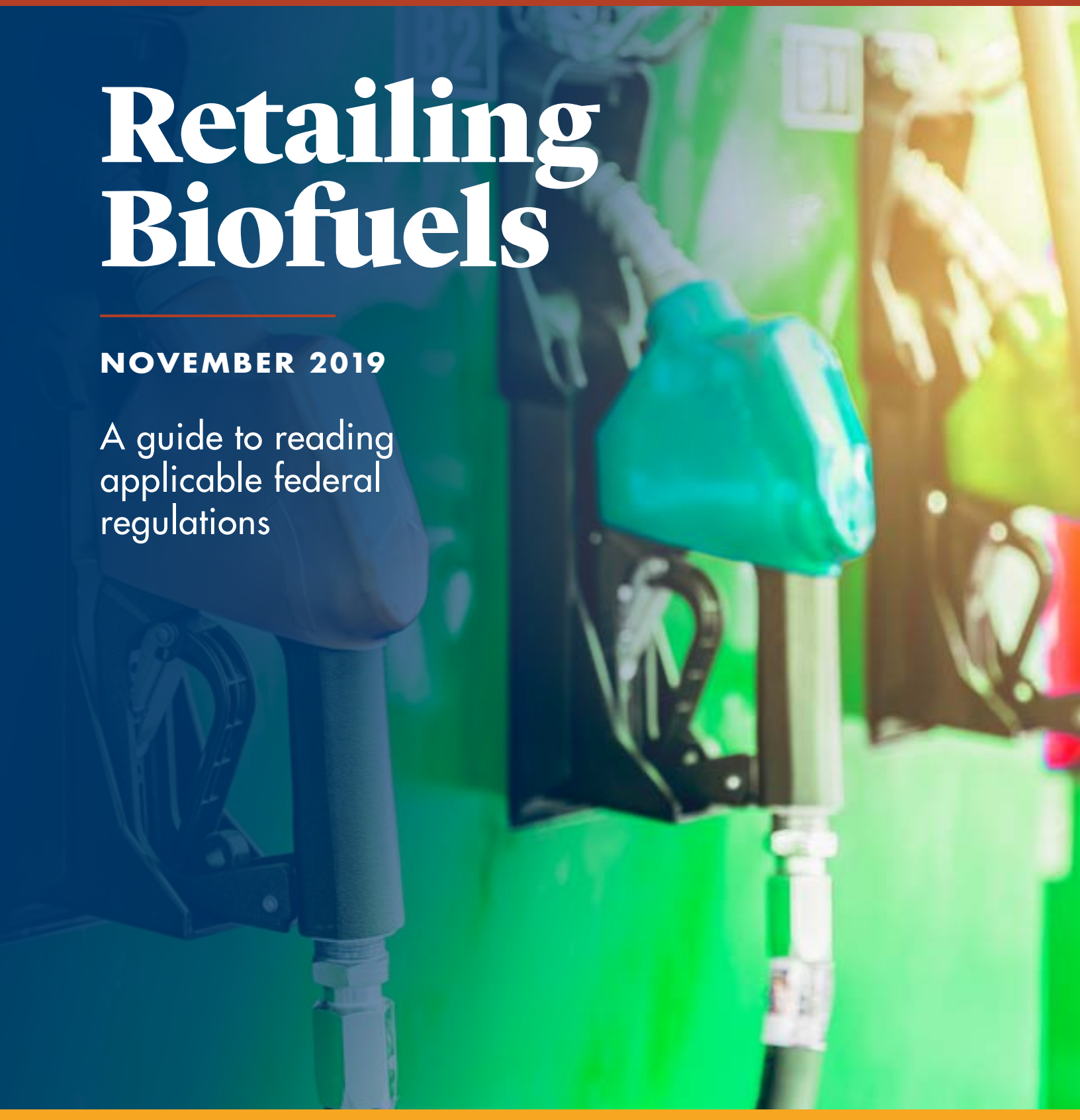
Fuels Institute

Retailing Biofuels

NOVEMBER 2019

A guide to reading applicable federal regulations



Contents

Introduction

A Guide to Reading Applicable Federal Regulations

The evolution of the fuels and vehicles market in the United States, spurred by various factors including the Corporate Average Fuel Economy (CAFE) and Renewable Fuel Standard (RFS) programs, has resulted in the consideration and introduction of new liquid motor fuel formulations. When a new grade of liquid fuel is introduced to the market, distributors and retailers must consider the compatibility of their equipment with the new fuel before they can participate in the new market opportunities that might arise.

There are a number of regulatory considerations that affect the sale of a liquid fuel, and retailers have indicated that they have received various interpretations concerning what is actually required. Advocates for and against new fuels have found themselves at odds concerning the legal requirements to which retailers must adhere to ensure compliance with regulatory requirements.

Considering the myriad of fuel blends that are or might be introduced into the market, the Fuels Institute commissioned this project to provide an objective overview of the federal regulatory issues that must be considered when contemplating the storage and dispensing of a liquid fuel. Specifically, this report is designed to serve as a reference guide and to provide particular focus on regulations pertaining to those fuels which contain greater than 10% ethanol or greater than 20% biodiesel.[1]

This report seeks to provide guidance to help retailers, and other interested stakeholders, by:

1. **Identifying federal regulations for the storage of biofuels in underground storage tanks (above ground storage tanks are not addressed within this report) and dispensing of liquid biofuels**
2. **Identifying third party performance standards that can be used to meet federal requirements**
3. **Identifying liability and non-compliance penalties in federal regulations**

This report focuses specifically on federal regulations, providing an overview of the legal regime within which biofuels retailers operate. State and local regulations are not addressed in this report and should be evaluated by interested parties in addition to applicable federal regulations.

1 Regulations referenced in this document were in effect as of February 2018. Any amendments made after this date have not been incorporated into this review.

This report focuses specifically on federal regulations, providing an overview of the legal regime within which biofuels retailers operate.

This report is designed only to provide guidance in reading federal regulations. Nothing within this report should be construed as rendering an opinion about the adequacy of regulations or be deemed as asserting the compatibility of any equipment. It is exclusively intended to be a tool to help expedite the identification and location of applicable federal regulations.

LEGAL CAVEAT

This paper seeks to identify and provide partial summaries of federal codes relevant to retailing higher blends of biofuels (ethanol above E10 and biodiesel above B20). Certain federal regulations will be identified as applicable, and some of their contents will be mapped in order to depict third-party equipment standards which they reference, or to bring to attention other important compatibility issues contained within the regulations. Those entities storing and dispensing liquid fuels are further subject to state and local regulations, which may be no less stringent than those required by the federal government but in some cases may be more stringent. This document does not address these additional state and local regulations.

This is not intended to be, nor presented to represent, a comprehensive listing or assessment of relevant regulations pertaining to the storage or sale of liquid fuels. It is not intended to represent legal guidance or advice and should be viewed as a tool for further exploration of regulatory and legal requirements. An omission from this paper, of either an entire federal regulation or a specific component within an identified federal regulation, does not constitute lack of legal applicability of the omitted content. There is no claim whatsoever being made that the aspects identified in this paper – be they federal, state, or other laws – are the "most important" or are "more important" than any legal statutes not mentioned in this document. In addition, there is no claim being made for federal regulations identified in this paper where some sub-sections are examined but other sub-sections are not examined, that the sub-sections which were not mentioned or examined are any less important than those which were indeed mentioned or examined.

RESEARCH METHODOLOGY

This study is based upon conversations with industry participants; an independent literature review; a June 30, 2016, Fuels Institute symposium on biofuels compatibility; and detailed reading of the full text of the federal regulations identified herein. Insights gleaned from these multiple sources have been synthesized, interpreted and presented in the context of this overview.

INDUSTRY INTERVIEWS

The industry participants interviewed have included a very broad and diverse range of players, such as government agencies, private companies, non-profit trade groups, and independent consultants. In addition, the expertise of the interviewees has included persons and organizations involved in a wide range of equipment categories, biofuel types, policy stages, and value-chain horizontals.

LITERATURE REVIEW

Since the 2007 phasing-in of the Renewable Fuel Standard (RFS), a considerable amount of literature has appeared to provide guidance for biofuels retailers. While E10 has been the primary blend for meeting RFS requirements, higher concentrations of ethanol (or biodiesel) may also be needed to meet RFS requirements for increasing volumes of biofuels sales. To address the unique issues of storing and dispensing these higher concentrations, many authors have written about the technical, operational, financial, and other issues involved in retailing ethanol blends above E10 and biodiesel blends above B20.

For instance, the National Renewable Energy Laboratory (NREL) serves as a hub where science meets commercialization. The "About Us" page on NREL's website explains that "NREL is the only federal laboratory dedicated to the research, development, commercialization, and deployment of renewable energy and energy efficiency technologies." [2]

Conversations with NREL staff revealed certain documents, co-written or co-sponsored by several federal agencies and occasionally a private firm, which contain robust and well-organized discussion of the issues facing biofuels retailers:

- ***Handbook for Handling, Storing, and Dispensing E85 and Other Ethanol-Gasoline Blends.*** **National Renewable Energy Laboratory. February 2016. Published by U.S. Department of Energy: Energy Efficiency and Renewable Energy, and Clean Cities.**
- ***E15 and Infrastructure.*** **K. Moriarty (NREL) and J. Yanowitz (Ecoengineering, Inc.). May 2015. Published by National Renewable Energy Laboratory.**
- ***Increasing Biofuel Deployment and Utilization through Development of Renewable Super Premium: Infrastructure Assessment.*** **K. Moriarty (NREL), M. Kass and T. Theiss (Oak Ridge National Laboratory). November 2014. Published by National Renewable Energy Laboratory.**
- ***Biodiesel Handling and Use Guide.*** **T. Alleman and R. McCormick (NREL).**

The *E85 Handbook and E15 and Infrastructure* documents are similar in that they both review the best-known third-party equipment standards, and they each contain an appendix with a very long list of common equipment pieces and the extent to which these are biofuels-compatible. In contrast, the *Increasing Biofuel Deployment* document focuses more on costs, and contains a collection of helpful, informative tables on the costs of different components of a fuel station's piping, dispenser, and underground tank systems for various increments of biofuels blends.

EPA's Office of Underground Storage Tanks published a 16-page booklet that discusses the 2015 UST

2 National Renewable Energy Laboratory. "Mission and Programs." Accessed at http://www.nrel.gov/about/mission-programs.html on August 10, 2016.

compatibility requirements for tank systems storing biofuels and petroleum-biofuel blends. The booklet presents actions for minimizing the risk of a release from UST systems due to incompatibility.

- ***UST System Compatibility with Biofuels.* Environmental Protection Agency - Office of Underground Storage Tanks. November 2015.**[3]

At the state level, a consortium of UST regulators - the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) - has written an informative overview called *Compatibility Considerations for UST Systems.*[4] This document is particularly useful for an overview of what is meant by compatibility and what the operational impact will be of the 2015 update of federal UST regulations in terms of updated compliance requirements. Moreover, the ASTSWMO document provides appendices including checklists, case studies, and indications of where to find additional resources. "Appendix B: References and Additional Resources" is a compendium of links to a collection of documents on biofuels compatibility and compliance issues.

Additional scientific background on biofuels properties can be found in a study called *Biofuels: Release Prevention, Environmental Behavior, and Remediation*, published by the Interstate Technology & Regulatory Council (ITRC) in September 2011.[5] This publication summarizes the physical and chemical properties of biofuel blends; environmental hazards; emergency response procedures; and the resultant equipment adjustments that must be made at fuel dispensing facilities. This publication shows how the properties of biofuels impact the entire value chain, situating the fuel dispensing facility within the vertical context of production, distribution, and final sale of these biofuel blends.

Finally, yet another resource for documents has been industry groups promoting the production and sale of ethanol. Examples of trade group publications include the *E15 Retailer Handbook*[6] published in 2013 by the Renewable Fuels Association, and the "Checklist: Ethanol Blends"[7] found on the "Ethanol Retailer" website of Growth Energy. These documents are valuable for their focus on the very practical day-to-day concerns of fuel retailers, providing a helpful overview of how to address these challenges.

3 https://www.epa.gov/ust/ust-system-compatibility-biofuels

4 Association of State and Territorial Solid Waste Management Officials. Emerging Fuels Task Force, Tanks Subcommittee. *Compatibility Considerations for UST Systems: Final Report*. Updated May 2016. First published 2013. Accessed at http://www.astswmo.org/files/policies/Tanks/2016-05-ASTSWMO%20Compatibility%20Considerations%20for%20UST%20Systems_FinalReport-v2.pdf on August 10, 2016.

5 Interstate Technology & Regulatory Council, Biofuels Team. *Biofuels: Release Prevention, Environmental Behavior, and Remediation*. Published September 2011. Accessed at http://www.itrcweb.org/GuidanceDocuments/biofuels/biofuels-1.pdf on August 10, 2016.

6 Renewable Fuels Association. E15 Retailer Handbook. 2013. Accessed at http://ethanolrfa.3cdn.net/643f311e9180a7b1a8_wwm6iuulj.pdf on August 10, 2016.

7 Growth Energy. Checklist: Ethanol Blends. Publication date unknown. Accessed at http://www.ethanolretailer.com/images/uploads/md_checklistforretailers_print.pdf on August 10, 2016.

Federal Regulations

Federal Regulations That Apply to Biofuels Retailing

Fuel retailers wishing to add new biofuels blends for consumer purchase must comply with a wide assortment of federal, state, and local regulations, which typically derive from long-established regulations for all liquid motor fuels.

However, the relatively new, higher concentrations of biofuels (specifically ethanol above E10 and biodiesel above B20) entering the market present a unique, specific set of compliance issues. The industry is undergoing a period of adjustment for the newly-introduced fuel grades that could last many years, as third-party standards are developed, new equipment is manufactured, and new scientific knowledge is attained. As this adjustment progresses, and these fuels enter the market, there is a need to review the regulatory environment to ensure that knowledge about compliance requirements and liability exposure, as set forth in regulatory documents, is widely disseminated and understood.

Federal regulations specify guidelines that those storing and dispensing liquid fuels must follow for designing, constructing, and operating their UST and dispensing systems. This includes matters such as the materials chosen for equipment; compatibility between fuels and fuel containers; testing procedures; construction procedures; labeling; protection against fires, overfills, and leakage of hazardous substances; as well as the composition of the actual fuels being stored and dispensed.

Federal regulations often delegate enforcement to state or local jurisdictions, and moreover, provide the latitude for state or local implementing agencies to enhance the federal regulations with even more stringent compliance requirements. This document focuses exclusively on federal regulations and will not provide detailed content on state or local regulations, even though motor fuels retailers must follow federal, state, and local regulations.

MODEL FIRE CODES: NFPA AND ICC

Before proceeding to an in-depth analysis of the federal regulations, special mention must be made of three codes of practice relating to fire protection. These include two codes of practice written by the National Fire Protection Association (NFPA) and one from the International Code Council (ICC). The model codes in Figure 1 typically serve as the basis of the text for fire codes adopted as law by state or local authorities having jurisdiction, and contain many specifications for design, construction, installation, and operation of both aboveground and belowground storage and dispensing equipment.

FIGURE 1: MODEL FIRE CODES[8]

ORGANIZATION	CODE
National Fire Protection Association (NFPA)	30: Flammable and Combustible Liquids Code
National Fire Protection Association (NFPA)	30A: Code for Motor Fuel Dispensing Facilities and Repair Garages
International Code Council (ICC)	International Fire Code 2015 (IFC 2015

Sources: Industry interviews, independent literature review, NFPA and ICC websites

Every state or local jurisdiction adopts some configuration of these model fire codes as law for homes and businesses. Readers should be sure to check with their local fire marshal in order to determine which specific configuration of fire protection codes have been chosen as obligatory by the local authority having jurisdiction.

Industry experts indicated they consider state and local fire codes, as well as NFPA 30 and 30A and the International Fire Code (IFC, which is part of ICC), primary reference materials which they consult frequently. The full text of the most recent NFPA and IFC codes can be accessed online at www.nfpa.org and www.iccsafe.org. A fee may be required for certain versions.

FEDERAL REGULATIONS

A combination of research interviews with industry participants, and independent literature review, has identified the federal regulations in Figure 2 as relevant to biofuels retailing. The word "relevant" is meant insofar as regulatory enforcement action or a private civil lawsuit against a company operating a motor fuel UST and dispensing system may result from not following the compliance requirements within these regulations. The word "biofuel" is meant to indicate ethanol at a higher blend than E10 or biodiesel at a higher blend than B20 (where applicable, regulations pertaining to the dispensing of biodiesel blends above B5 and less than B20 – such as labeling - will be identified in this report).

8 The current versions of these codes were published in 2018. However, it is possible not all states have adopted the latest version and could still be working from the 2015 or earlier version.

FIGURE 2: FEDERAL REGULATIONS FOR RETAIL MOTOR FUEL STATIONS

AGENCY	FULL NAME OF REGULATION	C.F.R. CODE
EPA	Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST)	40 C.F.R. 280
EPA	Regulation of Fuels and Fuel Additives	40 C.F.R. 80
OSHA	Occupational Safety and Health Standards Subpart H—Hazardous Materials Section 106—Flammable Liquids	29 C.F.R. 1910.106
OSHA	Safety and Health Regulations for Construction Subpart F—Fire Protection and Prevention Section 152—Flammable Liquids	29 C.F.R. 1926.152
FTC	Automotive Fuel Ratings, Certification, and Posting	16 C.F.R. 306

Source: Industry Interviews, Literature Review, and Electronic Code of Federal Regulations

Those storing and dispensing motor fuels are required to comply with all applicable federal, state and local regulations. Developing a full understanding of these is essential to ensuring full compliance.

Navigating and keeping track of relevant requirements within federal regulations can be a daunting effort. This section presents a basic overview of each identified federal regulation, including how their contents are organized.

This chapter will purposefully omit actual language contained within any of the regulations (with a few exceptions), because the goal is to show how these regulations are organized and where they can be found in the Code of Federal Regulations. This is intended to resolve a recurring issue among industry participants, that the regulations are so sprawling that it is hard for a first-time reader to even understand their broad structure, let alone the contents.

THE CODE OF FEDERAL REGULATIONS (C.F.R.)

When Congress passes legislation and it is signed into law by the President, the provisions of the new law are incorporated within the context of existing, or newly created, federal regulations. These rules that govern the United States are collected within the Code of Federal Regulations (C.F.R.), which is publicly accessible at www.ecfr.gov

The C.F.R. is an expansive collection of regulations, which are catalogued within 50 different primary sections, known as Titles. When Congress seeks to amend or create a law, it does so by amending one of these 50 titles. And these titles are subdivided into many layers. To the right is a general outline of how the C.F.R. is organized. Reference to this structure is made throughout this report.

Typically, when the C.F.R. is referenced, only the Title and Part are referenced (i.e., 40 C.F.R. 280). When providing more specific reference, however, additional detail can be provided. For example, a reference might list 16 C.F.R. 306.12(a)(4). See this example explained in the sidebar.

With the electronic Code of Federal Regulations, finding a referenced regulation is simplified using the search engine. Consequently, not every reference needs to include every step in the outline to facilitate locating the appropriate regulation.

HOW TO READ THE CODE OF FEDERAL REGULATIONS (C.F.R.)

Below is a general outline of how the C.F.R. is organized. Reference to this structure is made throughout this report.

TITLE
SUBTITLE
CHAPTER
SUBCHAPTER
PART
SUBPART
SECTION
SUBSECTION
PARAGRAPH
SUBPARAGRAPH

In this document, we refer specifically to Titles:
16 Commercial Practices
29 Labor
40 Protection of Environment

Subtitles are not used within every Title, such as the example using Title 16 shown below.

Typically, when the C.F.R. is referenced, only the **Title** and **Part** are referenced (i.e., **40 C.F.R. 280**).

Example: 16 C.F.R. 306.12(a)(4)

For example, a reference might list **16 C.F.R. 306.12(a)(4)**. This would direct the reader to **Title 16**, **Part 306**, **Section 306.12.**

Within this reference, there is no identification of **Chapter** or **Subchapter** because the number of the Parts is sequential, spanning the other categories. For example, Title 16, Chapter 1 contains parts 0-999, Chapter 2 contains parts 1000-1799, so the actual outline would be:

TITLE	**16.** Commercial Practices
SUBTITLE	
CHAPTER	**1.** Federal Trade Commission
SUBCHAPTER	**C.** Regulations under Specific Acts of Congress
PART	**306.** Automotive Fuel Ratings, Certification and Posting
SUBPART	
SECTION	**306.12** Labels
SUBSECTION	
PARAGRAPH	**(a)** Layout
SUBPARAGRAPH	**(4)** For ethanol flex fuels

EPA Regulations

EPA's Underground Storage Tank (UST) Regulations (40 C.F.R. 280)

The regulatory requirements that apply to underground storage tank (UST) regulations are found in 40 C.F.R. 280.

Figure 3 provides an outline of sections within 40 C.F.R. 280 that are specifically relevant to fuels and biofuels compatibility. Subparts A through D, and J, contain the information most likely to apply to day-to-day operations of a fuel dispensing facility, such as choosing equipment, testing for the equipment's effectiveness, performing repairs, and so on. Of the omitted subparts, Subparts E and F apply only once a release is suspected or has occurred; Subpart G refers to special situations not encountered by all stations; Subparts H and I describe procedures for insurance and other financial arrangements; and Subpart K does not apply to fuel dispensing facilities.

EPA has included within the regulations language specifically governing how a tank owner may demonstrate compliance with the compatibility provisions of the regulations when storing and dispensing ethanol blends exceeding 10% by volume and biodiesel blends exceeding 20% by volume. The specific provisions contained in this section are presented in Figure 4.

FIGURE 3. 40 C.F.R. 280
Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST)
40 C.F.R. 280

SUBPART	SECTION
A. Program Scope and Installation Requirements for Partially Excluded UST Systems	10. Applicability 11. Installation requirements for partially excluded UST systems 12. Definitions
B. UST Systems: Design, Construction, Installation, and Notification	20. Performance standards for new UST systems 21. Upgrade of existing UST systems 22. Notification Requirements
C. General Operating Requirements	30. Spill and Overfill Control 31. Operation and maintenance of corrosion protection 32. Compatibility 33. Repairs allowed 34. Reporting and recordkeeping 35. Periodic testing of spill prevention equipment and containment sumps used for interstitial monitoring of piping and periodic inspection of overfill prevention equipment 36. Periodic operation and maintenance walkthrough inspections
D. Release Detection	40. General requirements for all UST systems 41. Requirements for petroleum UST systems 42. Requirements for hazardous substance UST systems 43. Methods of release detection for tanks 44. Methods of release detection for piping 45. Release detection recordkeeping
J. Operator Training	240. General requirements for all UST systems 241. Designation of Class A, B, and C operators 242. Requirements for operator training 243. Timing of operator training 244. Retraining 245. Documentation

Source: Electronic Code of Federal Regulations

FIGURE 4. 40 C.F.R. 280.32 - COMPATIBILITY
40 C.F.R. 280.32

PARAGRAPH	SUBPARAGRAPH
(a) Owners and operators must use an UST system made of or lined with materials that are compatible with the substance stored in the UST system.	
(b) Owners and operators must notify the implementing agency at least 30 days prior to switching to a regulated substance containing greater than 10 percent ethanol, greater than 20 percent biodiesel, or any other regulated substance identified by the implementing agency. In addition, owners and operators with UST systems storing these regulated substances must meet one of the following:	(1) Demonstrate compatibility of the UST system (including the tank, piping, containment sumps, pumping equipment, release detection equipment, spill equipment, and overfill equipment). Owners and operators may demonstrate compatibility of the UST system by using one of the following options: (i) Certification or listing of UST system equipment or components by a nationally recognized, independent testing laboratory for use with the regulated substance stored; or (ii) Equipment or component manufacturer approval. The manufacturer's approval must be in writing, indicate an affirmative statement of compatibility, specify the range of biofuel blends the equipment or component is compatible with, and be from the equipment or component manufacturer; or, (2) Use another option determined by the implementing agency to be no less protective of human health and the environment than the options listed in paragraph (b)(1) of this section.
(c) Owners and operators must maintain records in accordance with §280.34(b) documenting compliance with paragraph (b) of this section for as long as the UST system is used to store the regulated substance.	

Source: Electronic Code of Federal Regulations

OSHA Regulations

OSHA Flammable Liquids Regulations (29 C.F.R. 1910.106, 29 C.F.R. 1926.152)

OSHA has enacted two separate flammable liquids regulations—29 C.F.R. 1910.106 and 29 C.F.R. 1926.152—that contain language concerning fuel dispensing facilities. These regulations apply to all liquid motor fuels, including but not limited to biofuels.[9]

Figure 5 shows the provisions of OSHA Part 1910 which apply to fuel dispensing facilities. Specific language of interest to fuel dispensing facilities can be found in Section 1910.106, Flammable Liquids. The presented provisions contain language of acute relevance to fuel dispensing facilities, particularly to biofuels compatibility.

OSHA Part 1926 specifies construction standards. It contains Subparts A through CC, as shown in Figure 6. Subpart F, Fire Protection and Prevention, Section 152, Flammable Liquids, is of most direct relevance to fuel dispensing facilities. All of the presented provisions contain language of acute relevance to the issues discussed in this research study.

9 The general body of OSHA regulations can be found throughout 29 C.F.R. Part 1910.

FIGURE 5. 29 C.F.R. 1910 - HAZARDOUS MATERIALS
Subpart H - Hazardous Materials
Section 106 - Flammable Liquids
29 C.F.R. 1910.106

PARAGRAPH	SUBPARAGRAPH
(a) Tank storage	(1) Design and Construction of Tanks
	(2) Installation of outside aboveground tanks
	(3) Installation of underground tanks
	(4) Installation of tanks inside of buildings
	(5) Supports, foundations, and anchorage for all tank locations
	(7) Testing
(c) Piping, valves, and fittings	(1) General
	(2) Materials for piping, valves, and fittings
	(3) Pipe joints
	(4) Supports
	(5) Protection against corrosion
	(6) Valves
	(7) Testing
(g) Service Stations	(1) Storage and handling
	(3) Dispensing systems
	(4) Marine service stations
	(5) Electrical equipment
	(6) Heating equipment
	(7) Drainage and waste disposal
	(8) Sources of ignition
	(9) Fire control

Source: Electronic Code of Federal Regulations

FIGURE 6. 29 C.F.R. 1926 - FIRE PROTECTION AND PREVENTION
Subpart F - Fire Protection and Prevention
Section 152 - Flammable Liquids
29 C.F.R. 1926.152

PARAGRAPH	SUBPARAGRAPH
(a) General Requirements	
(b) Indoor storage of flammable liquids	
(c) Storage outside buildings	
(d) Fire control for flammable liquid storage	
(e) Dispensing liquids	
(f) Handling liquids at point of final use	
(g) Service and refueling areas	
(i) Tank Storage	(1) Design and construction of tanks (2) Installation of outside aboveground tanks (3) Installation of underground tanks (4) Installation of tanks inside of buildings (5) Supports, foundations, and anchorage for all tank locations (6) Sources of ignition (7) Testing
(j) Piping, valves, and fittings	(1) General (2) Materials for piping, valves, and fittings (3) Pipe joints (4) Supports (5) Protection against corrosion (6) Valves (7) Testing

Source: Electronic Code of Federal Regulations

Labeling Requirements

FTC (16 C.F.R. 306) & EPA (40 C.F.R. 80, Subpart N)

The two regulations identified in this study which provide federal labeling requirements include the FTC's 16 C.F.R. 306 and the EPA's 40 C.F.R. 80, Subpart N (1501 – 1509).

FTC "AUTOMOTIVE FUEL RATINGS, CERTIFICATION AND POSTING" (16 C.F.R. 306)

The Federal Trade Commission (FTC), a well-known consumer protection and antitrust agency, is an additional federal agency that regulates the activities of fuel retailers. According to FTC regulations outlined in 16 C.F.R. 306, retailers of liquid automotive fuels must post very specific notifications concerning the automotive fuel ratings of fuels being dispensed. Under the regulations, "automotive fuel ratings" refers to different things depending on the type of fuel - for gasoline, it means the octane rating; for alternative liquid fuels, it means the percentage by volume of the principal component of the fuel; for biomass-based diesel containing more than 5% biomass-based diesel, it means the percentage of biomass-based diesel by volume; and for ethanol flex fuels, it means the ethanol component as the percentage by volume.[10] See Figure 7.

10 16 C.F.R. 306.0 (j)

FIGURE 7. 16 C.F.R. 306 - AUTOMOTIVE FUEL RATINGS, CERTIFICATION AND POSTING
16 C.F.R. 306

SECTION HEADER	SECTION	PARAGRAPH
General	0. Definitions 1. What this rule does 2. Who is covered 4. Preemption	
Duties of Retailers	10. Automotive fuel rating posting 11. Recordkeeping	
Label Specifications	12. Labels	(a) Layout (See below) (b) Type size and setting (c) Colors (d) Contents (e) Special label protection (f) Illustrations of labels
Appendix	Summary of Labeling Requirements for Biodiesel Fuels	

Source: Electronic Code of Federal Regulations

Figure 8 lays out the primary sections of 306.12(a), which provide additional insight as to the applicability of 16 C.F.R. 306 by specifying the different types of fuel to which 306.12 applies.

CLARIFYING REQUIREMENTS FOR THE LABELING OF E15 AND FLEX FUELS

The general FTC requirements specify that for gasoline flex fuels containing more than 10% and no greater than 50% ethanol, dispensers must include a label that either posts the exact percentage of ethanol concentration or the percentage of ethanol rounded to the nearest factor of 10. For flex fuels containing between 50% and 83% ethanol, dispensers must include labels that either post the exact percentage of ethanol concentration, the percentage of ethanol rounded to the nearest factor of 10 or the phrase "51% to 83% Ethanol."

Resolving questions relative to the labeling of fuels containing 10% - 15% ethanol (E15), the FTC defers regulation to EPA by exempting from the rule gasoline containing between 10% and 15% ethanol, provided the dispenser complies with the

FIGURE 8. 16 C.F.R. 306.12(a) - LABELS
Section 306.12(a) - Layout
16 C.F.R. 306.12(a)

SUBPARAGRAPH	
(1)	**For gasoline labels**
(2)	**For alternative liquid automotive fuel labels (one principal component), other than biodiesel, biomass-based diesel, biodiesel blends, or biomass-based diesel blends**
(3)	**For alternative liquid automotive fuel labels (two components)**
(4)	**For ethanol flex fuels** (i)(a) For all ethanol flex fuels (i)(b) For ethanol flex fuels containing more than 10 percent and no greater than 50 percent ethanol by volume. (i)(c) For ethanol flex fuels containing more than 50 percent and no greater than 83 percent ethanol by volume.
(5)	**For biodiesel blends containing more than 5 percent and no greater than 20 percent biodiesel by volume.**
(6)	**For biomass-based diesel blends containing more than 5 percent and no greater than 20 percent biomass-based diesel by volume.**
(7)	**For biodiesel blends containing more than 20 percent biodiesel by volume.**
(8)	**For biomass-based diesel blends containing more than 20 percent biomass-based diesel by volume.**
(9)	**For 100% biodiesel.**
(10)	**For 100% biomass-based diesel.**

Source: Electronic Code of Federal Regulations

EPA labeling requirements for that fuel. 16 C.F.R. 306.10(a) states:

> (a) If you are a retailer, you must post the automotive fuel rating of all automotive fuel you sell to consumers. You must do this by putting at least one label on each face of each dispenser through which you sell automotive fuel. If you are selling two or more kinds of automotive fuel with different automotive fuel ratings from a single dispenser, you must put separate labels for each kind of automotive fuel on each face of the dispenser. Provided, however, that you do not need to post the automotive fuel rating of a mixture of gasoline and ethanol containing more than 10 but not more than 15 percent ethanol if the face of the dispenser is labeled in accordance with 40 C.F.R. 80.1501.

EPA REGULATION OF FUELS AND FUEL ADDITIVES (40 C.F.R. 80)

Overall, 40 C.F.R. 80 addresses how to determine the official blend of liquid gasoline (i.e. oxygenation, reformulated, etc.) and contains many regulatory provisions for the Renewable Fuel Standard. Subpart, N – Additional Requirements for Gasoline-Ethanol Blends, contains the clause referred to by the FTC relative to E15.

Section 80.1501 applies to the labeling of E15 at retail fuel stations and presents very specific labeling requirements for E15.

> Section 80.1501 – What are the labeling requirements that apply to retailers and wholesale purchaser-consumers of gasoline-ethanol blends that contain greater than 10 volume percent ethanol and not more than 15 volume percent ethanol?

FIGURE 9. 40 C.F.R. 80 - REGULATION OF FUELS AND FUEL ADDITIVES
Subpart N - Additional Requirements for Gasoline-Ethanol Blends
40 C.F.R. 80 Subpart N

SECTION	
1500	Definitions
1501	E15 Labeling Requirements
1502	E15 Survey Requirements
1503	E15 Product Transfer Document Requirement
1504	Prohibited Acts
1505	Liability for Violations
1506	Penalties
1507	Defenses
1508	Evidence to determine compliance or liability
1509	Rounding a test result

Source: Electronic Code of Federal Regulations

Section 80.1501 paragraph (a) provides the basics of what must be done:

> (a) Any retailer or wholesale purchaser-consumer who sells, dispenses, or offers for sale or dispensing E15 shall affix the following conspicuous and legible label to the fuel dispenser:
>
> ATTENTION
> E15
> UP TO 15% ETHANOL
> USE ONLY IN
> • 2001 AND NEWER PASSENGER VEHICLES
> • FLEX-FUEL VEHICLES
>
> DON'T USE IN OTHER VEHICLES, BOATS, OR GASOLINE-POWERED EQUIPMENT. IT MAY CAUSE DAMAGE AND IS PROHIBITED BY FEDERAL LAW.
>
> *Source: Electronic Code of Federal Regulations*

Section 1501(b) Clause (b) goes on to present specifications for the appearance of the above wording in (a). Only the introductory sentence of (b), and the table of contents for (b), will be shown below.

FIGURE 10. REQUIREMENTS FOR APPEARANCE AND PLACEMENT
40 C.F.R. 80.1501(b)

PARAGRAPH (b)
(1) Dimensions
(2) Placement
(3) Text
(4) Color
(5) Alternative Labels

Source: Electronic Code of Federal Regulations

Readers are advised to read the actual regulation, and/or to consult with legal counsel, for further information on how to comply.

EPA'S GASOLINE CONTROL PROVISIONS (40 C.F.R. 80, SUBPART B)

In addition to labeling requirements for E15, 40 C.F.R. 80, Subpart B further specifies when fuels with ethanol content over 10 percent are able to be legally sold. Specifically, federal regulations allow gasoline containing 9% - 10% ethanol to exceed applicable Reid Vapor Pressure requirements (expressed in terms of pounds per square inch) by one PSI in conventional gasoline markets during the ozone control period, between June 1 and September 15. This one PSI waiver does not apply to gasoline containing more than 10% ethanol. As a consequence, E15 is only approved for sale in conventional gasoline markets if the finished product meets the same RVP requirements as conventional gasoline is required to meet.[11] This restriction, however, does not apply to areas subject to the EPA Reformulated Gasoline Program, which does not provide for the one pound RVP waiver for ethanol-blended fuels.[12]

Figure 11 lays out the relevant sections of 40 C.F.R. 80.27 detailing the sale restrictions.

11 In late 2018, the Administration announced plans to change the regulations to allow E15 to be sold year-round.

12 The prohibition on the sale of E15 during the ozone control months, and the language contained in the FTC labeling requirements, has led to confusion within the marketplace regarding the labels required for E15 during the ozone control months. During the Fuels Institute annual meeting in May 2018 (FUELS2018), a representative from EPA was asked if retailers were permitted to replace the EPA-mandated E15 label with the FTC flex fuel label to continue selling E15 during the ozone control months to consumers driving flexible fuel vehicles. The representative answered that this action was not permitted because E15 is defined by EPA as a gasoline and, therefore, labeling it as a flex fuel was not permitted. As of the time of publication, the Fuels Institute was aware of no enforcement action against a fuel dispensing facility related to the labeling of E15 during the ozone control months.

FIGURE 11. 40 C.F.R. 80
Subpart B - Controls and Prohibitions
Section 27 - Controls and Prohibitions on Gasoline Volatility
40 C.F.R. 27

PARAGRAPH	SUBPARAGRAPH
(a)	(1) Prohibited activities in 1992 and beyond. During the 1992 and later high ozone seasons no person, including without limitation, no retailer or wholesale purchaser-consumer, and during the 1992 and later regulatory control periods, no refiner, importer, distributor, reseller, or carrier shall sell, offer for sale, dispense, supply, offer for supply, transport or introduce into commerce gasoline whose Reid vapor pressure exceeds the applicable standard. As used in this section and § 80.28, "applicable standard" means: (i) 9.0 psi for all designated volatility attainment areas; and (ii) The standard listed in this paragraph for the state and time period in which the gasoline is intended to be dispensed to motor vehicles for any designated volatility nonattainment area within such State or, if such area and time period cannot be determined, the standard listed in this paragraph that specifies the lowest Reid vapor pressure for the year in which the gasoline is sampled. Designated volatility attainment and designated volatility nonattainment areas and their exact boundaries are described in 40 CFR part 81, or such part as shall later be designated for that purpose. As used in this section and § 80.27, "high ozone season" means the period from June 1 to September 15 of any calendar year and "regulatory control period" means the period from May 1 to September 15 of any calendar year.
(b) Determination of compliance Compliance with the standards listed in paragraph (a) of this section shall be determined by the use of the sampling methodologies specified in § 80.8 and the testing methodology specified in § 80.46(c).	
(c) Liability Liability for violations of paragraph (a) of this section shall be determined according to the provisions of § 80.28. Where the terms refiner, importer, distributor, reseller, carrier, ethanol blender, retailer, or wholesale purchaser-consumer are expressed in the singular in § 80.28, these terms shall include the plural.	

FIGURE 11 CONTINUED ON PAGE 22

FIGURE 11. CONTINUED FROM PAGE 21

SUBSECTION (CONTINUED)	PARAGRAPH AND SUBPARAGRAPH
(d) Special provisions for alcohol blends.	(1) Any gasoline which meets the requirements of paragraph (d)(2) of this section shall not be in violation of this section if its Reid vapor pressure does not exceed the applicable standard in paragraph (a) of this section by more than one pound per square inch (1.0 psi). (2) In order to qualify for the special regulatory treatment specified in paragraph (d)(1) of this section, gasoline must contain denatured, anhydrous ethanol. The concentration of the ethanol, excluding the required denaturing agent, must be at least 9% and no more than 10% (by volume) of the gasoline. The ethanol content of the gasoline shall be determined by the use of one of the testing methodologies specified in § 80.46(g). The maximum ethanol content shall not exceed any applicable waiver conditions under section 211(f) of the Clean Air Act.
(e) Testing exemptions.	

Source: Electronic Code of Federal Regulations

Third-Party Standards

Third-Party Standards for Biofuels Equipment in Federal Regulations

Third-party standards are often recognized and approved as options for compliance within the federal regulations.

(Some state and local regulations require the use of third-party standards.) These third-party standards have been identified by closely reading the full text of the regulations and have been filtered using insights gleaned during research interviews with industry participants. Of the five federal regulations reviewed in this study, the EPA's underground storage tank (UST) regulation, 40 C.F.R. 280, contains by far the most third-party standards, while the two OSHA regulations Sections (1910.106 and 1926.152) contain fewer. The labeling requirements (FTC 16 C.F.R. 306 and EPA 40 C.F.R. 80.1501 and 80.27) do not contain any third-party standards.

This section first will provide an overview organized by equipment category. Following this presentation, the section will provide a detailed summary of each respective federal agency and regulation. The goal of the two taxonomies, first by equipment category, then within each regulation, is to increase accessibility of the information.

REGULATIONS BY EQUIPMENT CATEGORY

UNDERGROUND STORAGE TANKS

Underground storage tanks are regulated by both the EPA via 40 C.F.R. 280 and OSHA via 29 C.F.R. 1910 and 29 C.F.R. 1926. The EPA regulations apply not just to the UST itself, but to the UST system which is defined as "an underground storage tank, connected underground piping, underground ancillary equipment, and containment systems, if any."[13] The OSHA regulations contain considerable language on USTs, involving many requirements for "approved" or "listed" standards from third-party organizations to be met.

Figure 12 summarizes where UST specifications can be found within EPA and OSHA regulations.

DISPENSERS

Figure 13 shows where in the OSHA regulations to find compatibility language on aboveground dispensing units. It should also be noted that the model fire codes—NFPA 30, NFPA 30A, and IFC—contain considerable amounts of compatibility and compliance language for aboveground equipment, including most if not all of the OSHA requirements. These fire codes will not be discussed in this

13 40 C.F.R. 280.12

FIGURE 12. LOCATING COMPATIBILITY LANGUAGE FOR USTS IN FEDERAL REGULATIONS
Note: The entire regulation deals with UST systems.

AGENCY	C.F.R. CODE	RELEVANT SECTIONS	
EPA	40 C.F.R. 280	Subpart B, 20(a)	Construction of new tanks
		Subpart B, 21(b)	Upgrading of existing tanks
		Subpart C, 32	Compatibility
		Subpart C, 34	Reporting and recordkeeping
OSHA	29 C.F.R. 1910	106(b)(1)	Design and Construction of Tanks
		106(b)(3)	Installation of underground tanks
		106(b)(5)	Supports, foundations, and anchorage for all tank locations
		106(b)(7)	Testing
	29 C.F.R. 1926	152(i) (1)	Design and construction of tanks
		152(i) (3)	Installation of underground tanks
		152(i) (5)	Supports, foundations, and anchorage for all tank locations
		152(i) (7)	Testing

Source: Research Interviews, Literature Review, and Electronic Code of Federal Regulations

FIGURE 13. LOCATING COMPATIBILITY LANGUAGE FOR DISPENSERS IN FEDERAL REGULATIONS

AGENCY	C.F.R. CODE	RELEVANT SECTIONS	
OSHA	29 C.F.R. 1910	106(g)(3)(iv)	Service stations: Dispensing systems
	29 C.F.R. 1926	152(e)	Dispensing Liquids
		152(g)	Service and Refueling Areas

Source: Research Interviews, Literature Review, and Electronic Code of Federal Regulations

study due to the focus here exclusively on federal regulations. But retailers are advised to closely read the fire code in their state or local authority having jurisdiction in order to determine what third-party standards can be used for aboveground dispensing equipment to come into full compliance with the requirements of these fire codes.

PIPING, VALVES, AND FITTINGS

The piping, valves, and ancillary fittings of a fuel dispensing facility are included in EPA's definition of "UST System" and must be properly installed and monitored in order to prevent leaks. Both EPA and OSHA regulate these components, as shown in Figure 14.

GENERAL COMPATIBILITY REQUIREMENTS

EPA's UST regulation, Section 40 C.F.R. 280.32, stands alone as a uniquely general sub-section, since it contains the only compatibility requirements in the regulations, which apply globally across the entire 40 C.F.R. 280 regulation.

It is worth noting that Section 280.32 is also the only equipment-related regulatory clause identified in this study that contains language expressly referring to the specific, precise range of biofuel blends examined in this research study. Section 280.32(b) refers to "a regulated substance containing greater than 10 percent ethanol, greater than 20 percent biodiesel." The FTC labeling requirements do mention these blends but not as specifically and not in the same clause or sentence. See Figure 15.

FIGURE 14. LOCATING COMPATIBILITY LANGUAGE FOR PIPING, VALVES, & FITTINGS IN FEDERAL REGULATIONS

AGENCY	C.F.R. CODE	RELEVANT SECTIONS	
EPA	40 C.F.R. 280	Subpart B, 20(b)	Performance standards for new UST systems—Piping
		Subpart B, 21(c)	Piping upgrading requirements
		Subpart C, 32	Compatibility
		Subpart C, 34	Reporting and Recordkeeping
OSHA	29 C.F.R. 1910	106(c)(1) – (7)	Piping, valves, and fittings
	29 C.F.R. 1926	152(j) (1) – (7)	Piping, valves, and fittings

Source: Research Interviews, Literature Review, and Electronic Code of Federal Regulations

FIGURE 15. GENERAL COMPATIBILITY LANGUAGE IN FEDERAL BIOFUELS REGULATIONS

AGENCY	C.F.R. CODE	RELEVANT SECTIONS
EPA	40 C.F.R. 280	(32) Compatibility
	40 C.F.R. 280	(34) Reporting and Recordkeeping

Source: Research Interviews, Literature Review, and Electronic Code of Federal Regulations

FIGURE 16. CORROSION PROTECTION LANGUAGE IN FEDERAL BIOFUELS REGULATIONS

AGENCY	C.F.R. CODE	RELEVANT SECTIONS	
EPA	40 C.F.R. 280	Subpart B, 20	Performance standards for new UST systems
		Subpart B, 21	Upgrading of existing UST systems
		Subpart C, 31	Operation and maintenance of corrosion protection
OSHA	29 C.F.R. 1910	106(c)(5)	Piping, valves, and fittings: Protection against corrosion
	29 C.F.R. 1926	152(i)(1)(vi)	Design and construction of new tanks: Provisions for internal corrosion
		152(i)(3)(iii)	Installation of underground tanks: Corrosion protection
		152(j)(5)	Piping, valves, and fittings: Protection against corrosion

Source: Research Interviews, Literature Review, and Electronic Code of Federal Regulations

CORROSION PROTECTION

The provisions of federal regulations shown in Figure 16 address the concern that storage and dispensing equipment could be subject to corrosion. According to NACE, corrosion is defined as "a naturally occurring phenomenon commonly defined as the deterioration of a material (usually metal) that results from a chemical or electrochemical reaction with its environment.[14]" The provisions specify steps to follow or third-party standards to implement for protecting against corrosion. These provisions apply to standard gasoline and diesel blends, as well as to ethanol-gasoline blends above E10 and biodiesel-diesel blends above B20.

14 https://www.nace.org/resources/general-resources/corrosion-basics

REGULATIONS BY AGENCY

In this section, the third-party compliance standards mentioned in EPA's UST regulations (40 C.F.R. 280) as well as in OSHA's flammable liquids regulations (Sections 1910.106 and 1926.152) will be mapped by the governing agency.

EPA UST REGULATION (40 C.F.R. 280)

The sections of 40 C.F.R. 280 include performance standards for equipment as well as codes of practice for fuel dispensing facility operations. The codes of practice may be used to comply with the regulations. The sections on facility operations that are specifically relevant to issues associated with biofuels storage and dispensing will be covered.

Tanks

Other provisions that are important to general operations of an underground storage tank and dispensing system will not be addressed, but tank owners are required to be in compliance and should review the requirements. The sections of 40 C.F.R. 280 to be reviewed are shown in Figure 17, followed by details pertaining to each identified section.

Piping

See Figure 18.

Installation

"The UST system must be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions."[15] See Figure 19.

15 Readers should be aware that codes of practice are updated periodically. While EPA does not reference a specific version that could be used for compliance, and while it is assumed that the most recent version is applicable, some states have adopted specific versions.

FIGURE 17. 40 C.F.R. 280
Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST)
40 C.F.R. 280

SUBPART	SECTION
B UST Systems: Design, Construction, Installation, and Notification	(20) Performance standards for new UST systems (a) Tanks (b) Piping (c) Spill and overfill prevention equipment (d) Installation (f) Dispenser systems (21) Upgrade of existing UST systems
C General Operating Requirements	(30) Spill and overfill control (31) Operation and maintenance of corrosion protection (32) Compatibility (33) Repairs allowed

Source: Electronic Code of Federal Regulations

FIGURE 18. 40 C.F.R. 280
Subpart B – UST Systems – Design, Construction, Installation and Notification
Section 20(b) – Piping
40 C.F.R. 280.20(b)

SUBPARAGRAPH	ORGANIZATION	REFERENCED STANDARDS	
(1) Non-corrodible material	**UL**	971	Nonmetallic Underground Piping for Flammable Liquids
	UL Canada	S660	Standard for Nonmetallic Underground Piping for Flammable and Combustible Liquids
(2) Steel and cathodically protected	**UL**	Subject 971A	Outline of Investigation for Metallic Underground Fuel Pipe

Source: Electronic Code of Federal Regulations

FIGURE 19. 40 C.F.R. 280
Subpart B – UST Systems – Design, Construction, Installation and Notification
Section 20(d) – Installation
40 C.F.R. 280.20(d)

ORGANIZATION	REFERENCED STANDARDS	
API	Publication 1615	Installation of Underground Petroleum Storage System
PEI	Publication RP100	Recommended Practices for Installation of Underground Liquid Storage Systems
NFPA	30	Flammable and Combustible Liquids Code
	30A	Code for Motor Fuel Dispensing Facilities and Repair Garages

Source: Electronic Code of Federal Regulations

Upgrading of Existing UST Systems

40 C.F.R. 280.21 will be of interest for those wishing to retrofit an existing retail station, instead of purchasing new equipment. It is important to note that many of the provisions, especially in (c) Piping upgrading requirements, actually need to meet the specifications of third-party standards for new systems in Section 280.20. The sections presented here contain direct references to third-party standards or codes of practice. However, readers are advised to read the entire full-text of Section 280.21, including sections both with and without third-party standards, in order to learn the complete requirements for compliance. See Figure 20.

Spill and Overfill Control

This general requirements section includes requirements for owners and operators regarding fuel transfers to tanks. Specifically, the code notes that transfer procedures are defined in certain third-party standards. See Figure 21.

FIGURE 20. 40 C.F.R. 280
Subpart B – UST Systems – Design, Construction, Installation and Notification
Section 21 – Upgrading of existing UST systems
40 C.F.R. 280.21

PARAGRAPH	SUBPARAGRAPH	ORGANIZATION	REFERENCED STANDARDS
(b) Tank upgrading Requirements	(1) Interior lining	API	Recommended Practice 1631 Interior Lining and Periodic Inspection of Underground Storage Tanks
Note to (b) in the C.F.R.: "These historical codes were listed as options for complying with paragraph (b)"		NLPA	Standard 631 Chapter B Future Internal Inspection Requirements for Lined Tanks
		Ken Wilcox Associates	Recommended Practice for Inspecting Buried Lined Steel Tanks Using a Video Camera
(E) Piping upgrading requirements			

Source: Electronic Code of Federal Regulations

FIGURE 21. 40 C.F.R. 280
Subpart C - General Operating Requirements
Section 30 - Spill and overfill control
40 C.F.R. 280.30

ORGANIZATION	STANDARD / NAME	
National Fire Protection Association	Standard 385	Standard for Tank Vehicles for Flammable and Combustible Liquids
American Petroleum Institute	Recommended Practice 1007	Loading and Unloading of MC 306/DOT 406 Cargo Tank Motor Vehicles
	Recommended Practice 1621	Bulk Liquid Stock Control at Retail Outlets

Source: Electronic Code of Federal Regulations

Compatibility

Section 280.32 is a key component of 40 C.F.R. 280 in that it deals in its entirety with compatibility (that being the title and main purpose of the section specifically, and this publication in general). Readers are advised to read the entire text of 280.32 in order to learn more about compatibility requirements. However, in terms specifically of third-party standards within Section 280.32 (which is only one method for demonstrating compatibility of equipment), there is a note at the end of the section recommending an API recommended practice as useful, but not mandating their use. In addition, EPA suggests that PEI RP900, Recommended Practice for the Inspection and Maintenance of UST System, is also a useful resource. See Figure 22.

FIGURE 22. 40 C.F.R. 280
Subpart C - General Operating Requirements
Section 32 - Compatibility
40 C.F.R. 280.32

ORGANIZATION	STANDARD / NAME	
API	Recommended Practice 1626	Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Filling Stations

Source: Electronic Code of Federal Regulations

Section 280.12 Repairs Needed

"Repairs to UST systems must be properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory." See Figure 23.

The terms "repair," "upgrade," and "replace" have specific definitions within the federal UST regulation (40 C.F.R. 280.12):

"Repair means to restore to proper operating condition a tank, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, release detection equipment or other UST system component that has caused a release of product from the UST system or has failed to function properly.

Upgrade means the addition or retrofit of some systems such as cathodic protection, lining, or spill and overfill controls to improve the ability of an underground storage tank system to prevent the release of product.

Replaced means: (1) For a tank—to remove a tank and install another tank. (2) For piping—to remove 50 percent or more of piping and install other piping, excluding connectors, connected to a single tank. For tanks with multiple piping runs, this definition applies independently to each piping run."

FIGURE 23. 40 C.F.R. 280
Subpart C - General Operating Requirements
Section 33 - Repairs Allowed
40 C.F.R. 280.33

ORGANIZATION	STANDARD / NAME	
NFPA	Standard 30	Flammable and Combustible Liquids Code
	Standard 326	Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair
API	Recommended Practice RP 2200	Repairing Crude Oil, Liquified Petroleum Gas, and Product Pipelines
	Recommended Practice RP 1631	Interior Lining and Periodic Inspection of Underground Storage Tanks
National Leak Prevention Association	Standard 631, Chapter A	Entry, Cleaning, Interior Inspection, Repair, and Lining of Underground Storage Tanks
STI	Recommended Practice R012	Recommended Practice for Interstitial Tightness Testing of Existing Underground Double Wall Steel Tanks
Fiberglass Tank and Pipe Institute	Recommended Practice T-95-02	Remanufacturing of Fiberglass Reinforced Plastic T(FRP) Underground Storage Tanks
	Protocol	Field Test Protocol for Testing the Annular Space of Installed Underground Fiberglass Double and Triple-Wall Tanks with Dry Annular Space
PEI	Recommended Practice RP1200	Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities

Source: Electronic Code of Federal Regulations

In the event a tank owner is replacing or upgrading equipment proactively in order to store biofuels, the regulations governing installation should be observed. In addition, tank owners are encouraged to see the *UST System Compatibility with Biofuels.* Environmental Protection Agency - Office of Underground Storage Tanks. November 2015.

OSHA FLAMMABLE LIQUIDS REGULATIONS (29 C.F.R. 1910.106 AND 1926.152)

OSHA's regulation 1910.106 does not specify which third-party standards are acceptable to follow. Rather, it uses the words "approved" and "listed" throughout the regulations. These are defined in the regulations:

29 C.F.R. 1910.106(a) Definitions

35. APPROVED unless otherwise indicated, approved, or listed by a nationally recognized testing laboratory. Refer to 1910.7 for definition of nationally recognized testing laboratory.

36. LISTED see "approved" in 1910.106(a)(35).

Source: Electronic Code of Federal Regulations

29 C.F.R. 1910.7, "Definition and requirements for a nationally recognized testing laboratory" (NRTL), comprises the rules, procedures, and specifications for becoming an NRTL, at least under those regulations governed by OSHA Part 1910. For illustration, Underwriters Laboratories (UL) is an example of one of the most well-known NRTLs. See Figure 24.

Flammable Liquids

Specific references to NRTLs and "approved" or "listed" equipment are found in the following paragraphs of Section 1910.106. in Figure 25.

Flammable Liquids—This section continues the practice of not specifying which exact third-party standards are acceptable to follow and uses the terms "approved" and "listed" in the regulations. Relevant excerpts from the regulation are provided in Figure 26.

FIGURE 24. 29 C.F.R. 1910
Section 7 - Definition and requirements for a nationally recognized testing laboratory
29 C.F.R. 1910.7.

PARAGRAPH	PARAGRAPH TITLE
(a)	Application
(b)	Laboratory requirements
(c)	Test standards
(d)	Alternative test standard
(e)	Implementation
(f)	Fees
APPENDIX A to 1910.7	OSHA Recognition Process for Nationally Recognized Testing Laboratories

Source: Electronic Code of Federal Regulations

FIGURE 25. 29 C.F.R. 1910
Section 106 - Flammable Liquids
29 C.F.R. 1910.106

PARAGRAPH	SUBPARAGRAPH
(b) Tank storage (1) Design and construction of tanks	(i) Materials *(a)* Tanks may be built of materials other than steel for installation underground or if required by the properties of the liquid stored. Tanks located above ground or inside buildings shall be of noncombustible construction *(b)* Tanks built of materials other than steel shall be designed to specifications embodying principles recognized as good engineering design for the material used.
	(vi) Provisions for internal corrosion When tanks are not designed in accordance with the American Petroleum Institute, American Society of Mechanical Engineers, or the Underwriters' Laboratories, Inc.'s, standards, or if corrosion is anticipated beyond that provided for in the design formulas used, additional metal thickness or suitable protective coatings or linings shall be provided to compensate for the corrosion loss expected during the design life of the tank.
(c) Piping, valves, and fittings (1) General	(i) Design The design (including selection of materials), fabrication, assembly, test and inspection of piping systems containing flammable liquids shall be suitable for the expected working pressures and structural stresses. Conformity with the applicable provisions of Pressure Piping, ANSI B31 series and the provisions of this paragraph, shall be considered prima facie evidence of compliance with the foregoing provisions.
(g) Service Stations (3) Dispensing Systems	(i) Inside Location Approved dispensing units may be located inside of buildings. The dispensing area shall be separated from other areas in an approved manner. The dispensing area shall be provided with an approved mechanical or gravity ventilation system. When dispensing units are located below grade, only approved mechanical ventilation shall be used and the entire dispensing area shall be protected by an approved automatic sprinkler system…
	(iv) Dispensing Units *(b)*(1) Only listed devices may be used for dispensing Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 F (37.8 C). No such device may be used if it shows evidence of having been dismantled. *(c)* Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C), shall not be dispensed by pressure from drums, barrels, and similar containers. Approved pumps taking suction through the top of the container or approved self-closing faucets shall be used.
	(vi) Delivery nozzles *(a)* A listed manual or automatic-closing type hose nozzle valve shall be provided on dispensers used for the dispensing of Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 F (37.8 C). *(b)* Manual-closing type valves shall be held open manually during dispensing. Automatic-closing type valves may be used in conjunction with an approved latch-open device.

Source: Electronic Code of Federal Regulations

FIGURE 26. 29 C.F.R. 1926
Section 152 - Flammable Liquids
29 C.F.R. 1926.152

PARAGRAPH	SUBPARAGRAPH
(b) Dispensing Liquids	(3) Flammable liquids shall be drawn from or transferred into vessels, containers, or tanks within a building or outside only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container, or portable tanks, by gravity or pump, through an approved self-closing valve. Transferring by means of air pressure on the container or portable tanks is prohibited. (5) Dispensing devices and nozzles for Category 1, 2, or 3 flammable liquids shall be of an approved type
(g) Service and refueling areas	(1) Flammable liquids shall be stored in approved closed containers, in tanks located underground, or in aboveground portable tanks. (2) The tank trucks shall comply with the requirements covered in the Standard for Tank Vehicles for Flammable and Combustible Liquids, NFPA No. 385-1966. (3) The dispensing hose shall be an approved type. (4) The dispensing nozzle shall be an approved automatic-closing type without a latch-open device. (7) (i) Heating equipment of an approved type may be installed in the lubrication or service area where there is no dispensing or transferring of Category 1, 2, or 3 flammable liquids, provided the bottom of the heating unit is at least 18 inches above the floor and is protected from physical damage. (ii) Heating equipment installed in lubrication or service areas, where Category 1, 2, or 3 flammable liquids are dispensed, shall be of an approved type for garages, and shall be installed at least 8 feet above the floor.
(i) Tank storage	(1) Design and construction of tanks (i) Materials *(a)* Tanks shall be built of steel except as provided in paragraphs (i)(1)(i)(B) through (E) of this section. *(b)* Tanks may be built of materials other than steel for installation underground or if required by the properties of the liquid stored. Tanks located above ground or inside buildings shall be of noncombustible construction. *(c)* Tanks built of materials other than steel shall be designed to specifications embodying principles recognized as good engineering for the material used. *(d)* Unlined concrete tanks may be used for storing flammable liquids having a gravity of 40° API or heavier. Concrete tanks with special lining may be used for other services provided the design is in accordance with sound engineering practice. (vi) Provisions for internal corrosion When tanks are not designed in accordance with the American Petroleum Institute, American Society of Mechanical Engineers, or the Underwriters' Laboratories, Inc.'s standards, or if corrosion is anticipated beyond that provided for in the design formulas used, additional metal thickness or suitable protective coatings or linings shall be provided to compensate for the corrosion loss expected during the design life of the tank.

FIGURE 28 CONTINUED ON PAGE 35

FIGURE 26. CONTINUED FROM PAGE 34

PARAGRAPH	
(i) Tank storage *continued*	(5) Supports, foundations, and anchorage for all tank locations (vi) Flood areas (h) Pipe connections below the allowable liquid level in a tank shall be provided with valves or cocks located as closely as practicable to the tank shell. Such valves and their connections to tanks shall be of steel or other material suitable for use with the liquid being stored. Cast iron shall not be permitted.
(j) Piping, valves, and fittings	(1) General (i) Design The design (including selection of materials) fabrication, assembly, test, and inspection of piping systems containing flammable liquids shall be suitable for the expected working pressures and structural stresses. Conformity with the applicable provisions of Pressure Piping, ANSI B31 series and the provisions of this paragraph, shall be considered prima facie evidence of compliance with the foregoing provisions. (ii) Exceptions This paragraph does not apply to any of the following: (a) Tubing or casing on any oil or gas wells and any piping connected directly thereto. *(b)* Motor vehicle, aircraft, boat, or portable or stationary engines. *(c)* Piping within the scope of any applicable boiler and pressures vessel code. (2) Material for piping, valves, and fittings (i) Required materials Materials for piping, valves, or fittings shall be steel, nodular iron, or malleable iron, except as provided in paragraphs (j)(2) (ii), (iii), and (iv) of this section. (ii) Exceptions Materials other than steel, nodular iron, or malleable iron may be used underground, or if required by the properties of the flammable liquid handled. Material other than steel, nodular iron, or malleable iron shall be designed to specifications embodying principles recognized as good engineering practices for the materials used.

Source: Electronic Code of Federal Regulations

Incorporation by Reference

In general, in each the above excerpts, language such as "approved," "suitable," "applicable," "if required by the properties of," and so forth, is used but not defined. Unlike OSHA Section 1910.106, Section 1926.152 contains no separate "Definitions" section to appeal to. However, there is a Section, 1926.6, "Incorporation by reference," which may yield some hints as to which are the relevant third-party standards. The opening three paragraphs of Section 1926.6, quoted in full in Figure 27, set forth the way in which outside standards are incorporated by force of law into the entire body of 29 C.F.R. 1926.

The standards "incorporated by reference" in paragraphs (g) through (ff), as mentioned in paragraph (b), do contain six standards that refer specifically to being mandated in 1926.152, while also containing many other standards pertaining separately to other sections of 29 C.F.R. 1926. The standards pertinent to Section 1926.152 are listed in paragraphs (l) and (y).

However, the paragraphs of Section 1926.152 that are listed in the "incorporation by reference" section do not directly match up to all of the paragraphs of 1926.152 which contain ambiguous language, and further do not map to sub-paragraphs within those paragraphs.

FIGURE 27. 29 C.F.R. 1926
Section 6 - Incorporation by reference
29 C.F.R. 1926.6

SECTION 1926.6

(a) The standards of agencies of the U.S. Government, and organizations which are not agencies of the U.S. Government which are incorporated by reference in this part, have the same force and effect as other standards in this part. Only the mandatory provisions (i.e., provisions containing the word "shall" or other mandatory language) of standards incorporated by reference are adopted as standards under the Occupational Safety and Health Act.

(b) The materials listed in paragraphs (g) through (ff) of this section are incorporated by reference in the corresponding sections noted as they exist on the date of the approval, and a notice of any change in these materials will be published in the FEDERAL REGISTER. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 C.F.R. part 51.

(c) Copies of standards listed in this section and issued by private standards organizations are available for purchase from the issuing organizations at the addresses or through the other contact information listed below for these private standards organizations. In addition, these standards are available for inspection at the National Archives and Records Administration (NARA).

For information on the availability of these standards at NARA, telephone: 202-741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Also, the standards are available for inspection at any Regional Office of the Occupational Safety and Health Administration (OSHA), or at the OSHA Docket Office, U.S. Department of Labor, 200 Constitution Avenue, NW., Room N-2625, Washington, DC 20210; telephone: 202-693-2350 (TTY number: 877-889-5627).

To obtain copies of the standards which have been incorporated by reference, please refer to the Code of Federal Regulations for instructions.

Source: Electronic Code of Federal Regulations

Tank Storage

There is one area of Section 1926.152 where very specific third-party standards are offered as an option for compliance. Section (i), Tank storage, paragraph (7) pertains to testing of tanks during construction and installation.

OSHA 29 C.F.R. 1926.152(i) Tank storage (7) Testing (i) General:

> (i) General. All tanks, whether shop built or field erected, shall be strength tested before they are placed in service in accordance with the applicable paragraphs of the code under which they were built. The American Society of Mechanical Engineers (ASME) code stamp, American Petroleum Institute (API) monogram, or the label of the Underwriter Laboratories, Inc., on a tank shall be evidence of compliance with this strength test. Tanks not marked in accordance with the above codes shall be strength tested before they are placed in service in accordance with good engineering principles and reference shall be made to the sections on testing in the codes listed in paragraphs (i)(1)(iii)(A), (iv)(B), or (v)(B) of this section.

Source: Electronic Code of Federal Regulations

It appears from reading (i) General that an ASME code stamp, API monogram, or UL label before the tank's placement into service can be sufficient evidence of compliance with this paragraph. However, in the absence of such a code stamp, strength testing is required "in accordance with good engineering principles and reference shall be made to the sections on testing in the codes listed in paragraphs (i)(1)(iii)(A) Figure 28, (iv)(B) Figure 29, or (v)(B) Figure 30 of this section."

FIGURE 28. 29 C.F.R. 1926
Section 152(i)(1)(iii) - Atmospheric Tanks
29 C.F.R. 1926.152(i)(1)(iii)(A)

ORGANIZATION	STANDARD / NAME	
UL	142	Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids
	58	Standard for Steel Underground Tanks for Flammable and Combustible Liquids
	80	Standard for Steel Inside Tanks for Oil-Burner Fuel
API	12A	Specification for Oil Storage Tanks with Riveted Shells
	650	Welded Steel Tanks for Oil Storage
API*	12B	Specification for Bolted Production Tanks
	12D	Specification for Large Welded Production Tanks
	12F	Specification for Small Welded Production Tanks

**"Tanks built in accordance with these standards shall be used only as production tanks for storage of crude petroleum in oil-producing areas."*

Source: Electronic Code of Federal Regulations

FIGURE 29. 29 C.F.R. 1926
Section 152(i)(1)(iv) - Low Pressure Tanks
29 C.F.R. 1926.152(i)(1)(iv)

ORGANIZATION	STANDARD / NAME	
API	620	Recommended Rules for the Design and Construction of Large, Welded, Low-Pressure Storage Tanks
ASME		Code for Unfired Pressure Vessels, Section VII of the ASME Boiler and Pressure Vessels Code, 1968

Source: Electronic Code of Federal Regulations

FIGURE 30 29 C.F.R. 1926
Section 152(i)(1)(v) - Pressure Vessels
29 C.F.R. 1926.152(i)(1)(v)

ORGANIZATION	STANDARD / NAME	
ASME		Code for Unfired Pressure Vessels, Section VII of the ASME Boiler and Pressure Vessels Code, 1968

Source: Electronic Code of Federal Regulations

Liability and Penalties in Federal Regulations

Determining liability and penalties is less than straightforward for violations of the federal regulations described in this study. This chapter will focus on what the federal regulations described in this study say about liabilities and penalty, by pointing out the applicable plain-text language in each regulation.

This will not be intended as a comprehensive legal review. For specific legal questions, readers are advised to look at the full-text of these regulations as well as consult their legal counsel.

Figure 31 summarizes where penalty language can be found in each of the respective regulations reviewed in this research study.

FIGURE 31. LOCATION OF PENALTY LANGUAGE IN FEDERAL REGULATIONS

REGULATION	PENALTY CLAUSES	
EPA E15 Labeling and Sale (40 C.F.R. 80)	80.5	Penalties
	80.28	Liability for violations of gasoline volatility controls and prohibitions
	80.1506	What penalties apply under this subpart?
FTC Motor Fuel Labeling (16 C.F.R. 306)	306.1	What this rule does
OSHA 1910.106	29 C.F.R. 1903	Inspections Citations and Proposed Penalties
OSHA 1926.152	29 C.F.R. 1903	Inspections Citations and Proposed Penalties

Source: Electronic Code of Federal Regulations

It should be noted that the "Penalty Clauses" are complex and seem to contain wide room for discretion when they are read in detail. This research study will simply document the location of these penalty clauses and quote their plain-text; it will not be possible to specify predictable schedules of penalties deriving from the language in the regulations.

Depending on the statute and regulation in question, liability for non-compliance can result in a diverse range of penalties (from no enforcement action through the assessment of maximum allowable penalties) as the federal agencies overseeing these regulations have considerable enforcement discretion. In addition, some regulations provide for private rights of action through which concerned entities may pursue enforcement action and assessment of penalties in the absence of agency action. Thus, businesses utilizing this report as a resource are reminded that not only is this report not intended to be, nor presented to represent, a comprehensive listing or assessment of relevant regulations pertaining to the sale of liquid fuels, it also does not represent legal guidance or advice. Businesses are encouraged to consult independent legal counsel with questions.

PENALTY AND LIABILITY LANGUAGE IN EPA UST REGULATION (40 C.F.R. 280)

IN GENERAL

It appears that the EPA UST regulation, 40 C.F.R. 280, contains very complex provisions with respect to penalties and liability. Full examination of penalty and liability in 40 C.F.R. 280 would go beyond the scope of this report, because throughout 40 C.F.R. 280, references abound to different ways in which costly remediation clauses can be triggered in other federal regulations such as the Clean Air Act (CAA) of 1970, Resource Conservation Recovery Act (RCRA) of 1976, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), or the Superfund Amendments and Reauthorization Act (SARA) of 1986, an update of CERCLA. Readers are encouraged to review 42 U.S.C. 6991e, which gives EPA the authority to assess civil penalties for violation of UST requirements. EPA is authorized to take enforcement actions and assess penalties against violators, with civil penalties discussed specifically at 42 U.S.C. 6991e(a)(3) and 6991e(d).

FINANCIAL RESPONSIBILITY

In addition, Subpart H of 40 C.F.R. 280, "Financial Responsibility," details very intricate schemes of self-insurance of equipment by retail station

owners and operators. In addition to the inherent length and complexity of Subpart H, it is not even uniformly followed by all jurisdictions. 40 C.F.R. 281, a companion regulation to 40 C.F.R. 280, allows states to create their own self-insurance programs that are equal to or more stringent than 40 C.F.R. 280, Subpart H.

In accordance with the baseline approach of this research study, the contents of 40 C.F.R. 280, Subpart H, "Financial Responsibility," will be shown in Figure 32 so as to give a sense of where to look for further resources on liability and penalty for USTs, and so as to give a sense of the federal baseline.

FIGURE 32. 40 C.F.R. 280
Subpart H - Financial Responsibility
40 C.F.R. 280.90 Subpart H.

SECTION	NAME
280.90	Applicability
280.91	Compliance Dates
280.92	Definition of Terms
280.93	Amount and scope of required financial responsibility
280.94	Allowable mechanisms and combinations of mechanisms
280.95	Financial test of self-insurance
280.96	Guarantee
280.97	Insurance and risk retention group coverage
280.98	Surety bond
280.99	Letter of credit
280.100	Use of state-required mechanism
280.101	State fund or other state assurance
280.102	Trust fund
280.103	Standby trust fund
280.104	Local government bond rating test
280.105	Local government financial test
280.106	Local government guarantee
280.107	Local government fund
280.108	Substitution of financial assurance mechanisms by owner or operator
280.109	Cancellation or nonrenewal by a provider of financial assurance
280.110	Reporting by owner or operator
280.111	Recordkeeping
280.112	Drawing on financial assurance mechanisms
280.113	Release from the requirements
280.114	Bankruptcy or other incapacity of owner or operator or provider of financial assurance
280.115	Replenishment of guarantees, letters of credit, or surety bonds

Source: Electronic Code of Federal Regulations

DELIVERY PROHIBITION AND OTHER STATE MECHANISMS

When states are approved to administer their own UST program, they are required to implement certain remedy options to enforce compliance. These requirements are found at 40 C.F.R. 281.41. A central provision contained in UST reforms enacted as part of the Energy Policy Act of 2005 was to empower EPA and approved state programs to prohibit the delivery motor fuel into USTs that were in violation of applicable regulations. While not a directly imposed financial penalty on the tank owner, this authority has a very significant impact on an owner's operations.

The entire section is provided below. The delivery prohibition provision is contained in Section 281.41(a)(4):

(a) Any state administering a program must have the authority to implement the following remedies for violations of state program requirements:

1. To restrain immediately and effectively any person by order or by suit in state court from engaging in any unauthorized activity that is endangering or causing damage to public health or the environment;

2. To sue in courts of competent jurisdiction to enjoin any threatened or continuing violation of any program requirement;

3. To assess or sue to recover in court civil penalties as follows:

(i) Civil penalties for failure to notify or for submitting false information pursuant to tank notification requirements must be capable of being assessed up to $5,000 or more per violation.

(ii) Civil penalties for failure to comply with any state requirements or standards for existing or new tank systems must be capable of being assessed for each instance of violation, up to $5,000 or more for each tank for each day of violation. If the violation is continuous, civil penalties shall be capable of being assessed up to $5,000 or more for each day of violation.

4. To prohibit the delivery, deposit, or acceptance of a regulated substance into an underground storage tank identified by the implementing agency to be ineligible for such delivery, deposit, or acceptance in accordance with Section 9012 of the Solid Waste Disposal Act.

(b) The burden of proof and degree of knowledge or intent required under state law for establishing violations under paragraph (a)(3) of this section, must be no greater than the burden of proof or degree of knowledge or intent that EPA must provide when it brings an action under Subtitle I of the Solid Waste Disposal Act.

(c) A civil penalty assessed, sought, or agreed upon by the implementing agency(ies) under paragraph (a)(3) of this section must be appropriate to the violation.

PENALTY AND LIABILITY LANGUAGE IN LABELING REQUIREMENTS (FTC'S 16 C.F.R. 306, AND EPA'S 40 C.F.R. 80)

For the other two regulations examined in this study—the labeling requirements at the pump contained in 40 C.F.R. 80.1501 (E15) and 16 C.F.R. 306 (all other liquid motor fuels)—there are provisions within the body of the regulations that deal directly and specifically with penalties and liability.

FTC LABELING REQUIREMENTS:

16 C.F.R. 306.1, "What This Rule Does," and 306.2, "Who Is Covered"

Sections 1 and 2 of 16 C.F.R. 306 contain language directly related to penalties and liability. They are quoted below.

> **Section 306.1 What this rule does**
> 306.1 This rule deals with the certification and posting of automotive fuel ratings in or affecting commerce as "commerce" is defined in the Federal Trade Commission Act, 15 U.S.C. 41 et. seq. It applies to persons, partnerships, and corporations. If you are covered by this regulation, breaking any of its rules is an unfair or deceptive act or practice under Section 5 of that act. You can be fined up to $10,000 (plus an adjustment for inflation, under §1.98 of this chapter) each time you break a rule.

> **Section 306.2 Who is covered**
> 306.2 You are covered by this rule if you are a refiner, importer, producer, distributor, or retailer of automotive fuel.

In general, the body of 16 C.F.R. 306 is divided into three major sections – "Duties of Refiners, Importers, and Producers" (§306.5 – 7); "Duties of Distributors" (§306.8 – 9); and "Duties of Retailers" (§306.10 – 11). A paragraph in "Duties of Retailers" further makes it clear what retailers are liable for: (16 C.F.R. 306.10)

> **Section 306.10 Automotive fuel rating posting**
> (a) If you are a retailer, you must post the automotive fuel rating of all automotive fuel you sell to consumers. You must do this by putting at least one label on each face of each dispenser through which you sell automotive fuel. If you are selling two or more kinds of automotive fuel with different automotive fuel ratings from a single dispenser, you must put separate labels for each kind of automotive fuel on each face of the dispenser. Provided, however, that you do not need to post the automotive fuel rating of a mixture of gasoline and ethanol containing more than 10 but not more than 15 percent ethanol if the face of the dispenser is labeled in accordance with 40 C.F.R. 80.1501.

While it is clear from Section 306.10 that retailers have specific duties and are liable for not performing those duties, it is in fact extremely unclear what penalties they would face. The penalty rule, in Section 306.1, "What this rule does," appears to be written so as to leave maximum latitude for discretionary application of penalties during an enforcement action.

This room for discretion appears despite the fact that the rule seems quite specific, at first glance, in terms of citing a penalty of "up to $10,000…each time you break a rule." The open-ended aspect here is that the phrases "each time" and "rule" are not defined within the language of the regulation.

EPA LABELING REQUIREMENTS FOR E15 (40 C.F.R. 80.1501)

The regulations are quite clear on the assessment of liability for violation of 40 C.F.R. 80.1501: (40 C.F.R. 80.1505)

Who is liable for violations of this subpart?

(a) Persons liable. Any person who violates 80.1504(a) through (i) is liable for the violation. In addition, when the gasoline contained in any storage tank at any facility owned, leased, operated, controlled or supervised by any gasoline refiner, gasoline importer, oxygenate blender, carrier, distributor, reseller, retailer, or wholesale purchaser-consumer is found in violation of the prohibitions described in 80.1504(a), and (c) through (i), the following persons shall be deemed in violation:

1. Each gasoline refiner, gasoline importer, oxygenate blender, carrier, distributor, reseller, retailer, or wholesale purchaser-consumer who owns, leases, operates, controls or supervises the facility where the violation is found.

2. Each gasoline refiner or gasoline importer whose corporate, trade, or brand name, or whose marketing subsidiary's corporate, trade, or brand name, appears at the facility where the violation is found.

3. Each gasoline refiner, gasoline importer, oxygenate blender, distributor, and reseller who manufactured, imported, sold, offered for sale, dispensed, supplied, offered for supply, stored, transported, or caused the transportation of any gasoline which is in the storage tank containing gasoline found to be in violation.

4. Each carrier who dispensed, supplied, stored, or transported any gasoline which is in the storage tank containing gasoline found to be in violation, provided that EPA demonstrates, by reasonably specific showings using direct or circumstantial evidence, that the carrier caused the violation.

(b) For label violations under 80.1504(b), only the wholesale purchaser-consumer or retailer and the branded gasoline refiner or branded gasoline importer, if any, shall be liable.

Section 80.1505 contains two additional clauses, (c) and (d), which are more standard and straightforward, and which are quoted below. These address the attribution of liability in case of a joint venture and in case of a parent corporation and its subsidiaries.

(c) Each partner to a joint venture, or each owner of a facility owned by two or more owners, is jointly and severally liable for any violation of this subpart that occurs at the joint venture facility or a facility that is owned by the joint owners, or a facility that is committed by the joint venture operation or any of the joint owners of the facility.

(d) Any parent corporation is liable for any violations of this subpart that are committed by any of its solely-owned subsidiaries.

Source: Electronic Code of Federal Regulations

PENALTIES THAT MAY BE ASSESSED

To determine what penalties may be assessed for violation of the labeling requirements contained with the regulations, the provisions provide for general assessment of a penalty fee plus a calculation to offset any "economic benefit" accrued from the violation. (40 C.F.R. 80.5)

Section 80.5 Penalties

Any person who violates these regulations shall be liable to the United States for a civil penalty of not more than the sum of $25,000 for every day of such violation and the amount of economic benefit or savings resulting from the violation. Any violation with respect to a regulation proscribed under Section 211(c), (k), (l), or (m) of the Act which establishes a regulatory standard based upon

a multi-day averaging period shall constitute a separate day of violation for each and every day in the averaging period. Civil penalties shall be assessed in accordance with Section 205(b) and (c) of the Act.
Source: Electronic Code of Federal Regulations

Furthermore, violations may be subject to penalties provided in 40 C.F.R. 80.1506. (40 C.F.R. 80.1506)

Section 1506. What Penalties apply under this subpart? (a) Any person under 80.1505 who is liable for a violation of 80.1504 is subject to an administrative or civil penalty, as specified in Sections 205 and 211(c) of the Clean Air Act, for every day of each such violation and the amount of economic benefit or savings resulting from the violation.

(b) 1. Any violation of any requirement that pertains to the ethanol content of gasoline shall constitute a separate day of violation for each and every day such gasoline giving rise to such violations remains any place in the gasoline distribution system, beginning on the day that the gasoline that violates such requirement is produced or imported and distributed and/or offered for sale, and ending on the last day that any such gasoline is offered for sale or is dispensed to any ultimate consumer for use in any motor vehicle, unless the violation is corrected by altering the properties and characteristics of the gasoline giving rise to the violations and any mixture of gasolines that contains any of the gasoline giving rise to the violations such that the gasoline or mixture of gasolines has the properties and characteristics that would have existed if the gasoline giving rise to the violations had been produced or imported in compliance with all requirements that pertain to the ethanol content of gasoline.

(c) Any violation of any affirmative requirement or prohibition not included in paragraph (b) of this section shall constitute a separate day of violation for each and every day such affirmative requirement is not properly accomplished, and/or for each and every day the prohibited activity continues. For those violations that may be ongoing each and every day the prohibited activity continues shall constitute a separate day of violation.
Source: Electronic Code of Federal Regulations

PENALTY AND LIABILITY LANGUAGE IN EPA FUEL SALE REQUIREMENTS (40 C.F.R. 80.28)

Regarding the gasoline volatility controls and prohibitions discussed in 40 C.F.R. 80.27, 40 C.F.R. 80.28(e)-(f) holds retailers liable for violating these provisions, including selling higher-content ethanol blends during volatility control periods. Specifically, the statute holds liable branded and unbranded distributor facilities, reseller facilities, ethanol blending plants, retail outlets, and wholesale purchaser-consumer facilities that do not adhere to the statutory requirements. These entities may limit or otherwise avoid liability, however, if they can provide certain evidence releasing them from responsibility.

Section 80.28(g), related to defenses under the section, reads:

5. In any case in which a retailer or wholesale purchaser-consumer would be in violation under paragraphs (e)(1) or (f)(1) of this section, the retailer or wholesale purchaser-consumer shall not be deemed in violation if he can demonstrate that the violation was not caused by him or his employee or agent.
Source: Electronic Code of Federal Regulations

SIMULTANEOUS TORT AND REGULATORY LIABILITY FOR SAME EVENT

In some situations, an entity in violation of certain regulations may be subject to simultaneous tort and regulatory liability. For example, consider the federal regulation for E15 labeling, 40 C.F.R. 80, "Fuels and Fuel Additives," Subpart N, 1504(a)(1). The contents of this regulation are quite complex, but one particular set of sub-clauses seems as if it may trigger a situation of simultaneous liability in certain circumstances.

40 C.F.R. 80.1504(a)(1) reads:

> No person shall—
>
> (a) 1. Sell, introduce, cause, or permit the sale or introduction of gasoline containing greater than 10 volume percent ethanol (i.e., greater than E10) into any model year 2000 or older light-duty gasoline motor vehicle, any heavy-duty gasoline motor vehicle or engine, any highway or off-highway motorcycle, or any gasoline-powered nonroad engines, vehicles, or equipment.

Source: Electronic Code of Federal Regulations

This clause pertains especially to a situation where an E15 retailer has posted all required labeling of E15, yet a customer nevertheless dispenses E15 into a pre-2001 model-year vehicle. In this circumstance, it seems as if the station owner may be liable from both a regulatory and a civil tort perspective.

PENALTY AND LIABILITY IN OSHA 1910.106 AND 1926.152: CONSULT OSHA 29 C.F.R. 1903

The OSHA regulations for flammable liquids, 29 C.F.R. 1910.106 and 29 C.F.R. 1926.152, themselves do not contain any language at all on violations, liability, or penalties. Most if not all of the OSHA requirements have been incorporated within fire codes and are enforced in that manner. However, an industry participant specified during a research interview that another OSHA regulation, 29 C.F.R. 1903, contains violation, penalty and liability language that can be applied to Sections 1910.106 and 1926.152.

It should be noted that 29 C.F.R. 1903 appears to be a general OSHA regulation that pertains to penalty and liabilities for all OSHA regulations, under an umbrella assignment. There is no specific reference to the specific Flammable Liquids OSHA regulations (Sections 1910.106 and 1926.152) that relate to fuel dispensing facilities.

The contents of 29 C.F.R. 1903 are summarized in Figure 36. Only 1903.15 is broken out into further detail, because it directly lays out penalties and gives specific ranges of dollar amounts. The rest of the sections of 29 C.F.R. 1903 contain complex stipulations related to jurisdiction, inspections, complaints, certifications, and other investigative, procedural, and administrative matters, all of which are beyond the scope of this research study.

FIGURE 36. 29 C.F.R. 1903
Inspections, Citations and Proposed Penalties
29 C.F.R. 1903

SECTION	SECTION TITLE
1903.1	Purpose and Scope
1903.2	Posting of notice; availability of the Act, regulations and applicable standards
1903.3	Authority for inspection
1903.4	Objection to inspection
1903.5	Entry not a waiver
1903.6	Advance notice of inspections
1903.7	Conduct of inspections
1903.8	Representatives of employers and employees
1903.9	Trade secrets
1903.10	Consultation with employees
1903.11	Complaints by employees
1903.12	Inspection not warranted; informal review
1903.13	Imminent danger
1903.14	Citations; notices of de minimis violations; policy regarding employee rescue activities
1903.15*	Proposed penalties*
1903.16	Posting of citations
1903.17	Employer and employee contests before the Review Commission
1903.18	Failure to correct a violation for which a citation has been issued
1903.19	Abatement verification
1903.20	Informal conferences
1903.21	State administration
1903.22	Definitions

**The section "Proposed penalties," 1903.15, actually refers to penalty provisions in clause (d), "Adjusted civil monetary penalties."*
Source: Electronic Code of Federal Regulations

Adjusted Civil Monetary Penalties
(29 C.F.R. 1903.15(d))

(d) The adjusted civil penalties for penalties proposed on or after January 2, 2018are as follows:

1. Willful violation. The penalty per willful violation under section 17(a) of the Act, 29 U.S.C. 666(a), shall not be less than $9,239 and shall not exceed $129,336.

2.Repeated violation. The penalty per repeated violation under Section 17(a) of the Act, 29 U.S.C. 666(a), shall not exceed $129,336.

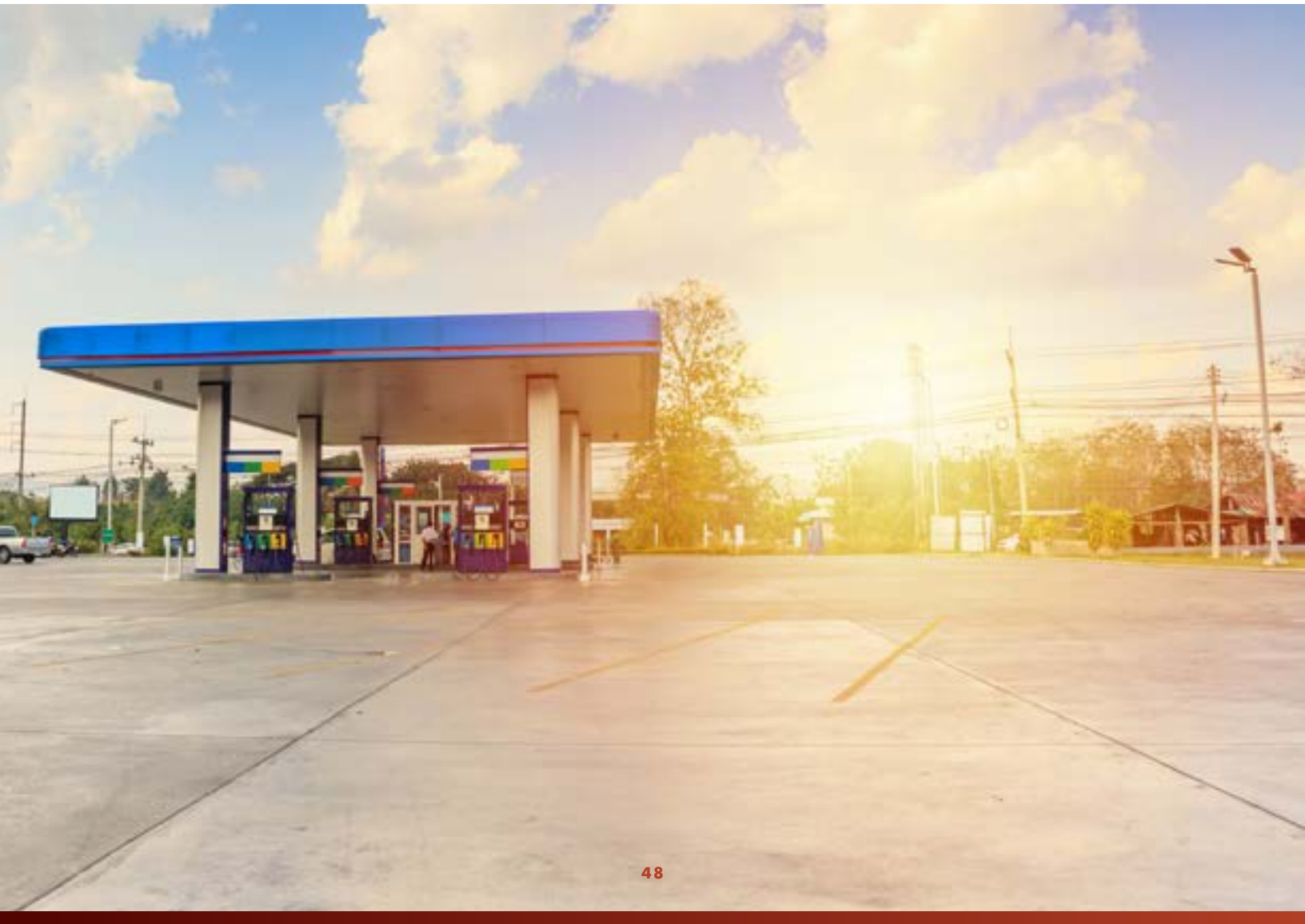
3.Serious violation. The penalty for a serious violation under Section 17(b) of the Act, 29 U.S.C. 666(b), shall not exceed $12,934.

4.Other-than-serious violation. The penalty for an other-than-serious violation under Section 17(c) of the Act, 29 U.S.C. 666(c), shall not exceed $12,934.

5.Failure to correct violation. The penalty for a failure to correct a violation under Section 17(d) of the Act, 29 U.S.C. 666(d), shall not exceed $12,934per day.

6.Posting requirement violation. The penalty for a posting requirement violation under Section 17(i) of the Act, 29 U.S.C. 666(i), shall not exceed $12,934.

Source: Electronic Code of Federal Regulations



Conclusion

This research study has reviewed the regulatory environment for fuel dispensing facilities selling concentrations of ethanol above E10 and biodiesel above B20, providing a reading guide and an information resource to those interested in offering these fuels.

It is important to remind the reader that the entire UST system must be compatible with any fuel being stored, but that the additional regulations related to the storage of biofuels must be followed closely to ensure an owner has compatible equipment to meet the requirement. For example, in addition to tanks, pipes and other ancillary equipment, UST components such as pipe dope and sealants must also be compatible with the fuel being stored.

As context, there is the recognition that the stipulations presented in this study apply to all liquid motor fuels sold at retail. This includes, but is not limited to, the biofuel blends that have been the focus of this study. This means that retailers can draw upon decades of experience with other motor fuels to inform their understanding of compliance issues for new grades, at least insofar as applies to general installation, construction, and station operations.

The compliance issues outlined in this study reflect a periodic infrastructure adjustment of the type that is common in many technology-based industries when a new technological standard is introduced. Station equipment that has been designed to prevent negative impact of properties of traditional motor fuel blends, such as gasoline and diesel, must now be reconfigured to minimize any potential negative impact that comes from blending biofuels with traditional motor fuels. There is the necessity of adjusting station equipment to match the unique biochemical profile of ethanol above E10 and biodiesel above B20.

As such, this study has been constructed as a reading guide for those trying to better understand the compliance requirements and liability risk for the new fuel grades. The key information sources for this paper have been federal regulations, because these set a common baseline of compliance requirements, before being modified for more stringency in some state and local jurisdictions.

The overall idea of this study has been to “ask the right questions,” point to the right resources, and provide knowledge on matters such as:

1. **The general contents and organization of relevant federal regulations**
2. **Third-party performance or testing standards applicable to the new fuel grades (ethanol above E10 and biodiesel above B20)**
3. **Penalty and liability language in these federal regulations**

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The Fuels Institute, founded by NACS in 2013, is a 501(c)(4) non-profit research-oriented think tank dedicated to evaluating the market issues related to vehicles and the fuels that power them. By bringing together diverse stakeholders of the transportation and fuels markets, the Institute helps to identify opportunities and challenges associated with new technologies and to facilitate industry coordination to help ensure that consumers derive the greatest benefit.

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Acknowledgement

The Fuels Institute thanks Hart Schwartz, who served as research coordinator for the organization from June 2013 through December 2014 and then as an independent contractor, for his initial research into the federal regulations governing biofuels. His contribution was essential to the development of this publication.

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FUNDING PROVIDED BY

NACS Foundation

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