10 mL burnette shall be added to each test tube, and the time recorded. Complete fading of the pink color in less than ten minutes indicates the presence of more than 0.1 percent organic impurities. There shall be almost no pink color in the standard solution, after standing for ten minutes.

5.3.7 Water. The percent by weight of water present shall be determined in accordance with ASTM Method D1364, Part 20.

5.3.8 Methyl alcohol. The methyl alcohol content shall be determined by using a suitable method that has been approved by the procuring activity. (see 7.2)

5.3.9 Ethyl acetate. The ethyl acetate content shall be determined by using a suitable method that has been approved by the procuring activity. (see 7.2)

5.3.10 Methyl isobutyl ketone. The methyl isobutyl ketone content shall be determined by using a suitable method that has been approved by the procuring activity. (see 7.2)

TABLE II. Percentage by volume of ethyl alcohol corresponding to apparent specific gravities at 15.6°C/15.6°C (in air).

Specific gravity	Percentage of ethyl alcohol	Specific gravity	Percentage of ethyl alcohol
0.8233	93.00	0.8181	94.40
0.8232	93.03	0.8180	94.43
0.8231	93.05	0.8179	94.46
0.8230	93.08	0.8178	94.48
0.8229	93.11	0.8177	94.51
0.8228	93.14	0.8176	94.53
0.8227	93.16	0.8175	94.56
0.8226	93.19	0.8174	94.59
0.8225	93.22	0.8173	94.61
0.8224	93.25	0.8172	94.64
0.8223	93.27	0.8171	94.66
0.8222	93.30	0.8170	94.69
0.8221	93.33	0.8169	94.72
0.8220	93.36	0.8168	94.74
0.8219	93.38	0.8167	94.77
0.8218	93.41	0.8166	94.79
0.8217	93.44	0.8165	94.82
0.8216	93.47	0.8164	94.84
0.8215	93.49	0.8163	94.87
0.8214	93.52	0.8162	94.90
0.8213	93.55	0.8161	94.92
0.8212	93.58	0.8160	94.95
0.8211	93.60	0.8159	94.97
0.8210	93.63	0.8158	95.00
0.8209	93.66	0.8157	95.03
0.8208	93.68	0.8156	95.05
0.8207	93.71	0.8155	95.08
0.8206	93.74	0.8154	95.10
0.8205	93.76	0.8153	95.13
0.8204	93.79	0.8152	95.15
0.8203	93.82	0.8151	95.18
0.8202	93.84	0.8150	95.20
0.8201	93.87	0.8149	95.23
0.8200	93.90	0.8148	95.25
0.8199	93.92	0.8147	95.28
0.8198	93.95	0.8146	95.30
0.8197	93.98	0.8145	95.33
0.8196	94.01	0.8144	95.36
0.8195	94.03	0.8143	95.38
0.8194	94.06	0.8142	95.41
0.8193	94.08	0.8141	95.42
0.8192	94.11	0.8140	95.46
0.8191	94.14	0.8139	95.48
0.8190	94.16	0.8138	95.51
0.8189	94.19	0.8137	95.53
0.8188	94.22	0.8136	95.56
0.8187	94.24	0.8135	95.58
0.8186	94.27	0.8134	95.61
0.8185	94.30	0.8138	95.63
0.8184	94.32	0.8132	95.66
0.8183	94.35	0.8131	95.68
0.8182	94.38	0.8130	95.71

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TABLE II. Percentage by volume of ethyl alcohol corresponding to apparent specific gravities at 15.6°C/15.6°C (in air) - Continued.

Specific gravity	Percentage of ethyl alcohol	Specific gravity	Percentage of ethyl alcohol
0.8129	95.73	0.8076	97.02
0.8128	95.76	0.8075	97.04
0.8127	95.78	0.8074	97.07
0.8126	95.81	0.8073	97.09
0.8125	95.83	0.8072	97.11
0.8124	95.86	0.8071	97.14
0.8123	95.88	0.8070	97.16
0.8122	95.91	0.8069	97.18
0.8121	95.93	0.8068	97.21
0.8120	95.96	0.8067	97.23
0.8119	95.98	0.8066	97.25
0.8118	96.01	0.8065	97.28
0.8117	96.03	0.8064	97.30
0.8116	96.06	0.8063	97.32
0.8115	96.08	0.8062	97.35
0.8114	96.10	0.8061	97.37
0.8113	96.13	0.8060	97.39
0.8112	96.15	0.8059	97.42
0.8111	96.18	0.8058	97.44
0.8110	96.20	0.8057	97.46
0.8109	96.23	0.8056	97.49
0.8108	96.25	0.8055	97.51
0.8107	96.28	0.8054	97.53
0.8106	96.30	0.8053	97.55
0.8105	96.32	0.8052	97.58
0.8104	96.35	0.8051	97.60
0.8103	96.37	0.8050	97.62
0.8102	96.40	0.8049	97.64
0.8101	96.42	0.8048	97.67
0.8100	96.45	0.8047	97.69
0.8099	96.47	0.8046	97.71
0.8098	96.50	0.8045	97.73
0.8097	96.52	0.8044	97.76
0.8096	96.54	0.8043	97.78
0.8095	96.57	0.8042	97.80
0.8094	96.59	0.8041	97.82
0.8093	96.61	0.8040	97.85
0.8092	96.64	0.8039	97.87
0.8091	96.66	0.8038	97.89
0.8090	96.69	0.8037	97.91
0.8089	96.71	0.8036	97.94
0.8088	96.73	0.8035	97.96
0.8087	96.76	0.8034	97.98
0.8086	96.78	0.8033	98.00
0.8085	96.81	0.8032	98.03
0.8084	96.83	0.8031	98.05
0.8083	96.85	0.8030	98.07
0.8082	96.88	0.8029	98.09
0.8081	96.90	0.8028	98.11
0.8080	96.93	0.8027	98.14
0.8079	96.95	0.8026	98.16
0.8078	96.97	0.8025	98.18
0.8077	97.00	0.8024	98.20

TABLE II. Percentage by volume of ethyl alcohol corresponding to apparent specific gravities at 15.6°C/15.6°C (in air) - Continued.

Specific gravity	Percentage of ethyl alcohol	Specific gravity	Percentage of ethyl alcohol
0.8023	98.22	0.7979	99.15
0.8022	98.25	0.7978	99.17
0.8021	98.27	0.7977	99.19
0.8020	98.29	0.7976	99.21
0.8019	98.31	0.7975	99.23
0.8018	98.33	0.7974	99.25
0.8017	98.35	0.7973	99.27
0.8016	98.38	0.7972	99.29
0.8015	98.40	0.7971	99.31
0.8014	98.42	0.7970	99.33
0.8013	98.44	0.7969	99.35
0.8012	98.46	0.7968	99.37
0.8011	98.48	0.7967	99.39
0.8010	98.50	0.7966	99.42
0.8009	98.53	0.7965	99.44
0.8008	98.55	0.7964	99.46
0.8007	98.57	0.7963	99.48
0.8006	98.59	0.7962	99.50
0.8005	98.61	0.7961	99.52
0.8004	98.63	0.7960	99.54
0.8003	98.65	0.7959	99.56
0.8002	98.67	0.7958	99.58
0.8001	98.70	0.7957	99.60
0.8000	98.72	0.7956	99.61
0.7999	98.74	0.7955	99.63
0.7998	98.76	0.7954	99.65
0.7997	98.78	0.7953	99.67
0.7996	98.80	0.7952	99.69
0.7995	98.82	0.7951	99.71
0.7994	98.84	0.7950	99.73
0.7993	98.86	0.7949	99.75
0.7992	98.88	0.7948	99.77
0.7991	98.90	0.7947	99.79
0.7990	98.92	0.7946	99.81
0.7989	98.95	0.7945	99.83
0.7988	98.97	0.7944	99.85
0.7987	98.99	0.7943	99.87
0.7986	99.01	0.7942	99.89
0.7985	99.03	0.7941	99.91
0.7984	99.05	0.7940	99.93
0.7983	99.07	0.7939	99.95
0.7982	99.09	0.7938	99.97
0.7981	99.11	0.7937	99.99
0.7980	99.13	0.7936	100.00

6. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or purchase order.

7. NOTES.

7.1 Source of documents.

7.1.1 The Code of Federal Regulations (CFR) is available by mail order from the Superintendent of Documents, ATTN: New Order, P.O. Box 371954, Pittsburgh, PA 15250-7954.

7.1.2 ASTM standards are available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

7.2 Ordering data. Procurement documents should specify the following:

- a. Title, number, and date of this CID.
- b. Quantity and Grade required (see 3.1 and 7.4).
- c. Methyl alcohol test method for Grade 5 and 6 (see 3.1.5 and 5.3.8).
- d. Ethyl acetate test method for Grade 6 (see 3.1.6 and 5.3.9).
- e. Methyl isobutyl ketone test method for Grade 6 (see 3.1.6 and 5.3.10)
- f. Packaging and marking requirements (see 6).

7.3 Lot formation. A lot is defined as one grade of ethyl alcohol, from one or more batches, produced by one manufacturer in accordance with the same specification or same specification revision under one continuous set of operating conditions. Each batch consists of that quantity of ethyl alcohol that has been subjected to the same unit chemical or physical process intended to make the final product homogeneous.

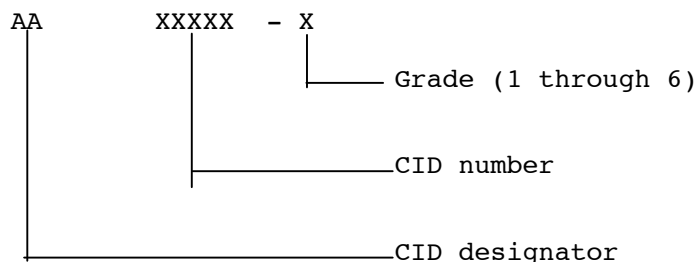
7.4 Alcohol Tobacco and Firearms (ATF) Formulary. Grades 1,3,4, and 5 may also be procured under the ATF formulary as follows:

Grade 1 as USP ethanol
Grade 3 as SDA 2-B
Grade 4 as SDA 40-B
Grade 5 as SDA 3-A

7.5 Transportation. Ethyl alcohol is subject to the requirements of 49 CFR 100-185 regarding the transportation of hazardous materials.

7.6 Material Safety Data Sheets. Products meeting the requirements of this CID may be subject to the requirements of 29 CFR 1910.1200 and FED-STD-313 for Material Safety Data Sheets.

7.7 Part Identification Number (PIN). This PIN is for government purposes only and is not a requirement for the contractor. The PIN to be used for items described by this CID is created as follows:



7.8 Beckman products. Information regarding Beckman products may be obtained from Beckman Instruments, Inc., 2500-T Harbor Blvd., Fullerton, CA 92834.

7.9 Keywords.

Formaldehyde
Methyl isobutyl ketone
Nitric acid
Sulfuric acid
Teritiary-butyl alcohol
Toluene

MILITARY INTERESTS:

Custodian:

Army-AR

Navy-OS

Review Activities:

Army-AV, EA

DLA-GS

CIVIL AGENCY COORDINATING ACTIVITY:
GSA-FSS

Preparing Activity:

Army-AR

(Project 6810-1620)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
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1. DOCUMENT NUMBER
A-A-59342

2. DOCUMENT DATE (YYMMDD)
980930

3. DOCUMENT TITLE ETHYL ALCOHOL (FOR ORDNANCE USE)

4. NATURE OF CHANGE Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)
(1) Commercial
(2) AUTOVON
(if applicable)

7. DATE SUBMITTED
(YYMMDD)

8. PREPARING ACTIVITY

a. NAME COMMANDER MR. GARY VANDER SANDE
US ARMY TACOM-ARDEC

b. TELEPHONE Include Area Code)
(1) Commercial 973 724-2163
(2) AUTOVON 880-2163

c. ADDRESS (Include Zip Code)
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