
Policy for Temporary Compounding of Certain Alcohol-Based Hand Sanitizer Products During the Public Health Emergency Immediately in Effect Guidance for Industry

FDA is issuing this guidance for immediate implementation in accordance with 21 CFR 10.115(g)(2). Comments may be submitted at any time for Agency consideration. Submit written comments to the Dockets Management Staff (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852. Submit electronic comments to <https://www.regulations.gov>. All comments should be identified with the docket number listed in the notice of availability that publishes in the *Federal Register*.

For questions regarding this document, contact FDA's human drug compounding team (CDER) at COVID-19-Hand-Sanitizers@fda.hhs.gov.

March 2020
Updated June 1, 2020
Compounding

Contains Nonbinding Recommendations

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**U.S. Department of Health and Human Services
Food and Drug Administration
Center for Drug Evaluation and Research (CDER)**

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TABLE OF CONTENTS

I. INTRODUCTION..... 1
II. BACKGROUND 2
III. DISCUSSION 3

Attachment 1 - Use of Fuel or Technical Grade Alcohol (Ethanol)

Attachment 2 - Denaturant Formulas

Appendices A-D - Labels

Policy for Temporary Compounding of Certain Alcohol-Based Hand Sanitizer Products During the Public Health Emergency Immediately in Effect Guidance for Industry¹

This guidance represents the current thinking of the Food and Drug Administration (FDA or Agency) on this topic. It does not establish any rights for any person and is not binding on FDA or the public. You can use an alternative approach if it satisfies the requirements of the applicable statutes and regulations. To discuss an alternative approach, contact the FDA office responsible for this guidance as listed on the title page.

I. INTRODUCTION

Due to the Coronavirus Disease 2019 (COVID-19) pandemic, the Food and Drug Administration (FDA or Agency) has received a number of queries concerning compounding of alcohol-based hand sanitizers. The Agency is issuing this guidance to communicate its policy for the temporary compounding of certain alcohol-based² hand sanitizer products by pharmacists in State-licensed pharmacies or Federal facilities and registered outsourcing facilities (referred to collectively in this guidance as compounders) for the duration of the public health emergency declared by the Secretary of Health and Human Services (HHS) on January 31, 2020,³ including any renewals made by the HHS Secretary in accordance with section 319(a)(2) of the Public Health Service Act (PHS Act) (42 U.S.C. 247d(a)(2)). FDA is continually assessing the needs and circumstances related to this temporary policy, and as relevant needs and circumstances evolve, FDA intends to update, modify, or withdraw this policy as appropriate.

¹ This guidance has been prepared by the Office of Compliance in the Center for Drug Evaluation and Research at the Food and Drug Administration. FDA has issued a separate guidance for industry entitled Temporary Policy for Preparation of Certain Alcohol-Based Hand Sanitizer Products During the Public Health Emergency (COVID-19) (March 2020, updated March 27, 2020, updated April 15, 2020 and updated June 1, 2020), that describes the Agency's temporary policy for firms to register as over-the-counter (OTC) drug manufacturers and prepare certain alcohol-based hand sanitizer products during this ongoing public health emergency. The OTC drug manufacturer guidance is available at <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/guidance-industry-temporary-policy-preparation-certain-alcohol-based-hand-sanitizer-products-during>. We update guidances periodically. For the most recent version of a guidance, check the FDA guidance web page at <https://www.fda.gov/regulatory-information/search-fda-guidance-documents>.

² Alcohol-based hand sanitizer for purposes of this guidance can be prepared using alcohol or isopropyl alcohol (IPA) consistent with FDA policies outlined in this guidance. *Alcohol* is defined as ethanol (ethyl alcohol) in the United States Pharmacopeia and National Formulary (USP-NF) and as ethyl alcohol in the Food Chemical Codex (FCC). The USP and FCC documents, known as "monographs," establish test methods and acceptance criteria for identity and purity. The USP and FCC definitions of *alcohol* do not include IPA. Unless otherwise specified, and consistent with the USP and FCC monographs, references in this guidance to "alcohol" refer to ethanol.

³ The HHS Public Health Emergency Declaration is available at <https://www.phe.gov/emergency/news/healthactions/phe/Pages/2019-nCoV.aspx>.

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In light of the public health emergency posed by COVID-19, and as discussed in the Notice in the *Federal Register* of March 25, 2020 (85 FR 16949), titled “Process for Making Available Guidance Documents Related to Coronavirus Disease 2019,” available at <https://www.govinfo.gov/content/pkg/FR-2020-03-25/pdf/2020-06222.pdf>, this guidance is being implemented without prior public comment because the FDA has determined that prior public participation for this guidance is not feasible or appropriate (see section 701(h)(1)(C)(i) of the Federal Food, Drug, and Cosmetic Act (FD&C Act) (21 U.S.C. 371(h)(1)(C)(i)) and 21 CFR 10.115(g)(2)). This guidance document is immediately in effect, but it remains subject to comment in accordance with the Agency’s good guidance practices.

In general, FDA’s guidance documents do not establish legally enforceable responsibilities. Instead, guidances describe the Agency’s current thinking on a topic and should be viewed only as recommendations, unless specific regulatory or statutory requirements are cited. The use of the word *should* in Agency guidances means that something is suggested or recommended, but not required.

II. BACKGROUND

There is currently an outbreak of respiratory disease caused by a novel coronavirus that was first detected in Wuhan City, Hubei Province, China, and that has now been detected in many locations internationally, including cases in the United States. The virus has been named “SARS-CoV-2” and the disease it causes has been named “Coronavirus Disease 2019” (COVID-19). SARS-CoV-2 has demonstrated the capability to spread rapidly, leading to significant impacts on healthcare systems and causing societal disruption. The potential public health threat posed by COVID-19 is high, both globally and to the United States. On January 31, 2020, the Secretary of HHS issued a declaration of a public health emergency related to COVID-19 and mobilized the Operating Divisions of HHS.⁴ In addition, on March 13, 2020, the President declared a national emergency in response to COVID-19.⁵

Hand hygiene is an important part of the U.S. response to COVID-19. Washing hands often with soap and water for at least 20 seconds is essential, especially after going to the bathroom, before eating, and after coughing, sneezing, or blowing one’s nose. If soap and water are not readily available, the Centers for Disease Control and Prevention (CDC) recommends consumers use an alcohol-based hand sanitizer that contains at least 60 percent alcohol (also referred to as ethanol or ethyl alcohol).^{6,7}

⁴ Secretary of Health and Human Services Alex M. Azar, Determination that a Public Health Emergency Exists. (Jan. 31, 2020, renewed April 21, 2020), available at <https://www.phe.gov/emergency/news/healthactions/phe/Pages/default.aspx>.

⁵ Proclamation on Declaring a National Emergency Concerning the Novel Coronavirus Disease (COVID-19) Outbreak (Mar. 13, 2020), available at <https://www.whitehouse.gov/presidential-actions/proclamation-declaring-national-emergency-concerning-novel-coronavirus-disease-covid-19-outbreak/>.

⁶ See <https://www.cdc.gov/handwashing/hand-sanitizer-use.html>.

⁷ Isopropyl alcohol and ethyl alcohol are two of the active ingredients currently being evaluated by FDA as part of its review of over-the-counter (OTC) monographs for hand sanitizers for use in reducing bacteria on the skin that potentially can cause disease or decrease presence of bacteria on the skin. See “Safety and Effectiveness of Consumer Antiseptic Rubs; Topical Antimicrobial Drug Products for Over-the-Counter Human Use,” Final Rule, 84

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III. DISCUSSION

We understand that some consumers and health care personnel are currently experiencing difficulties accessing alcohol-based hand sanitizers. We are also aware of reports that some consumers are producing hand sanitizers for personal use; the Agency lacks information on the methods being used to prepare such products and whether they are safe for use on human skin. We further recognize that compounders, relative to untrained consumers, are more familiar with standards and methods for producing drug products.

Because of the public health emergency posed by COVID-19, FDA does not intend to take action against compounders⁸ that prepare alcohol-based hand sanitizers for consumer use and for use as health care personnel hand rubs⁹ for the duration of the public health emergency declared by the Secretary of HHS on January 31, 2020, provided the following circumstances are present:

1. The hand sanitizer is compounded using only the following ingredients in the preparation of the product:
 - a. *Select one of two options:*
 - (i) Alcohol (ethanol) that is not less than 94.9% ethanol by volume¹⁰; **OR**

FR 14847 (April 12, 2019); “Safety and Effectiveness of Health Care Antiseptics; Topical Antimicrobial Drug Products for Over-the-Counter Human Use Final Rule,” 82 FR 60474 (December 20, 2017); “Topical Antimicrobial Drug Products for Over-the-Counter Human Use; Tentative Final Monograph for Health-Care Antiseptic Drug Products,” Proposed Rule, 59 FR 31402 (June 17, 1994) (1994 TFM). The temporary policies outlined in this guidance cover alcohol-based (ethanol and isopropyl alcohol) hand sanitizer and do not cover the use of other active or inactive ingredients not otherwise mentioned in this guidance for use in hand sanitizer, including benzethonium chloride or benzalkonium chloride.

⁸ Specifically, FDA does not intend to take action against pharmacists in State-licensed pharmacies or Federal facilities, for the duration of the public health emergency declared by the Secretary of HHS on January 31, 2020, including any renewals made by the Secretary in accordance with section 319(a)(2) of the PHS Act (42 U.S.C. 247d(a)(2)), for violations of sections 501(a)(2)(B), 502(f)(1), and 505 of the FD&C Act (21 U.S.C. 351(a)(2)(B), 352(f)(1), and 355), or against outsourcing facilities for violations of sections 502(f)(1), 505, or 582 of the FD&C Act (21 U.S.C. 352(f)(1), 355, and 360eee-1).

⁹ Rubs are sometime referred to as “leave on products,” and are not rinsed off after use. Rub products include alcohol-based hand sanitizers for use by consumers and for use by health care professionals in hospitals or other health care settings. The health care antiseptic products include health care personnel hand rubs, surgical hand rubs, and patient antiseptic skin preparations. In the health care setting, this policy only applies to alcohol-based hand sanitizer for use as health care personnel hand rubs and does not apply to surgical hand rubs and patient antiseptic skin preparations. See “Safety and Effectiveness of Consumer Antiseptic Rubs; Topical Antimicrobial Drug Products for Over-the-Counter Human Use,” Final Rule, 84 FR 14847 (April 12, 2019); “Safety and Effectiveness of Health Care Antiseptics; Topical Antimicrobial Drug Products for Over-the-Counter Human Use,” Final Rule, 82 FR 60474 (December 20, 2017); “Topical Antimicrobial Drug Products for Over-the-Counter Human Use; Tentative Final Monograph for Health-Care Antiseptic Drug Products,” Proposed Rule, 59 FR 31402 (June 17, 1994) (1994 TFM).

¹⁰ This is consistent with the USP and FCC grade requirements for purity. Lower ethanol content alcohol falls within this policy so long as it is labeled accordingly, and the finished hand sanitizer meets the ethanol concentration of 80%.

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- (ii) United States Pharmacopeia (USP grade) Isopropyl Alcohol (IPA)^{11,12}
- b. Glycerin (glycerol) USP or Food Chemical Codex (FCC) (also known as “food grade”)
- c. Hydrogen peroxide¹³
- d. Sterile water (e.g., by boiling, distillation, or other process that results in water that meets the specifications for Purified Water USP). Water should be used as quickly as possible after it is rendered sterile or purified.

Additional Considerations for Ingredients in Preparation of the Product:

Alcohol (ethanol)¹⁴ that is produced using fermentation and distillation processes typically used for consumable goods, and that is made in a facility used for producing consumable goods, may be considered for use in hand sanitizer.

Alcohol derived from synthetic processes may be considered for use in hand sanitizer only if it meets USP or FCC¹⁵ grade.

Alcohol produced in facilities normally producing fuel or technical grade alcohol may be considered for use in hand sanitizer provided the following circumstances are present:

- (i) the alcohol is produced using fermentation and distillation processes typically used for consumable goods, and no other additives or other chemicals have been added to the ethanol;
- (ii) the alcohol meets USP or FCC¹⁶ grade requirements or the conditions in Attachment 1; and,
- (iii) the alcohol has been screened for any other potentially harmful impurities not specified in the USP or FCC requirements but potentially present based on the specific manufacturing environment.¹⁷

¹¹ Isopropyl alcohol used as the active ingredient should be USP grade. If a compounder wishes to use other grades of isopropyl alcohol as an active ingredient, provide analytical data for the isopropyl alcohol tested against all of the elements of the USP monograph, including listed impurities, to COVID-19-Hand-Sanitizers@fda.hhs.gov and include “ISOPROPYL ALCOHOL DATA” in the subject line, for FDA’s assessment regarding the use of this ingredient under this policy.

¹² USP has made available to the public materials related to hand sanitizer ingredients, including monographs and test methods at <https://www.usp.org/sites/default/files/usp/document/health-quality-safety/usp-hand-sanitizer-ingredients.pdf>.

¹³ Hydrogen Peroxide Concentrate USP, Hydrogen Peroxide Topical Solution USP, or technical grade hydrogen peroxide. The hand sanitizer formula should be adjusted based on the actual concentration of hydrogen peroxide used.

¹⁴ The discussion concerning alcohol (ethanol) in this guidance is limited to ethanol used as an active pharmaceutical ingredient (API) for hand sanitizer manufactured as part of the temporary policies outlined in this guidance. FDA’s intent to not take action with regard to alcohol meeting the circumstances described in this guidance does not reflect the risk-benefit calculus that FDA would find acceptable outside of this public health emergency and temporary policies.

¹⁵ FCC grade alcohol should be tested for impurities using the methods recommended in USP and confirmed to meet the limits in Attachment 1, Table 1.

¹⁶ See footnote 15.

¹⁷ Special caution should be taken to ensure any other chemicals on site are not introduced into the ethanol either intentionally or via cross-contamination.

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Ingredients that are described as only meeting American Chemical Society (ACS) grade standards should generally not be used in hand sanitizers.¹⁸

2. The alcohol (ethanol) is denatured either by the alcohol producer or at the point of production of the finished hand sanitizer product.¹⁹ Alcohol and Tobacco Tax and Trade Bureau regulations in 27 CFR part 20 and 21, respectively, describe requirements pertaining to, and provide a number of formulas for, denaturing alcohol. Formulas for use in hand sanitizers under FDA's temporary policies include:²⁰
 - a. Formula No. 40A or No. 40B with or without the tert-butyl alcohol
 - b. Formula No. 3C (isopropyl alcohol²¹)

Denaturing is critical because there have been reports of adverse events, including deaths, from ingestion of hand sanitizer. Most reports are for unintentional ingestion in young children.²² The alcohol should be denatured at either (1) the point of production by the alcohol production firm or (2) the point of manufacture or compounding of the hand sanitizer. Attachment 2 provides more information on the formulas used to denature alcohol before it is used in alcohol-based hand sanitizers. Attachment 2 reproduces Appendix C from FDA guidance for industry "*Temporary Policy for Manufacture of Alcohol for Incorporation into Alcohol-Based Hand Sanitizer Products During the Public Health Emergency (COVID-19)*."

3. The finished hand sanitizer product is compounded according to the following formula consistent with World Health Organization (WHO) recommendations:²³

¹⁸ The chemical standards that have been established by ACS for reagents are not designed to determine the suitability of a chemical for human use. For example, the ACS monographs for ethanol and glycerin do not include any impurity specifications. Where an ingredient is described as meeting both ACS grade and the other standard(s) cited in this section (e.g., USP or FCC grade), use of that ingredient is consistent with this policy. If a compounder wishes to use an ingredient that is described only as ACS grade, the compounder should submit relevant information on the ingredient's concentration and impurity profile to COVID-19-Hand-Sanitizers@fda.hhs.gov with "name of ingredient DATA" in the subject line for FDA's assessment regarding the use of the ingredient under this policy.

¹⁹ See FDA guidance for industry *Temporary Policy for Manufacture of Alcohol for Incorporation Into Alcohol-Based Hand Sanitizer Products During the Public Health Emergency (COVID-19)*.

²⁰ FDA is continuing to evaluate other potential formulas for denaturing. Compounders that wish to use different denaturants (bitterants) should contact FDA at COVID-19-Hand-Sanitizers@fda.hhs.gov with "DENATURANTS REQUEST" in the subject line.

²¹ Using technical grade isopropyl alcohol that meets the requirements of 27 CFR 21.113 as a denaturant in the preparation of the finished hand sanitizer product is consistent with this policy.

²² Every month, there are hundreds of calls to Poison Control centers for unintentional ingestion of hand sanitizer. As indicated from data provided by the American Association of Poison Control Centers (AAPCC), in March 2020 (during the COVID-19 pandemic), calls to Poison Control centers related to hand sanitizer increased by 79 percent compared to March of 2019. The majority of these calls were for unintentional exposures in children 5 years of age and younger.

²³ WHO's recommendations, titled "Guide to Local Production: WHO-recommended Handrub Formulations," are available at https://www.who.int/gpsc/5may/Guide_to_Local_Production.pdf.

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- a. Alcohol (ethanol) (formulated to 80%, volume/volume (v/v)) in an aqueous solution; **or** Isopropyl Alcohol (formulated to 75%, v/v) in an aqueous solution.²⁴,²⁵
- b. Glycerin (glycerol) (1.45% v/v).
- c. Hydrogen peroxide (0.125% v/v).²⁶
- d. Sterile distilled water or boiled cold water.²⁷

The compounder does not add other active or inactive ingredients, such as ingredients to improve the smell or taste due to the risk of accidental ingestion in children. Different or additional ingredients may impact the quality and potency of the product.

4. The compounder pays particular attention to ensure the ethanol or isopropyl alcohol active ingredient is correct and the correct amount of the active ingredient is used.
5. The hand sanitizer is prepared under conditions routinely used by the compounder to compound similar nonsterile drugs.²⁸
6. The hand sanitizer product is produced as an aqueous solution and not as a gel, foam, or aerosol spray.²⁹ The compounder packages the finished hand sanitizer product in packaging appropriate for liquid drug products that will seal sufficiently to prevent evaporation of the alcohol or IPA.³⁰ Manual pump sprays that seal sufficiently to prevent

²⁴ These percentages are consistent with WHO's recommended formulation specifications of 80% alcohol and 75% isopropyl alcohol. In addition, they are consistent with the range of percentages for final products in the 1994 TFM (see also FDA guidance for industry *Temporary Policy for Manufacture of Alcohol for Incorporation Into Alcohol-Based Hand Sanitizer Products During the Public Health Emergency (COVID-19)*).

²⁵ One benefit of FDA's policy relying on use of this particular aspect of the WHO formula is that minor errors in production are still likely to result in a finished hand sanitizer product that exceeds the CDC recommendations of at least 60% ethanol or 70% IPA (isopropanol) content (see FDA's 1994 TFM and the [CDC Statement for Healthcare Personnel on Hand Hygiene during the Response to the International Emergence of COVID-19](#)).

²⁶ Formulate to a final strength of 0.125% v/v hydrogen peroxide using Hydrogen Peroxide Concentrate USP, Hydrogen Peroxide Topical Solution USP, or technical grade hydrogen peroxide, ensuring that the alcohol (ethanol or isopropyl alcohol) concentration remains within the specified level of 80% for ethyl alcohol or 75% for isopropyl alcohol.

²⁷ Water that is boiled should be cold when used to prepare the finished hand sanitizer product.

²⁸ In particular, outsourcing facilities compound drugs subject to current Good Manufacturing Practice requirements, and other pharmacy compounders generally prepare nonsterile drug products from bulk drug substances in compliance with United States Pharmacopoeia chapter 795. Both outsourcing facilities and other pharmacy compounders must also avoid insanitary conditions as set forth in section 501(a)(2)(A) of the FD&C Act (21 U.S.C. 351(a)(2)(A)).

²⁹ This policy does not apply to hand sanitizer gel or foam products because different or additional ingredients may impact the quality and potency of the product. This policy does not apply to aerosol sprays because aerosol sprays with propellant added to the formulation can result in altered potency of the finished hand sanitizer. Aerosol sprays with propellant outside of the formulation (bag on valve) may have safety and potency concerns due to the increased flammability risks of ethanol in an aerosol, risk of overspraying, variability of delivery of the product, rapid evaporation of alcohol, and inhalational toxicities.

³⁰ We note that hand sanitizer offered for transportation or transported in commerce may be subject to the applicable requirements of the U.S. Department of Transportation's Hazardous Materials Regulations (49 CFR Parts 171-180) or guidance issued by the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety

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evaporation are consistent with this policy.

7. The hand sanitizer is labeled consistent with the attached labeling in Appendix A (Labeling for Ethyl Alcohol Formulation Consumer Use), Appendix B (Labeling for Isopropyl Alcohol Formulation Consumer Use), Appendix C (Labeling for Ethyl Alcohol Formulation Health Care Personnel Hand Rub Use), or Appendix D (Labeling for Isopropyl Alcohol Formulation Health Care Personnel Hand Rub Use).^{31, 32}

This policy does not extend to other types of products, such as products: (1) that use different active ingredients; (2) whose potency falls above or below the formulation described above; (3) that are marketed with claims that do not conform to the “Topical Antimicrobial Drug Products for Over-the-Counter Human Use; Tentative Final Monograph for Health-Care Antiseptic Drug Products,” Proposed Rule, 59 FR 31402 (June 17, 1994) (e.g., persistence claims, pathogen-specific disease claims; (4) that are marketed with superiority claims; (5) that are surgical hand rubs, patient preoperative skin preparations; or (6) whose advertising or promotion is false or misleading in any particular.

FDA encourages consumers and health care professionals to report adverse events experienced with the use of hand sanitizers to FDA’s [MedWatch Adverse Event Reporting](#) program:

- Complete and submit the report [online](#); or
- Download and complete the [form](#), then submit it via fax at 1-800-FDA-0178.

Outsourcing facilities can see [Adverse Event Reporting for Outsourcing Facilities Under Section 503B of the Federal Food, Drug, and Cosmetic Act](#) for more information.

Administration (PHMSA). More information is available on PHMSA’s website at: <https://www.phmsa.dot.gov/news/phmsa-issues-temporary-relief-companies-transporting-hand-sanitizer-highway>. These regulations include classification, packaging, marking, labeling and other requirements relevant to transportation.

³¹ The label should include the name and contact information of the compounder. We do not intend to take action against compounders who have already ordered or printed their labels without this information.

³² See note 30.

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Attachment 1

Use of Fuel or Technical Grade Alcohol (Ethanol)³³

Quality standards and specifications for alcohol used in pharmaceuticals (including hand sanitizers) are set by the USP and enforced by FDA pursuant to section 501(b) of the FD&C Act. Alcohol (ethanol) used in pharmaceuticals that does not meet the USP monograph is considered adulterated under section 501(b) of the FD&C Act. The April 15, 2020 update to this guidance on fuel or technical grade ethanol reflected FDA's experience in which data submitted by fuel ethanol manufacturers producing ethanol via fermentation and distillation indicated that at least some fuel ethanol products included harmful chemicals, including gasoline and benzene, which is a known human carcinogen (cancer-causing agent). These impurities would not be expected from a typical fermentation and distillation process but may be present due to the manufacturing environment (e.g., equipment, containers). In addition, FDA has received data that indicate that certain fuel ethanol products contain excessive levels of acetaldehyde, which appears to be a genotoxic carcinogen when in direct contact with tissues.³⁴

Consumer and health care personnel safety is a top priority for FDA, and an important part of FDA's mission is to protect the public from harm, including as we seek to increase supply of hand sanitizer. We are aware that some consumers and health care personnel are currently experiencing difficulties accessing alcohol-based hand sanitizers, and that the CDC recommends consumers use hand sanitizer containing at least 60% alcohol when soap and water are unavailable.³⁵ Therefore, FDA is working with industry to ensure that harmful levels of impurities are not present in ethanol used in hand sanitizer. Upon further review of the data, we are temporarily providing flexibility with respect to certain impurities at the levels established in Table 1 and Table 2 below. Based on our review of available data, we have determined these interim impurity levels can be tolerated for a relatively short period of time given the emphasis on hand hygiene during the COVID-19 public health emergency and to avoid exacerbating access issues for alcohol-based hand sanitizer.

Accordingly, during this public health emergency, FDA does not intend to take action against compounders that compound hand sanitizer using fuel or technical grade ethanol that does not meet the USP or FCC requirements or firms that use such ethanol to prepare hand sanitizer on an interim basis, provided all other circumstances in the guidance are present, including the interim limitations on the impurity levels listed below. FDA is continually assessing the needs and circumstances related to these temporary policies, including the use of fuel and technical grade ethanol in hand sanitizer, and as relevant needs and circumstances evolve, FDA intends to update, modify, or withdraw these policies as appropriate.

³³ Ethanol that contains carcinogens or other harmful impurities at unacceptable levels poses a safety risk to consumers and health care personnel using hand sanitizers. Ethanol that contains harmful levels of impurities and hand sanitizer products containing such ethanol would be considered adulterated under the FD&C Act; products are adulterated if they are prepared, packed, or held under insanitary conditions whereby it may have been rendered injurious to health (see section 501(a)(2)(A)).

³⁴ The toxicology for acetaldehyde differs when ingested as part of an alcoholic beverage (versus applied to the skin as with hand sanitizer), in part due to the liver's metabolism of acetaldehyde.

³⁵ See <https://www.cdc.gov/handwashing/hand-sanitizer-use.html>.

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Accordingly, we are clarifying that fuel or technical grade ethanol that does not meet USP or FCC requirements may be considered for use in hand sanitizer under this temporary policy only if the following circumstances are present:

- Fuel or technical grade ethanol does not contain gasoline or any of its components (e.g., n-heptane).
- Impurities meet the interim limits listed in Table 1 below and no other potentially harmful impurities are present other than those addressed in Table 1. If a firm wishes to use or supply a fuel or technical grade ethanol that does not meet USP or FCC requirements, the firm should test the ethanol (or have a third party laboratory conduct testing) to identify the levels of impurities listed in the USP monograph as well as any other potentially harmful impurities that may be present given the manufacturing environment. These impurities and their interim limits in ethanol for use in hand sanitizer under this policy are provided in Table 1 below. These interim limits take into account the expected clinical usage and administration of hand sanitizers described under this temporary policy. We recommend using test methods described in USP.

Table 1

Impurity	Interim Limit under this policy
Methanol	NMT 630 ppm
Benzene	NMT 2 ppm
Acetaldehyde	NMT 50 ppm*
Acetal (1,1-diethoxyethane)	NMT 50 ppm
Sum of all other impurities	NMT 300 ppm

* Acetaldehyde appears to be genotoxic, and potentially carcinogenic, when in direct contact with tissues. Given the large number of applications of this product expected by consumers and health care personnel during the public health emergency, exposure to hand sanitizer with high levels of acetaldehyde poses a significant safety concern. We are aware that some consumers and health care personnel are currently experiencing difficulties accessing alcohol-based hand sanitizers and that the CDC recommends consumers use hand sanitizer containing at least 60% alcohol when soap and water are unavailable.³⁶ CDC recommends consumers use hand sanitizer containing at least 60% ethanol when soap and water are unavailable. Therefore, FDA is temporarily willing to consider ethanol containing acetaldehyde above that permitted by USP at an interim level no higher than 50 ppm, for use in hand sanitizer under this temporary policy. An interim upper limit of 50 ppm is based on available toxicity data for acetaldehyde considering the expected clinical usage and administration of hand sanitizers under this policy. FDA is continually assessing the needs and circumstances related to the COVID-19 temporary policies, including the use of ethanol containing acetaldehyde at an interim level no higher than 50 ppm, and as relevant needs and circumstances evolve, FDA intends to update, modify, or withdraw these policies as appropriate.

³⁶ See <https://www.cdc.gov/handwashing/hand-sanitizer-use.html>.

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- In cases where fuel or technical grade ethanol that does not meet the interim limits in Table 1 because the sum of all other impurities exceeds the interim limit of 300 ppm, all individual impurities are identified and meet the interim limits in Table 2 below.

The interim impurity limits provided in Table 2 are generally based on ICH Q3C *Guideline on Impurities: Guideline for Residual Solvents*, considering the expected clinical usage and administration that has been defined for hand sanitizers under this policy.

Table 2

Impurity	Interim Limit under this policy
Acetone	NMT 4400 ppm
n-propanol (1-propanol)	NMT 1000 ppm
Ethyl acetate	NMT 2200 ppm
Sec-butanol (2-butanol)	NMT 6200 ppm
Iso-butanol (2-Methyl-1-propanol)	NMT 21700 ppm
n-butanol (1-butanol)	NMT 1000 ppm
iso-amyl alcohol (3-Methyl-1-butanol)	NMT 4100 ppm
Amyl alcohol	NMT 4100 ppm

- For any impurity identified not listed in Table 1 or Table 2, the firm submits data with the level for each individual impurity with information regarding the safety of each impurity, if available, for FDA’s assessment regarding whether the ethanol is suitable for use under this policy.³⁷

³⁷ Submissions should be sent to COVID-19-Hand-Sanitizers@fda.hhs.gov with “ETHANOL DATA” in the subject line for FDA’s assessment regarding the use of the ethanol under this policy.

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Attachment 2

From FDA guidance for industry *Temporary Policy for Manufacture of Alcohol for Incorporation Into Alcohol-Based Hand Sanitizer Products During the Public Health Emergency (COVID-19): Appendix C. Formulas That May Be Used To Denature Alcohol Before It Is Used in Alcohol-Based Hand Sanitizers (Antiseptic Hand Rubs)*

Preferred Formula

27 CFR 21.76 Formula No. 40-B

To every 100 gallons of alcohol add:

One-sixteenth avoirdupois ounce of denatonium benzoate,³⁸ N.F., and 1/8 gallon of tert-butyl alcohol

OR

To every 100 gallons of alcohol add:

One-sixteenth avoirdupois ounce of denatonium benzoate,³⁹ N.F.

Alternative Formulas

27 CFR 21.75 Formula No. 40-A

To every 100 gallons of alcohol add:

One pound of sucrose octaacetate and 1/8 gallon of tert-butyl alcohol

OR

To every 100 gallons of alcohol add:

One pound of sucrose octaacetate

27 CFR 21.37 Formula No. 3-C

To every 100 gallons of alcohol add:

Five gallons of isopropyl alcohol⁴⁰

³⁸ Denatonium benzoate can be added as either a solid or in liquid form, provided the added amount is calculated on a dry basis.

³⁹ See note 38.

⁴⁰ See note 21.

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Appendix A. Labeling for Ethyl Alcohol Formulation Consumer Use

PRINCIPAL DISPLAY PANEL (FRONT OF PACKAGE):

**Alcohol Antiseptic 80%
Topical Solution**

**Hand Sanitizer
Non-sterile Solution**

[Insert Volume of Product in mL]

DRUG FACTS LABEL

Drug Facts	
Active ingredient[s]	Purpose
Alcohol 80% v/v.....	Antiseptic
Use[s]	
Hand sanitizer to help reduce bacteria that potentially can cause disease. For use when soap and water are not available.	
Warnings	
For external use only. Flammable. Keep away from heat or flame	
Do not use	
<ul style="list-style-type: none">• in children less than 2 months of age• on open skin wounds	
When using this product keep out of eyes, ears, and mouth. In case of contact with eyes, rinse eyes thoroughly with water.	
Stop use and ask a doctor if irritation or rash occurs. These may be signs of a serious condition.	
Keep out of reach of children. If swallowed, get medical help or contact a Poison Control Center right away.	
Directions	
<ul style="list-style-type: none">• Place enough product on hands to cover all surfaces. Rub hands together until dry.• Supervise children under 6 years of age when using this product to avoid swallowing.	
Other information	
<ul style="list-style-type: none">• Store between 15-30C (59-86F)• Avoid freezing and excessive heat above 40C (104F)	
Inactive ingredients glycerin, hydrogen peroxide, purified water USP	

Contains Nonbinding Recommendations

Appendix B. Labeling for Isopropyl Alcohol Formulation Consumer Use

PRINCIPAL DISPLAY PANEL (FRONT OF PACKAGE):

**Isopropyl Alcohol Antiseptic 75%
Topical Solution**

**Hand Sanitizer
Non-sterile Solution**

[Insert Volume of Product in mL]

DRUG FACTS LABEL

Drug Facts	
Active ingredient[s]	Purpose
Isopropyl alcohol 75% v/v.....	Antiseptic
Use[s]	
Hand sanitizer to help reduce bacteria that potentially can cause disease. For use when soap and water are not available.	
Warnings	
For external use only. Flammable. Keep away from heat or flame	
Do not use	
• in children less than 2 months of age	
• on open skin wounds	
When using this product keep out of eyes, ears, and mouth. In case of contact with eyes, rinse eyes thoroughly with water.	
Stop use and ask a doctor if irritation or rash occurs. These may be signs of a serious condition.	
Keep out of reach of children. If swallowed, get medical help or contact a Poison Control Center right away.	
Directions	
• Place enough product on hands to cover all surfaces. Rub hands together until dry.	
• Supervise children under 6 years of age when using this product to avoid swallowing.	
Other information	
• Store between 15-30C (59-86F)	
• Avoid freezing and excessive heat above 40C (104F)	
Inactive ingredients glycerin, hydrogen peroxide, purified water USP	

Contains Nonbinding Recommendations

Appendix C. Labeling for Ethyl Alcohol Formulation Health Care Personnel Hand Rub Use

PRINCIPAL DISPLAY PANEL (FRONT OF PACKAGE):

**Alcohol Antiseptic 80%
Topical Solution**

**Antiseptic Hand Rub
Non-sterile Solution**

[Insert Volume of Product in mL]

DRUG FACTS LABEL

Drug Facts	
Active ingredient[s]	Purpose
Alcohol 80% v/v.....	Antiseptic
Use[s]	
Health care personnel hand rub to help reduce bacteria that potentially can cause disease.	
Warnings	
For external use only. Flammable. Keep away from heat or flame	
Do not use	
<ul style="list-style-type: none">• in children less than 2 months of age• on open skin wounds	
When using this product keep out of eyes, ears, and mouth. In case of contact with eyes, rinse eyes thoroughly with water.	
Stop use and ask a doctor if irritation or rash occurs. These may be signs of a serious condition.	
Keep out of reach of children. If swallowed, get medical help or contact a Poison Control Center right away.	
Directions	
<ul style="list-style-type: none">• Place enough product on hands to cover all surfaces. Rub hands together until dry.• Supervise children under 6 years of age when using this product to avoid swallowing.	
Other information	
<ul style="list-style-type: none">• Store between 15-30C (59-86F)• Avoid freezing and excessive heat above 40C (104F)	
Inactive ingredients glycerin, hydrogen peroxide, purified water USP	

Contains Nonbinding Recommendations

Appendix D. Labeling for Isopropyl Alcohol Formulation Health Care Personnel Hand Rub Use

PRINCIPAL DISPLAY PANEL (FRONT OF PACKAGE):

**Isopropyl Alcohol Antiseptic 75%
Topical Solution**

**Antiseptic Hand Rub
Non-sterile Solution**

[Insert Volume of Product in mL]

DRUG FACTS LABEL

Drug Facts	
Active ingredient[s]	Purpose
Isopropyl alcohol 75% v/v.....	Antiseptic
Use[s]	
Health care personnel hand rub to help reduce bacteria that potentially can cause disease.	
Warnings	
For external use only. Flammable. Keep away from heat or flame	
Do not use	
<ul style="list-style-type: none">• in children less than 2 months of age• on open skin wounds	
When using this product keep out of eyes, ears, and mouth. In case of contact with eyes, rinse eyes thoroughly with water.	
Stop use and ask a doctor if irritation or rash occurs. These may be signs of a serious condition.	
Keep out of reach of children. If swallowed, get medical help or contact a Poison Control Center right away.	
Directions	
<ul style="list-style-type: none">• Place enough product on hands to cover all surfaces. Rub hands together until dry.• Supervise children under 6 years of age when using this product to avoid swallowing.	
Other information	
<ul style="list-style-type: none">• Store between 15-30C (59-86F)• Avoid freezing and excessive heat above 40C (104F)	
Inactive ingredients glycerin, hydrogen peroxide, purified water USP	