

**Voluntary Report** – Voluntary - Public Distribution

**Date:** May 13, 2021

**Report Number:** JA2021-0072

**Report Name:** Industrial Ethanol Market in Japan

**Country:** Japan

**Post:** Tokyo

**Report Category:** Biofuels

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**Report Highlights:**

Japan's Ministry of Economy, Trade and Industry strictly monitors the production, importation and sales of ethanol exceeding 90 percent of alcohol content by volume. The consumption of industrial ethanol (non-fuel, non-beverage) was 484 million liters in Japanese fiscal year 2019, the latest available data. This report details trade flows of industrial ethanol to Japan. The United States has a limited market share in Japan's industrial ethanol market.

## Definition and Applications

Ethanol or ethyl alcohol is a product of yeast-based sugar fermentation (i.e., bioethanol) or ethylene hydration of petrochemical feed stocks (i.e., synthetic ethanol). Ethanol trade is captured in the [World Customs Organization's](#) Harmonized System (HS) under 2207. HS 2207 is defined as “undenatured ethyl alcohol of an alcoholic strength by volume of 80 percent vol or higher; ethyl alcohol and other spirits denatured, of any strength.” which excludes spirits, liqueurs and other similar alcoholic beverages, and products made from ethanol<sup>1</sup>. The HS code classification does not distinguish between bioethanol and synthetic ethanol.

Japan's ethanol imports primarily consist of undenatured ethanol exceeding 90 percent of alcoholic strength by volume (HS 2207.10, see Appendix I for ethanol import HS codes used by Japan Customs). Due to a high tariff rate (27.2 percent) on denatured ethanol and substantial food-related ethanol consumption, Japan's imports of denatured ethanol (HS 2207.20) are negligible. Japan also imposes a duty<sup>2</sup> of 38.1 yen (\$0.35<sup>3</sup>) per liter on undenatured ethanol imports containing between 80 to 90 percent of alcohol by volume (HS 2207.10.290) so such imports are minimal. On the other hand, undenatured ethanol exceeding 90 percent of alcoholic strength by volume can be imported duty-free into Japan (Appendix I).

Under the [Ethanol Business Act](#), the Ministry of Economy, Trade and Industry (METI) strictly monitors production, importation and sales of all ethanol exceeding 90 percent of alcohol content by volume. This report focuses exclusively on ethanol subject to the Ethanol Business Act.

Japan utilizes ethanol exceeding 90 percent of alcoholic strength in three distinct ways: (i) biofuel<sup>4</sup> (bioethanol for ethyl tert-butyl ether (ETBE) production is imported to Japan as HS 2207.10.191 (see [2020 Japan Biofuels Annual](#))), (ii) distilling alcohol for alcoholic beverage production<sup>5</sup> (primarily imported under HS 2207.10.130), and (iii) other uses. The last category, collectively termed “industrial ethanol” in this report encompasses solvent, chemical production, disinfectants, food manufacturing, pharmaceutical and other applications.

## Historical and Current Regulatory Environment for Ethanol

In 1937, the Alcohol Monopoly Law designated Japan's Ministry of Finance (MOF) Monopoly Bureau as Japan's sole ethanol distributor. In 1942, present-day METI took over that function. The 2001 enactment of the [Ethanol Business Act](#) did away with the government's monopoly on ethanol distribution in Japan. After a five-year transition, METI's ethanol trading office became the largely government-owned Japan Alcohol Industry Group, where Japan Alcohol Corporation (J.Alco) represents distilling operations.

Alcoholic beverages are subject to the [Liquor Tax Law](#) administered by MOF's National Tax Agency (NTA). To prevent liquor tax evasion, METI tightly regulates the distribution of ethanol exceeding 90 percent of alcoholic strength by volume and closely monitors transactions until final ethanol application can be confirmed under the Ethanol Business Act. On the other hand, ethanol with alcoholic strength below 90 percent by volume is subject

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<sup>1</sup> For example, disinfectants (HS 3808.40), ETBE (HS 2909.19.010) and spirituous beverages (HS 2208.90) are outside of the scope of this report and HS 2207.

<sup>2</sup> On May 1, 2020, in response to the COVID-19-related shortage of ethanol, the National Tax Agency exempted 80-90% ethanol from the mandatory tax, provided the ethanol is used in the production of disinfectants.

<sup>3</sup> This report uses exchange rate of USD \$1 = 108 yen.

<sup>4</sup> Since 2010, Japanese petroleum refineries have blended gasoline with ethyl tert-butyl ether (ETBE). Currently, over 90 percent of ETBE consumed by Japan is imported as ETBE. The remainder is produced locally from imported Brazilian sugarcane-based ethanol ([Japan Biofuels Annual](#)). Fuel use of ethanol is outside of the scope of this report.

<sup>5</sup> Some importers produce inexpensive alcoholic beverages from imported ethanol, such as ready to drink pre-mixed spirits and cocktails, and lower-taxed beer-like beverages (see [JA2018-3016](#)).

to liquor tax regardless of end application<sup>6</sup>. Since 2006, in addition to J.Alco, METI has allowed pre-approved companies to import and process ethanol. All of these companies are required to report all ethanol transactions to METI. Although J.Alco remains the largest industrial ethanol importer, several liquor companies (e.g., Kirin, OENON, Takara) have established themselves as important players in the industrial ethanol market in Japan. Still, importers of ethanol exceeding 90 percent of alcoholic strength continue to rely on the distribution channels established by METI during the decades of market monopolization.

## **Ethanol Market Overview**

### Supply

#### *Domestic Production*

Since the 2001 market liberalization, METI has not published domestic ethanol production statistics. In Japanese fiscal year (JFY, April to March) 2000, Japan produced 7 million liters (ML) of bioethanol from domestic and imported molasses, and 101 ML of synthetic ethanol. For nearly 80 years, METI oversaw bioethanol production at Izumi City in Kagoshima Prefecture. Domestically produced bioethanol is primarily used in organic cosmetic products and food manufacturing.

Japan Synthetic Alcohol Co.<sup>7</sup> and Mitsubishi Chemical produce synthetic ethanol in Japan.

#### *Imports*

Japan heavily depends on ethanol imports, which have steadily grown since the 2001 market liberalization (Figure 1). Although initially Asian countries were Japan's primary ethanol suppliers, since 2004, ethanol exports from Brazil, Pakistan and the United States have dominated the Japanese market. Brazilian and Pakistani ethanol is sugarcane-based, while U.S. ethanol is derived from corn. In 2020, Japan imported approximately 854 ML of ethanol exceeding 90 percent of alcoholic strength, predominantly from Brazil (676 ML or 79.1 percent of the market), United States (114 ML, representing 13.4 percent of the market) and Pakistan (24.5 ML or 2.9 percent). Japan's ethanol imports by volume grew 19.5 percent in response to the high COVID-19-related demand for sanitizing products.

As of 2020, based on end use and distribution channels, Japan Customs categorizes industrial ethanol (non-fuel, non-beverage) imports as: (i) "crude" ethanol (HS 2207.10.121), (ii) for ethyl acetate production (HS 2207.10.122), (iii) for ethylamine production (HS 2207.10.123), and (iv) other (HS 2207.10.199). For Japan's tariffs on ethanol imports, please see Appendix I.

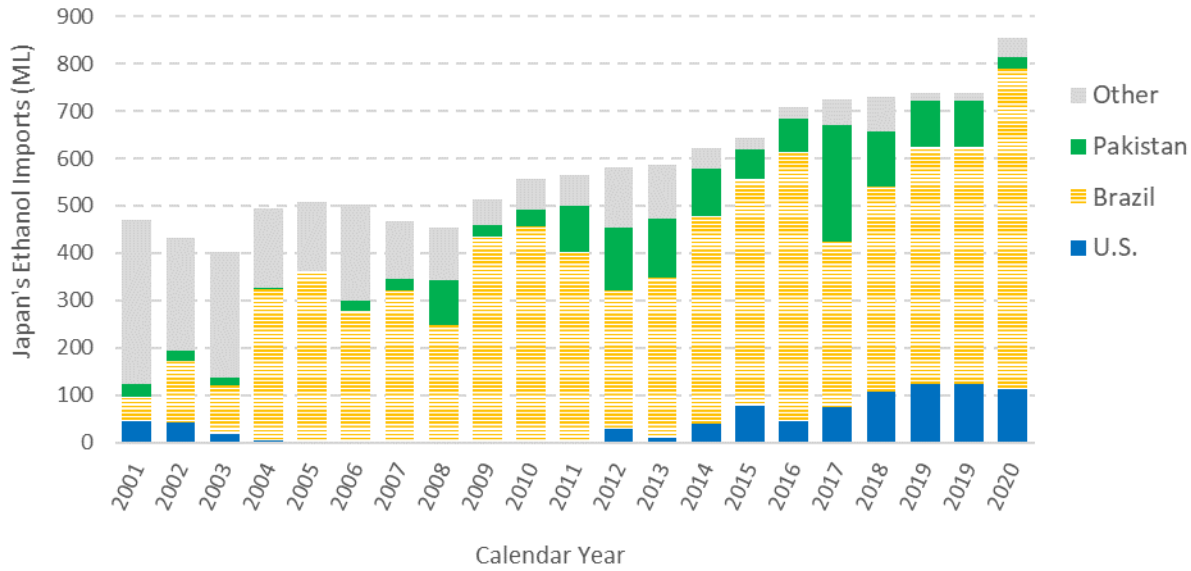
"Crude" ethanol imports destined for Japanese distilleries (HS 2207.10.121) enter duty-free. Typically, these shipments are sent in large tankers first to bonded warehouses in Ulsan, South Korea and then in smaller tankers to Japanese distillers, such as J.Alco. Japanese distillers remove foreign material (e.g., organic contaminants, permanganate-reducing substances, heavy metals) from imported ethanol and dehydrate it to meet Japan Alcohol Association's [quality standards](#) (available in Japanese only). J.Alco and a few other distillers import sugarcane-based ethanol.

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<sup>6</sup> Under the Ethanol Business Act, METI regulates only ethanol containing at least 90 percent of alcohol by volume.

<sup>7</sup> Owned by the Japan Alcohol Industry Group.

**Figure 1. Japanese Ethanol Imports**

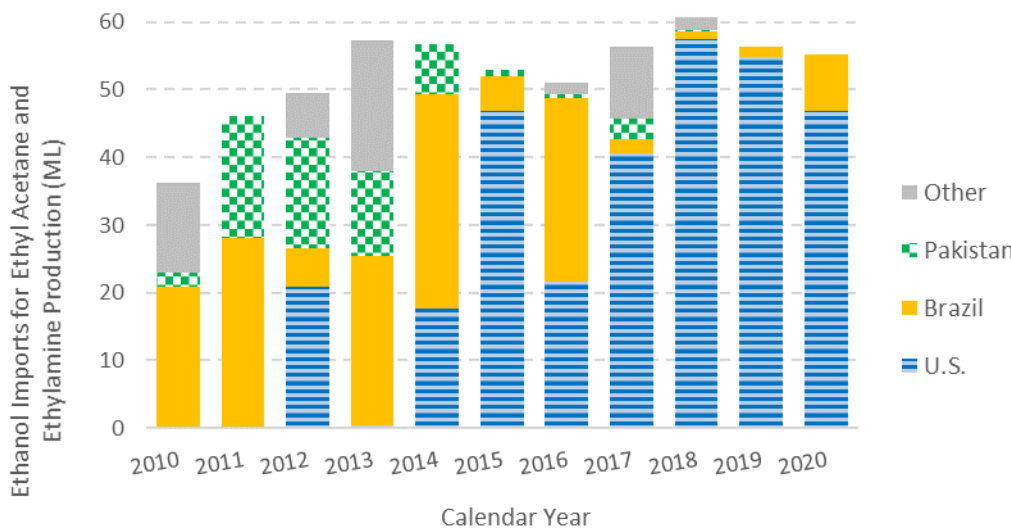


Source: Japan Customs

Note: The trade data represents ethanol imported under HS 2207.10.110-199. Changes in U.S. export levels reflect changes in U.S. domestic demand.

In 2009, Japan Customs established HS codes for ethanol imported for ethyl acetate (HS: 2207.10.122) and ethylamine (HS: 2207.10.123) production. Although these imports go directly to chemical factories (e.g., Daicel), rather than first passing through Japanese distillers, Japan does not apply tariffs to these imports. In recent years, the United States has emerged as a dominant supplier of ethanol for ethyl acetate and ethylamine production (Figure 2).

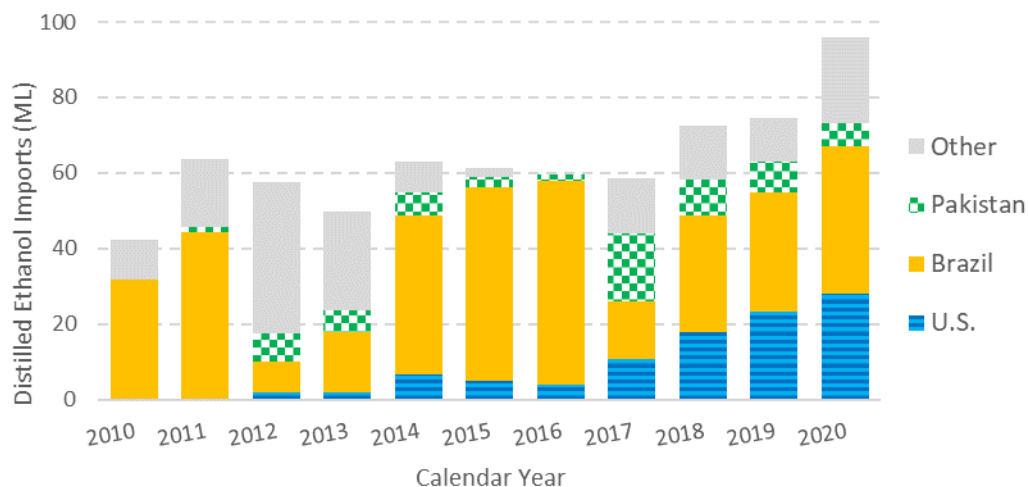
**Figure 2. Industrial Ethanol Imports for Ethyl Acetane and Ethylamine (HS: 2207.10.122 and 2207.10.123)**



Source: Japan Customs

HS 2207.10.199 primarily represents imported “distilled” ethanol that does not go through Japanese distillers (Figure 3). In certain cases, when the intended application of imported ethanol is unknown, Japan Customs assigns the HS 2207.10.199 code so the highly volatile product can enter Japan without the risk of deterioration during storage in bonded areas. When importers decide on end use, Japan Customs refunds tariffs and may retroactively correct import statistics.

**Figure 3. “Distilled” Ethanol (HS 2207.10.199) Imports Trend**



Source: Japan Customs

Note: Between 2010 and 2016, Japan did not have a separate HS code for ethanol used in ETBE production. Using domestic ETBE production data, FAS/Japan estimated those 2010-2016 imports and subtracted them from HS 2207.10.199 trade data.

Japan typically applies a 10 percent tariff to imports entering under HS 2207.10.199. Under Japan’s recent trade agreements (e.g., Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), Japan-EU Economic Partnership Agreement (EU EPA) and the U.S.-Japan Trade Agreement (USJTA)), those tariffs are set to gradually decrease (see Appendix I for tariff levels as of May 2021 and Appendix II for the USJTA tariff reduction schedule). As the tariff rate declines, Japan may increase imports of distilled ethanol and shift away from importing crude ethanol.

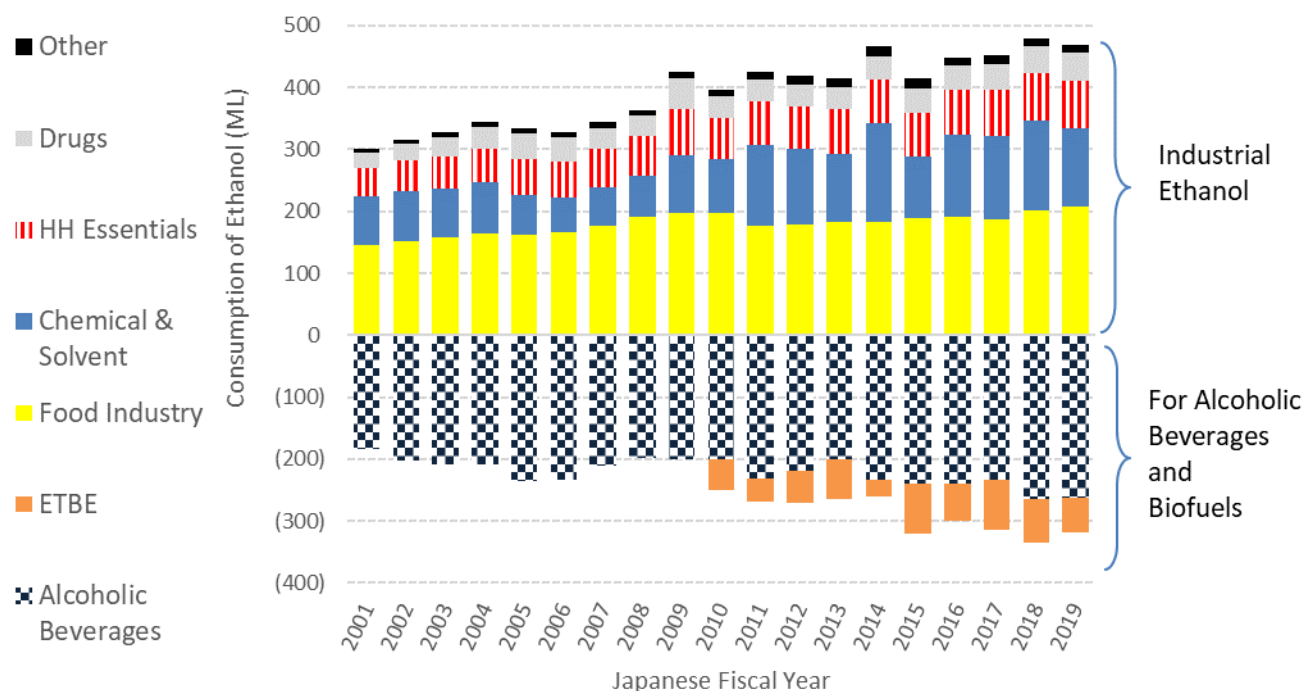
Ethanol for alcoholic beverage consumption imported under HS 2207.10.130 is duty-free and imported by alcoholic beverage manufacturers. These imports often have the same distribution channel as crude ethanol.

In 2016, Japan Customs created a new category (HS 2207.10.191) for ethanol used for ETBE production and eliminated duty on these imports.

### Consumption

Japan Alcohol Association summarizes ethanol transactions reported to METI under the Ethanol Business Act and publishes the [compilation](#) (in Japanese only) by end use. As of May 12, 2021, the latest available consumption data is for JFY 2019. Based on the consumption data and trade statistics, FAS/Tokyo estimates Japan consumed 484 ML of industrial ethanol in JFY 2019. Before the onset of the COVID-19 pandemic, industrial ethanol consumption was gradually increasing in Japan (Figure 4).

**Figure 4. Japanese Ethanol Consumption Trend by Application**



Sources: Japan Alcohol Association, Japan Customs

#### Food Manufacturing Use

In JFY 2019, food industry consumed 209 ML or 43 percent of industrial ethanol. Japan does not permit the use of synthetic ethanol in food manufacturing. Some of the common ethanol applications by the food manufacturing industry include food preservation, vinegar production, processing aid (e.g., condiments, soy sauce, miso paste<sup>8</sup>), food additive and flavoring agent. Ethanol demand in this sector has been on the rise as the popularity of processed and ready-to-eat food continues to grow in Japan. Most food manufacturers procure ethanol from Japanese distillers. Ethanol used for alcoholic beverages is not included in this category.

#### Chemical Production and Solvent Use

Chemical production and solvent use accounted for 140 ML (29 percent) of industrial ethanol in JFY 2019<sup>9</sup>. The consumption in this ethanol category has more than doubled since 2001. Both bioethanol and synthetic ethanol are used for this application.

Japan has annually imported between 50 to 60 ML for ethyl acetane and ethylamine production. Price is the primary consideration in procurement decisions for this ethanol category. Ethyl acetane is primarily used as a substitute for toluene, a solvent for paint thinners and certain types of glue. Showa Denko and Daicel Corporation are the two remaining Japanese producers of ethyl acetane. After the build-up of volatile organic compounds (VOCs) in newly built houses with toluene began to trigger sick house syndrome, in 2003, Japan's Ministry of Land, Infrastructure, Transport and Tourism (MLIT) [amended the Building Standard Law](#) and implemented the

<sup>8</sup> For more information on how soy sauce and miso producers use ethanol, please see [JA2021-0040](#).

<sup>9</sup> Ethanol for ETBE production is categorized as fuel use, rather than industrial.

Sick House Regulation (see F☆☆☆☆ rating system in [JA2019-0214](#)). By 2003, the construction industry has increasingly turned to ethyl acetate to comply with the Ministry of Health, Labour and Welfare guideline on indoor VOCs levels, including toluene.

#### Household Essentials and Cosmetics Use

In JFY 2019, household essentials (e.g., hand sanitizers, detergents, cleaners, cleaning supplies) and cosmetic products accounted for 77 ML (16 percent) of ethanol consumption. Some cosmetic companies have very specific standards for ethanol (e.g., organic). Based on trade statistics, this sector is expected to add about 100 ML in JFY 2020 as demand of hand sanitizers and hygiene products spiked due to COVID-19 concerns.

#### Pharmaceutical Use

The pharmaceutical industry uses ethanol as solvent or preservative in a variety of manufacturing processes. Industrial ethanol used in this sector was 44 ML (9 percent) in JFY 2019.

**Appendix I: Tariff Rates and Applications for Ethanol Imports to Japan under HS 2207**

HS Codes	Description	Tariff Rates in JFY 2021				End Use			
		WTO	CPTPP	EU EPA	USJTA	Industrial	Fuel	Beverage	
<b>2207.10</b>	<b>Undenatured Ethanol 80%+</b>								
<b>Alcoholic strength by volume exceeds 90 percent</b>									
2207.10-121	“Crude” ethanol intended for use in manufacturing industrial alcohol (through Japanese distillers) *	Free	Free	Free	Free	Y	N	N	
2207.10-122	Intended for use in manufacturing ethyl acetate	Free	Free	Free	Free	Y	N	N	
2207.10-123	Intended for use in manufacturing ethylamine	Free	Free	Free	Free	Y	N	N	
2207.10-130	Intended for making alcoholic beverages	Free	Free	Free	Free	N	N	Y	
2207.10-191	Intended for ETBE production	Free	Free	Free	Free	N	Y	N	
2207.10-199	“Distilled” ethanol shipped directly to end-users or stored in bonded area before end-use is determined	10%	6.3%	6.4%	6.3%	Y	N	Y	
<b>Alcoholic strength by volume of 80-90 percent</b>									
2207.10-220	Intended for making alcoholic beverages	Free	Free	Free	Free	Not covered in this report (Negligible imports)			
2207.10-290	Other	38.10 yen/l	Free	Free	38.10 yen/l				
<b>2207.20</b>	<b>Denatured Ethanol of at least 80 percent alcoholic strength by volume</b>								
2207.20-100	Denatured ethanol strength by volume of 90%+	27.20%	13.60%	17.30%	27.20%	Not covered in this report (Negligible imports)			
2207.20-200	Denatured ethanol strength by volume of 80-90%	38.10 yen/l	19.05 yen/l	24.25 yen/l	38.10 yen/l				

Source: [Japan Customs](#)

Notes: The WTO column represents tariff rate for members of the World Trade Organization.

\* Imports under HS 2207.10.121 must first pass through Japanese distillers prior to reaching end users.

**Appendix II: Tariff Reduction Schedule for U.S. Distilled Ethanol (HS 2207.10.199) under USJTA**

JFY 2021	JFY 2022	JFY 2023	JFY 2024	JFY 2025	JFY 2026	JFY 2027	JFY 2028
6.3%	5.4%	4.5%	3.6%	2.7%	1.8%	0.9%	FREE

Note: As of May 2021, HS 2207.10.199 is the only ethanol tariff line addressed in USJTA.

**Attachments:**

No Attachments.