

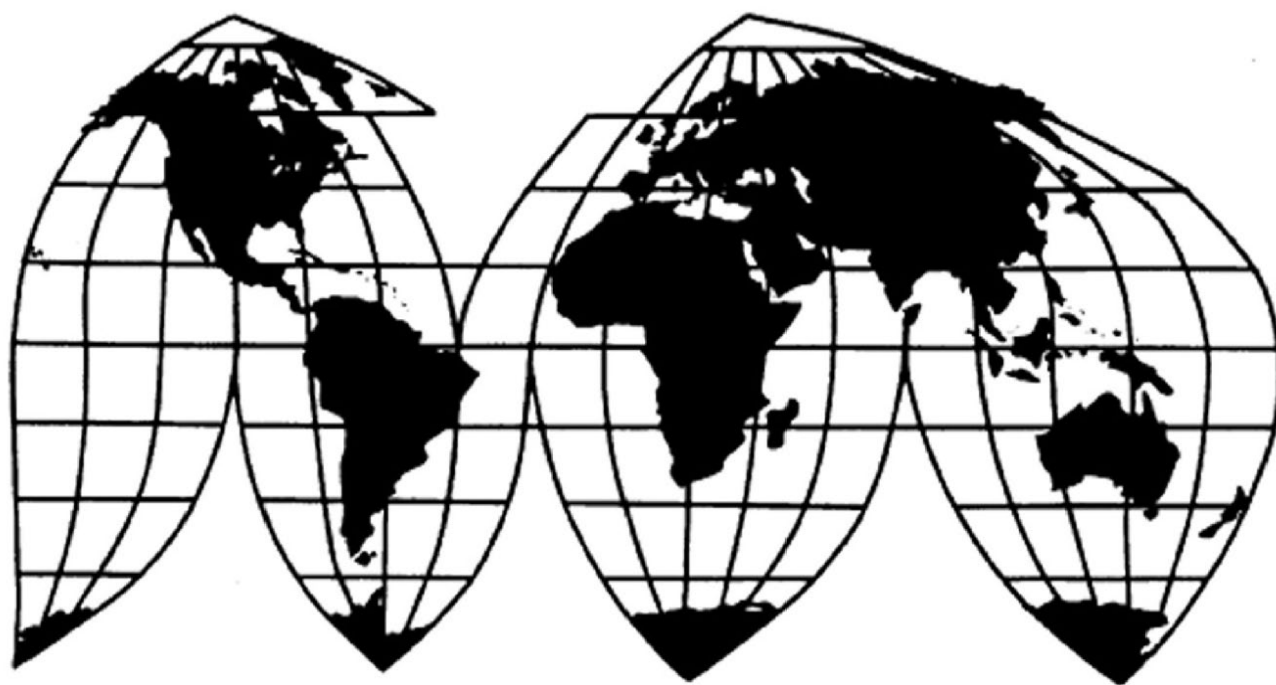
L-lysine from China

Investigation Nos. 701-TA-767 and 731-TA-1750 (Final)

Publication 5783

September 2026

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

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Note.—Information that would reveal confidential operations of individual firms may not be published. Such information is identified by brackets ([]) in confidential reports and is deleted and replaced with asterisks (***) in public reports. Zeroes, null values, and undefined calculations are suppressed and shown as em dashes (—) in tables. If using a screen reader, we recommend increasing the verbosity setting.

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-767 and 731-TA-1750 (Final)

L-Lysine from China

DETERMINATIONS

On the basis of the record¹ developed in the subject investigations, the United States International Trade Commission (“Commission”) determines, pursuant to the Tariff Act of 1930 (“the Act”), that an industry in the United States is materially injured by reason of imports of L-lysine (“lysine”) from China, provided for in subheading 2922.41.00 of the Harmonized Tariff Schedule of the United States, that have been found by the U.S. Department of Commerce (“Commerce”) to be sold in the United States at less than fair value (“LTFV”), and imports of the subject merchandise from China that have been found to be subsidized by the government of China.^{2 3}

BACKGROUND

The Commission instituted these investigations effective May 28, 2025, following receipt of petitions filed with the Commission and Commerce by Archer Daniels Midland Company (“ADM”), Chicago, Illinois; CJ Bio America, Inc., an Iowa Corporation (“CJ Bio”), Fort Dodge, Iowa; and Evonik Corporation (“Evonik”), Piscataway, NJ. The final phase of the investigations was scheduled by the Commission following notification of preliminary determinations by Commerce that imports of lysine from China were subsidized within the meaning of section 703(b) of the Act (19 U.S.C. 1671b(b)) and sold at LTFV within the meaning of 733(b) of the Act (19 U.S.C. 1673b(b)). Notice of the scheduling of the final phase of the Commission’s investigations and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on April 3, 2026 (91 FR 16967). The public hearing in connection with the investigations, originally scheduled for July 14, 2026, was cancelled.⁴

¹ The record is defined in § 207.2(f) of the Commission’s Rules of Practice and Procedure (19 CFR 207.2(f)).

² 91 FR 46399 and 91 FR 46406 (July 23, 2026).

³ Commissioners Bart Thanhauser and David Foley Jr. did not participate in the vote.

⁴ 91 FR 43667, July 16, 2026.

Views of the Commission

Based on the record in the final phase of these investigations, we determine that an industry in the United States is materially injured by reason of imports of L-lysine (“lysine”) from China found by the U.S. Department of Commerce (“Commerce”) to be sold in the United States at less than fair value (“LTFV”) and subsidized by the government of China.

I. Background

Parties to the Investigations. The petitions in these investigations were filed on May 28, 2025, by the Lysine Fair Trade Coalition and its individual members, Archer Daniels Midland Company (“ADM”), CJ Bio America, Inc. (“CJ Bio”), and Evonik Corporation (“Evonik”) (collectively, “Petitioners”), which are U.S. producers of lysine.¹ On July 9, 2026, Petitioners submitted a prehearing brief; after the Commission cancelled the hearing at Petitioners’ request due to a lack of respondent participation, Petitioners did not file a posthearing brief.² Petitioners subsequently filed final comments.³ Beans Nutrition LLC (“Beans Nutrition”), an importer of subject merchandise, submitted a statement opposing the petitions.⁴

Data Coverage. The period of investigation in the final phase of these investigations is January 2023 through March 2026 (“POI”).⁵ U.S. industry data are based on the questionnaire responses of four U.S. producers, accounting for all known U.S. production of lysine corresponding to the scope of investigation in 2025.⁶ U.S. import data are based on the questionnaire responses of 25 U.S. importers, estimated to have accounted for *** percent of U.S. imports from China in 2025, and *** percent of U.S. imports from nonsubject sources

¹ Pet. Vol. 1, EDIS Doc. 852161 (May 28, 2025).

² Petitioners Prehearing Br., EDIS Doc. No. 887248 (July 7, 2026); *see also* Petitioners Request for Cancellation of Hearing, EDIS Doc. 887498 (July 9, 2026), at 1-2; *L-Lysine from China; Cancellation of Hearing for Antidumping and Countervailing Duty Investigations*, 91 Fed. Reg. 43,667 (July 16, 2026). Petitioners offered to respond to any questions from the Commission in a posthearing brief in lieu of a hearing. *See* Petitioners Request for Cancellation of Hearing, EDIS Doc. 887498 (July 9, 2026). The Commission granted the request on July 10, 2026, but did not request the Petitioners to respond to written questions. *Cancellation of Hearing for Antidumping and Countervailing Duty Investigations*, 91 Fed. Reg. 43,667 (July 16, 2026).

³ *See* Petitioners Final Cmts., EDIS Doc. 891506 (Aug. 14, 2026).

⁴ Beans Nutrition Posthearing Statement, EDIS Doc. No. 888955 (July 22, 2026). Beans Nutrition did not file a notice of appearance in these investigations. Accordingly, its submission is treated as a non-party statement.

⁵ Confidential Staff Report, INV-YY-110 (Aug. 4, 2026) (“CR”) at 1.4; Public Report, *L-Lysine from China*, Inv. Nos. 701-TA-767 and 731-TA-1750 (Final), USITC Pub. 5783 (September 2026) (“PR”) at 1.4.

⁶ CR/PR at 3.1.

under HTS subheading 2922.41.0090, a “basket” category.⁷ The Commission received a response to its questionnaire from one foreign producer in China accounting for approximately *** percent of production of subject merchandise in China in 2025.⁸

II. Domestic Like Product

A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the “domestic like product” and the “industry.”⁹ Section 771(4)(A) of the Tariff Act of 1930, as amended (“the Tariff Act”), defines the relevant domestic industry as the “producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product.”¹⁰ In turn, the Tariff Act defines “domestic like product” as “a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation.”¹¹

By statute, the Commission’s “domestic like product” analysis begins with the “article subject to an investigation,” *i.e.*, the subject merchandise as determined by Commerce.¹² Therefore, Commerce’s determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value is “necessarily the starting point of the Commission’s like product analysis.”¹³ The Commission then defines the domestic like product

⁷ CR/PR at 4.1, Table 4.1. Staff adjusted official U.S. import statistics by removing out-of-scope imports entered under the primary Harmonized Tariff Schedule (“HTS”) number, 2922.41.0090, using proprietary, Census-edited Customs records and questionnaire responses, and adding imports of lysine entered under other HTS numbers based on questionnaire responses. *Id.* at 4.1 n.2. Staff calculated subject and total sources coverage figures by comparing subject and total import quantities as reported in questionnaire responses to import quantities from subject sources and all sources as reported in official U.S. import statistics. *Id.*

⁸ CR/PR at 7.3 and Table 7.1.

⁹ 19 U.S.C. § 1677(4)(A).

¹⁰ 19 U.S.C. § 1677(4)(A).

¹¹ 19 U.S.C. § 1677(10).

¹² 19 U.S.C. § 1677(10). The Commission must accept Commerce’s determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value. *See, e.g., USEC, Inc. v. United States*, 34 Fed. App’x 725, 730 (Fed. Cir. 2002) (“The ITC may not modify the class or kind of imported merchandise examined by Commerce.”); *Algoma Steel Corp. v. United States*, 688 F. Supp. 639, 644 (Ct. Int’l Trade 1988), *aff’d*, 865 F.3d 240 (Fed. Cir.), *cert. denied*, 492 U.S. 919 (1989).

¹³ *Cleo Inc. v. United States*, 501 F.3d 1291, 1298 (Fed. Cir. 2007); *see also Hitachi Metals, Ltd. v.* (Continued...)

in light of the imported articles Commerce has identified.¹⁴ The decision regarding the appropriate domestic like product(s) in an investigation is a factual determination, and the Commission has applied the statutory standard of “like” or “most similar in characteristics and uses” on a case-by-case basis.¹⁵ No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.¹⁶ The Commission looks for clear dividing lines among possible like products and disregards minor variations.¹⁷

B. Product Description

Commerce has defined the imported merchandise within the scope of these investigations as:

... animal feed grade L-lysine (lysine). Lysine is an essential amino acid added to animal feed that is used in the biosynthesis of proteins. The scope covers lysine regardless of form, including lysine monohydrochloride, also referred to as lysine

United States, Case No. 19-1289, slip op. at 8-9 (Fed. Cir. Feb. 7, 2020) (the statute requires the Commission to start with Commerce’s subject merchandise in reaching its own like product determination).

¹⁴ *Cleo*, 501 F.3d at 1298 n.1 (“Commerce’s {scope} finding does not control the Commission’s {like product} determination.”); *Hosiden Corp. v. Advanced Display Mfrs.*, 85 F.3d 1561, 1568 (Fed. Cir. 1996) (the Commission may find a single like product corresponding to several different classes or kinds defined by Commerce); *Torrington Co. v. United States*, 747 F. Supp. 744, 748–52 (Ct. Int’l Trade 1990), *aff’d*, 938 F.2d 1278 (Fed. Cir. 1991) (affirming the Commission’s determination defining six like products in investigations where Commerce found five classes or kinds).

¹⁵ *See, e.g., Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int’l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington Co. v. United States*, 747 F. Supp. 744, 749 n.3 (Ct. Int’l Trade 1990), *aff’d*, 938 F.2d 1278 (Fed. Cir. 1991) (“every like product determination ‘must be made on the particular record at issue’ and the ‘unique facts of each case’”). The Commission generally considers a number of factors, including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. *See Nippon*, 19 CIT at 455 n.4; *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int’l Trade 1996).

¹⁶ *See, e.g., S. Rep. No. 96-249* at 90-91 (1979).

¹⁷ *Nippon*, 19 CIT at 455; *Torrington*, 747 F. Supp. at 748-49; *see also S. Rep. No. 96-249* at 90-91 (Congress has indicated that the like product standard should not be interpreted in “such a narrow fashion as to permit minor differences in physical characteristics or uses to lead to the conclusion that the product and article are not ‘like’ each other, nor should the definition of ‘like product’ be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under consideration.”).

HCl, lysine sulfate, and liquid lysine. The scope includes lysine that has been coated or encapsulated for use with ruminants to ensure bioavailability.

Lysine HCl in the dry form has the molecular formula $C_6H_{14}N_2O_2HCl$. The Chemical Abstracts Service (CAS) registry number for lysine HCl is 657–27–2. Lysine HCl contains a minimum of 78 percent lysine by weight, as well as additional amino acids, carbohydrates, mineral salts, and organic acids. Lysine sulfate is the sulfate salt of lysine, and in the dry form it has the molecular formula $C_6H_{16}N_2O_6S$. The CAS registry number for lysine sulfate is 60343–69–3. Lysine sulfate typically contains approximately 40–70 percent lysine by weight, as well as additional amino acids, carbohydrates, mineral salts, and organic acids. Liquid lysine is a concentrated form of lysine in an aqueous solution with the molecular formula $C_6H_{14}N_2O_2$. The CAS registry number for liquid lysine is 56–87–1. Liquid lysine normally contains at least 50 percent lysine by weight, as well as additional amino acids, carbohydrates, mineral salts, and organic acids.

The scope includes animal feed grade lysine that is combined with other products, including for example, by mixing, blending, compounding, or granulating (e.g., base mixes, premixes, and concentrates). For such combined products, only the lysine component is covered by the scope of this investigation.

Subject merchandise also includes lysine that has been processed in a third country, including by commingling, diluting, adding or removing additives, refining, converting from liquid to dry or dry to liquid form, coating or encapsulating, or performing any processing that would not otherwise remove the merchandise from the scope of the investigation if performed in the subject country.¹⁸

¹⁸ CR/PR at 1.8; *L-Lysine From the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value*, 91 Fed. Reg. 46,406, 46,409 (July 23, 2026); *L-Lysine From the People's Republic of China: Final Affirmative Countervailing Duty Determination*, 91 Fed. Reg. 46,399, 46,401 (July 23, 2026). The scope in the countervailing duty investigation is identical to the scope in the antidumping investigation.

Lysine is an essential amino acid that is added to animal feed for swine, poultry, cows, and fish to help promote protein growth.¹⁹ Adding lysine to feed for animals whose diets consist mainly of grass or grain ensures that they receive sufficient amino acids, which these animals cannot produce on their own or create from other nutrients, and have difficulty absorbing.²⁰ The amount of lysine that is blended into animal feed can be adjusted based on the dietary requirements of the specific animal.²¹

Animal feed grade lysine is typically produced in the forms of lysine sulfate, liquid (base) lysine, or lysine monohydrochloride (“lysine HCl”).²² Liquid (base) lysine is sold in totes or in bulk while lysine sulfate and lysine HCl are typically sold in solid forms (*e.g.*, powder, granules, coated, or encapsulated).²³ Each form of lysine has its own distinct color and characteristics.²⁴ The encapsulated or coated forms of lysine are used to feed ruminants like cattle,²⁵ as microbes in their digestive systems can degrade the amino acid.²⁶

Lysine is produced primarily through fermentation. First, specific bacteria are combined with a carbohydrate source, such as dextrose.²⁷ The bacterial medium then grows and creates a fermentation broth consisting of lysine, other amino acids, and biomass.²⁸ To produce lysine sulfate powder, the fermented broth undergoes an evaporation and drying process to remove excess water.²⁹ Because it does not undergo an additional purification or filtration process, lysine sulfate includes other fermentation byproducts and has a lower lysine content relative to other forms of lysine.³⁰

¹⁹ CR/PR at 1.11.

²⁰ CR/PR at 1.11-1.12.

²¹ CR/PR at 1.12. Other grades of lysine that are outside the scope of these investigations may be used as dietary supplements for humans or in human pharmaceutical applications. CR/PR at 1.12 n.23.

²² CR/PR at 1.12, Table 1.5.

²³ CR/PR at 1.12, 1.16, Table 1.5.

²⁴ CR/PR at 1.12, Table 1.5.

²⁵ Ruminants are animals with multiple compartments in their stomachs, such as sheep and cows, while non-ruminants are animals with single-compartment stomachs, such as pigs and chickens. CR/PR at 1.12 n.26.

²⁶ CR/PR at 1.12.

²⁷ CR/PR at 1.14.

²⁸ CR/PR at 1.15.

²⁹ CR/PR at 1.15.

³⁰ CR/PR at 1.15. *See also id.* at 1.16-1.1.18 for additional information on the steps required to produce liquid (base) lysine, lysine HCl, and lysine powder.

C. Arguments of the Parties

Petitioners' Arguments. Petitioners argue that the Commission should define a single domestic like product consisting of animal feed grade lysine, claiming that the final phase of these investigations continues to support finding a single domestic like product covering all forms of animal feed grade lysine within the scope of these investigations.³¹

Beans Nutrition's Arguments. Beans Nutrition's statement does not address the domestic like product definition proposed by Petitioners.

D. Analysis and Conclusion

In the preliminary phase of these investigations, the Commission defined a single domestic like product consisting of all animal feed grade lysine, coextensive with Commerce's scope.³² Applying its traditional six-factor like product analysis, the Commission found that the evidence on the record indicated that all lysine corresponding to the scope shares the same basic physical characteristics, has the same end use, is produced through the same production processes at the same manufacturing facility using the same or overlapping employees, is perceived by market participants to be a single product category that is different from other grades of lysine (*e.g.*, human food grade), and is sold within a continuum of prices that generally reflects lysine content.³³ Based on the preponderance of similarities among all types of animal feed grade lysine, which appear to exist on a continuum with no clear dividing lines between products, and in the absence of any contrary argument, the Commission defined a single domestic like product consisting of all animal feed grade lysine, coextensive with Commerce's scope.³⁴

In the final phase of these investigations, no parties requested the Commission to gather data or other information related to the definition of the like product,³⁵ and the record contains no new information suggesting that the Commission should revisit its definition of the domestic like product from the preliminary phase of the investigations. We therefore define a single domestic like product consisting of all animal feed grade lysine, coextensive with the scope of these investigations.

³¹ Petitioners Prehearing Br. at 4-8.

³² *L-lysine from China*, Inv. Nos. 701-TA-767 and 731-TA-1750 (Preliminary), USITC Pub. 5650 (July 2025) ("*Preliminary Determinations*") at 11-15.

³³ *Preliminary Determinations*, USITC Pub. 5650 at 11-14.

³⁴ *Preliminary Determinations*, USITC Pub. 5650 at 14-15.

³⁵ CR/PR at 1.19.

III. Domestic Industry

The domestic industry is defined as the domestic “producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product.”³⁶ In defining the domestic industry, the Commission’s general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

A. Arguments of the Parties

Petitioners’ Arguments. Petitioners argue that the Commission should define the domestic industry as including all U.S. producers of animal feed grade lysine because none of the petitioning companies, including ***, imported lysine from China.³⁷

Beans Nutrition’s Arguments. Although Beans Nutrition does not directly address the domestic industry definition proposed by Petitioners in its statement, it alleges that ADM purchased subject merchandise to supplement its domestic shipments of lysine.³⁸

B. Analysis and Conclusion

In the preliminary phase of these investigations, *** qualified as a related party under 19 U.S.C. § 1677(4)(B)(ii)(III) because a common parent company, ***, owns both it and ***, a subject producer and exporter in China.³⁹ The Commission determined that appropriate circumstances did not exist to exclude *** from the domestic industry as a related party as it did not import lysine from China during the period of investigation in the preliminary phase, of January 2022 through March 2025, and the record lacked any indication that its relationship with *** had the effect of shielding it from the effects of subject imports, such that its inclusion

³⁶ 19 U.S.C. § 1677(4)(A).

³⁷ Petitioners Prehearing Br. at 8-9.

³⁸ Beans Nutrition Posthearing Statement at 1-2, 4. Beans Nutrition provided a purchase order for the sale of 100,000 units of “1000 KG” of “L-LYSINE HCL 98.5%,” dated March 1, 2022 as evidence to corroborate this allegation. *Id.* at 8.

Beans Nutrition alleges that ADM purchased subject merchandise from it during the investigation period. Beans Nutrition Posthearing Statement at 1-2, 4. However, the only evidence it provides of these purchases is a purchase order for lysine from 2022, which predates the investigation period in the final phase of these investigations. *Id.* at 8. Accordingly, we do not need to consider whether appropriate circumstances exist to exclude ADM from the domestic industry as a related party.

³⁹ CR/PR at Table 3.2.

in the domestic industry would skew the data for the domestic industry or mask injury.⁴⁰ The Commission thus defined the domestic industry as consisting of all U.S. producers of animal feed grade lysine, coextensive with Commerce's scope.⁴¹

In the final phase of these investigations, a representative for *** indicated in e-mail correspondence with staff that *** did not produce subject lysine during the investigation period.⁴² Given the lack of production of subject merchandise by *** during the investigation period, *** is not subject to possible exclusion pursuant to 19 U.S.C. § 1677(4)(B)(ii)(III), and the Commission need not re-examine whether appropriate circumstances exist to exclude *** from the domestic industry as a related party in these investigations. Therefore, consistent with our definition of the domestic like product, we define the domestic industry to include all domestic producers of animal feed grade lysine.

IV. Negligible Imports

Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible.⁴³ The statute further provides that subject imports from a single country which comprise less than 3 percent of total such imports of the product may not be considered negligible if there are several countries subject to investigation with negligible imports and the sum of such imports from all those countries collectively accounts for more than 7 percent of the volume of all such merchandise imported into the United States.⁴⁴ In the case of countervailing duty investigations involving developing countries (as designated by the United States Trade Representative), the statute indicates that the negligibility limits are 4 percent and 9 percent, rather than 3 percent and 7 percent.⁴⁵

⁴⁰ *Confidential Preliminary Determinations*, EDIS Doc. No. 887084 (July 6, 2026) at 17-18.

⁴¹ *Preliminary Determinations*, USITC Pub. 5650 at 14-15.

⁴² See e-mail Correspondence, EDIS Doc. No. 887528 (July 9, 2026).

⁴³ See 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)).

⁴⁴ 19 U.S.C. § 1677(24)(A)(ii).

⁴⁵ 19 U.S.C. § 1677(24)(B).

Petitioners argue that the subject imports from China accounted for virtually all U.S. imports of lysine and are therefore not negligible.⁴⁶ Beans Nutrition does not address negligibility in its statement.

The Commission's questionnaire response data indicate that from May 2024 to April 2025, the 12-month period preceding the filing of the petitions, subject imports from China accounted for *** percent of total U.S. imports of lysine.⁴⁷ As subject imports from China are well above the statutory threshold, we find that imports of lysine from China subject to the antidumping and countervailing duty investigations are not negligible.

V. Material Injury by Reason of Subject Imports

Based on the record in the final phase of these investigations, we find that an industry in the United States is materially injured by reason of imports of lysine from China that Commerce has found to be sold in the United States at LTFV and subsidized by the government of China.

A. Legal Standards

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.⁴⁸ In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.⁴⁹ The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."⁵⁰ In assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.⁵¹ No single factor is dispositive, and all relevant factors are considered "within the

⁴⁶ Petitioners Prehearing Br. at 15.

⁴⁷ CR/PR at Table 4.5. The volume of imports subject to the antidumping and countervailing duty investigations is the same.

⁴⁸ 19 U.S.C. §§ 1671d(b), 1673d(b).

⁴⁹ 19 U.S.C. § 1677(7)(B). The Commission "may consider such other economic factors as are relevant to the determination" but shall "identify each {such} factor ... and explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B).

⁵⁰ 19 U.S.C. § 1677(7)(A).

⁵¹ 19 U.S.C. § 1677(7)(C)(iii).

context of the business cycle and conditions of competition that are distinctive to the affected industry.”⁵²

Although the statute requires the Commission to determine whether the domestic industry is “materially injured or threatened with material injury by reason of” unfairly traded imports,⁵³ it does not define the phrase “by reason of,” indicating that this aspect of the injury analysis is left to the Commission’s reasonable exercise of its discretion.⁵⁴ In identifying a causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the “by reason of” standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.⁵⁵

In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.⁵⁶ In performing its examination, however, the Commission need not isolate

⁵² 19 U.S.C. § 1677(7)(C)(iii).

⁵³ 19 U.S.C. §§ 1671d(b), 1673d(b).

⁵⁴ *Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484-85 (Fed. Cir. 1998) (“{T}he statute does not ‘compel the commissioners’ to employ {a particular methodology}.”), *aff’g*, 944 F. Supp. 943, 951 (Ct. Int’l Trade 1996).

⁵⁵ The Federal Circuit, in addressing the causation standard of the statute, observed that “{a}s long as its effects are not merely incidental, tangential, or trivial, the foreign product sold at less than fair value meets the causation requirement.” *Nippon Steel Corp. v. USITC*, 345 F.3d 1379, 1384 (Fed. Cir. 2003). This was further ratified in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), where the Federal Circuit, quoting *Gerald Metals, Inc. v. United States*, 132 F.3d 716, 722 (Fed. Cir. 1997), stated that “this court requires evidence in the record ‘to show that the harm occurred “by reason of” the LTFV imports, not by reason of a minimal or tangential contribution to material harm caused by LTFV goods.’” *See also Nippon Steel Corp. v. United States*, 458 F.3d 1345, 1357 (Fed. Cir. 2006); *Taiwan Semiconductor Industry Ass’n v. USITC*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

⁵⁶ SAA at 851-52 (“{T}he Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports.”); S. Rep. 96-249 at 75 (1979) (the Commission “will consider information which indicates that harm is caused by factors other than less-than-fair-value imports.”); H.R. Rep. 96-317 at 47 (1979) (“in examining the overall injury being (Continued...)”).

the injury caused by other factors from injury caused by unfairly traded imports.⁵⁷ Nor does the “by reason of” standard require that unfairly traded imports be the “principal” cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.⁵⁸ It is clear that the existence of injury caused by other factors does not compel a negative determination.⁵⁹

Assessment of whether material injury to the domestic industry is “by reason of” subject imports “does not require the Commission to address the causation issue in any particular way” as long as “the injury to the domestic industry can reasonably be attributed to the subject imports.”⁶⁰ The Commission should ensure that it has “evidence in the record” to “show that

experienced by a domestic industry, the ITC will take into account evidence presented to it which demonstrates that the harm attributed by the petitioner to the subsidized or dumped imports is attributable to such other factors;” those factors include “the volume and prices of nonsubsidized imports or imports sold at fair value, contraction in demand or changes in patterns of consumption, trade restrictive practices of and competition between the foreign and domestic producers, developments in technology and the export performance and productivity of the domestic industry”); accord *Mittal Steel*, 542 F.3d at 877.

⁵⁷ SAA at 851-52 (“{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports.”); *Taiwan Semiconductor Industry Ass’n*, 266 F.3d at 1345 (“{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports Rather, the Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports.” (emphasis in original)); *Asociacion de Productores de Salmon y Trucha de Chile AG v. United States*, 180 F. Supp. 2d 1360, 1375 (Ct. Int’l Trade 2002) (“{t}he Commission is not required to isolate the effects of subject imports from other factors contributing to injury” or make “bright-line distinctions” between the effects of subject imports and other causes.); see also *Softwood Lumber from Canada*, Inv. Nos. 701-TA-414 and 731-TA-928 (Remand), USITC Pub. 3658 at 100-01 (Dec. 2003) (Commission recognized that “{i}f an alleged other factor is found not to have or threaten to have injurious effects to the domestic industry, i.e., it is not an ‘other causal factor,’ then there is nothing to further examine regarding attribution to injury”), citing *Gerald Metals*, 132 F.3d at 722 (the statute “does not suggest that an importer of LTFV goods can escape countervailing duties by finding some tangential or minor cause unrelated to the LTFV goods that contributed to the harmful effects on domestic market prices.”).

⁵⁸ S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47.

⁵⁹ See *Nippon Steel Corp.*, 345 F.3d at 1381 (“an affirmative material-injury determination under the statute requires no more than a substantial-factor showing. That is, the ‘dumping’ need not be the sole or principal cause of injury.”).

⁶⁰ *Mittal Steel*, 542 F.3d at 876 & 78; see also *id.* at 873 (“While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured ‘by reason of’ subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology.”) citing *United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swiff-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission’s causation analysis as comporting with the Court’s guidance in *Mittal*.

the harm occurred ‘by reason of’ the LTFV imports,” and that it is “not attributing injury from other sources to the subject imports.”⁶¹ The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed “rigid adherence to a specific formula.”⁶²

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is a factual inquiry, subject to review under the substantial evidence standard.⁶³ Congress has delegated this factual finding to the Commission because of the agency’s institutional expertise in resolving injury issues.⁶⁴

B. Conditions of Competition and the Business Cycle

The following conditions of competition inform our analysis of whether there is material injury by reason of subject imports.

1. Demand Conditions

U.S. demand for lysine is driven by demand downstream for animal feed.⁶⁵ Lysine is mostly used as an animal feed additive for poultry and swine, though it is also used in feed for fish and ruminants, such as cows.⁶⁶ Demand for lysine is thus subject to pig, cattle, and chicken inventories, which are in turn influenced by meat protein demand.⁶⁷ According to U.S.

⁶¹ *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 877-79. We note that one relevant “other factor” may involve the presence of significant volumes of price-competitive nonsubject imports in the U.S. market, particularly when a commodity product is at issue. In appropriate cases, the Commission collects information regarding nonsubject imports and producers in nonsubject countries in order to conduct its analysis.

⁶² *Nucor Corp. v. United States*, 414 F.3d 1331, 1336, 1341 (Fed. Cir. 2005); *see also Mittal Steel*, 542 F.3d at 879 (“*Bratsk* did not read into the antidumping statute a Procrustean formula for determining whether a domestic injury was ‘by reason’ of subject imports.”).

⁶³ We provide in our discussion below a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

⁶⁴ *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp.*, 458 F.3d at 1350, *citing U.S. Steel Group*, 96 F.3d at 1357; S. Rep. 96-249 at 75 (“The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.”).

⁶⁵ CR/PR at 2.7. *See also* Petitioners Postconf. Br., EDIS Doc. 854826 (June 24, 2025), at 9.

⁶⁶ CR/PR at 1.11. *See also* Staff Conference Transcript (“Conf. Tr.”) at 60-61 (Walley, Rosenthal). Lysine accounts for a small share of the cost of the end-use animal feed products in which it is used, of between 1 to 5 percent. CR/PR at 2.7.

⁶⁷ CR/PR at 1.11 and Figure 2.1. Three of four responding U.S. producers, 12 of 18 responding U.S. importers, and 15 of 24 responding U.S. purchasers reported that the U.S. market for lysine is not subject to business cycles. *Id.* at 2.1.

Department of Agriculture statistical data, U.S. inventories of swine, cattle, and hatchings of chickens fluctuated within fairly narrow bands during the POI.⁶⁸

Questionnaire respondents generally reported that demand for lysine remained unchanged during the POI, though some U.S. importers reported that demand fluctuated upward. Specifically, two of three responding U.S. producers, 9 of 18 responding U.S. importers, and 11 of 20 U.S. purchasers reported that demand did not change during the investigation period, whereas six U.S. importers reported that demand fluctuated upward.⁶⁹

Apparent U.S. consumption fluctuated during the investigation period. Units of lysine are measured in the U.S. market on the basis of short tons per lysine HCl, as lysine HCl is the animal feed grade lysine product with the highest concentration of lysine.⁷⁰ On a short ton per lysine HCl basis, apparent U.S. consumption increased from *** short tons in 2023 to *** short tons in 2024, then decreased to *** short tons in 2025, a level *** percent higher than in 2023.⁷¹

2. Supply Conditions

During the investigation period, the U.S. market for lysine was supplied by the domestic industry, subject imports, and nonsubject imports.⁷² The domestic industry was the largest source of supply of lysine products to the U.S. market throughout the period of investigation. Its share of apparent U.S. consumption by quantity declined throughout the period, from *** percent in 2023 to *** percent in 2024, and *** percent in 2025, for an overall loss of *** percentage points.⁷³

The domestic industry consisted of the four responding U.S. producers during the period of investigation—ADM, CJ Bio, Evonik, and Ajinomoto Health & Nutrition North America, Inc. (“Ajinomoto”).⁷⁴ There were several key industry events that occurred within the investigation period, including Evonik’s announcement that it would reduce its business size via restructuring in December 2024, Ajinomoto’s decision to cease producing most forms of lysine in the United

⁶⁸ CR/PR at Figure 2.1, Table 2.8.

⁶⁹ CR/PR at 2.8, Table 2.7. One U.S. producer, seven U.S. importers, and six U.S. purchasers reported that demand steadily increased or fluctuated upward, whereas two U.S. importers, and three U.S. purchasers reported that demand steadily decreased or fluctuated downward. *Id.* at Table 2.7.

⁷⁰ See Pet., Exh. GEN-1, Att. 2 ¶ 3 (*** Decl.).

⁷¹ CR /PR at Table 4.6. Apparent U.S. consumption was *** short tons in interim 2026, down from *** short tons in interim 2025. *Id.*

⁷² CR/PR at Tables 4.6, C.1.

⁷³ CR/PR at Tables 4.6, C.1. The domestic industry supplied *** percentage points more of the U.S. market in interim 2026, at *** percent, than in interim 2025, at *** percent, as subject imports retreated from the U.S. market during the interim 2026 period. *Id.*

⁷⁴ CR/PR at 3.1.

States in late 2024 ***,⁷⁵ save for its rumen-protected version of lysine, and ADM's announcement that it would lay off up to 700 employees globally as part of a cost savings-measure in February 2025.⁷⁶

Petitioners argue that the domestic industry is capable of supplying the entire U.S. market for lysine, and emphasize that the industry's practical capacity exceeded apparent U.S. consumption throughout the period of investigation.⁷⁷ Information on the record indicates that the domestic industry has the ability to respond to changes in demand with large quantities of shipments of domestically manufactured lysine due to the availability of unused capacity, the ability for some U.S. producers to shift production from alternative products, and the possibility to shift shipments from alternate markets.⁷⁸

Subject imports were the second largest source of supply of lysine products to the U.S. market throughout the investigation period. Their share of apparent U.S. consumption by quantity increased during the period, from *** percent in 2023 to *** percent in 2024, and *** percent in 2025, for an overall gain of *** percentage points.⁷⁹

Nonsubject imports were minimally present in the U.S. market during the 2023-2025 calendar-year period. Their share of apparent U.S. consumption increased from *** percent in 2023 to *** percent in 2024 and 2025.⁸⁰ The largest sources of nonsubject imports in 2025 were France and India.⁸¹

⁷⁵ See *** Questionnaire Resp., EDIS Doc. 855086 (June 25, 2025) at II-2.

⁷⁶ CR/PR at Table 3.3. We note that there were several acquisitions reported or announced by subject producers of lysine relating to the U.S. market. Plum Biotechnology Group, a subsidiary of the Meihua Group, reported the acquisition of the amino acid and human milk oligosaccharide businesses of BioKyowa in Cape Girardeau, Missouri in November 2024. *Id.* Additionally, CJ CheilJedang Corp., an affiliate of ***, announced in April 2025 that it planned to expand its U.S. and Chinese lysine production, after having initially sought to sell its global lysine business. *Id.* Based on e-mail correspondence between staff and representatives of ***, these expansion plans would appear to postdate the period of investigation. *Id.*

⁷⁷ Petitioners Prehearing Br. at 12. On a short ton lysine HCl equivalent basis, the domestic industry's practical capacity increased from 485,620 short tons in 2023 to 488,928 short tons in 2024, and then declined to 480,928 short tons in 2025, for an overall decline of 1.0 percent. CR/PR at Table 3.7. It was 121,756 short tons in interim 2026, down from 123,032 short tons in interim 2025. *Id.* These amounts exceeded apparent U.S. consumption in each yearly or interim segment of the investigation period. *Compare id.* at Table 3.7 with Table 4.6.

⁷⁸ CR/PR at 2.5.

⁷⁹ CR/PR at Tables 4.6, C.1. Subject imports supplied *** percent of the U.S. market in interim 2026, down from *** percent in interim 2025. *Id.*

⁸⁰ CR/PR at Tables 4.6, C.1. Nonsubject imports supplied *** percent of the U.S. market in interim 2026, up from *** percent in interim 2025. *Id.*

⁸¹ CR/PR at 2.6. Canada and South Korea accounted for most U.S. shipments of nonsubject imports in interim 2026. *Id.* at 1.4. *See also* Petitioners Prehearing Br. at 10.

Most firms reported that they did not experience supply constraints during the investigation period.⁸² U.S. producer Ajinomoto reported a supply constraint in 2025, in connection with its decision to cease producing most forms of lysine in late 2024.⁸³ Three U.S. importers reported experiencing supply constraints during the investigation period arising from manufacturing constraints from foreign producers, ocean freight costs, and long lead times.⁸⁴ Additionally, U.S. importer *** reported that it was unable to obtain domestically produced dry lysine throughout the period of investigation, such that it relied on imported merchandise to meet its dry lysine requirements.⁸⁵ U.S. purchasers reported experiencing supply constraints from U.S. producers CJ Bio, which reportedly was unwilling or unable to provide bids to ***, and Evonik, which reportedly put customers on allocation or was sold out of domestically produced lysine, and Ajinomoto.⁸⁶

3. Substitutability and Other Conditions

We find that there is a moderately high degree of substitutability between domestically produced lysine and subject imports.⁸⁷ All responding U.S. producers, 11 of 16 responding U.S.

⁸² CR/PR at 2.6. Three of four U.S. responding producers, 16 of 19 responding U.S. importers, and 14 of 23 responding U.S. purchasers reported that they did not experience supply constraints during the investigation period. *Id.* Seven firms reported experiencing constraints in 2023, 11 reported constraints in 2024, 10 reported constraints in 2025, and 8 reported constraints since January 2026. *Id.* at Table 2.6.

⁸³ CR/PR at 2.6. U.S. producers *** and *** reported experiencing prolonged shutdowns and production curtailments reportedly due to ***. *Id.* at Table 3.4.

⁸⁴ CR/PR at 2.6. U.S. importers *** stated that soybean meal prices were low in 2025 and 2026, which led to the removal by end-users of lysine in animal diets. *Id.*

⁸⁵ CR/PR at 2.6. In the preliminary determination, the domestic industry reported some sales of dry lysine products. The Commission evaluated underselling by considering dry-to-dry price comparisons as well as dry-to-wet product comparisons. *See Confidential Preliminary Determinations* at 32-34. In so doing, the Commission acknowledged “that there may be differences in costs that go into producing and shipping lysine in dry versus liquid form,” and determined to examine this issue further in any final phase of its investigations. *Id.* at 34 n.162. The Commission was unable to examine this issue in further detail due to the lack of any meaningful respondent party participation. Beans Nutrition argued that the liquid lysine products predominantly produced by U.S. producers are incompatible with feed mills designed for dry lysine HCl products. Beans Nutrition Posthearing Statement at 5. Beans Nutrition does not develop this argument further, beyond noting that such feed mills require costly retrofits to process wet lysine. *Id.* Twenty-two of 23 purchasers reported that they purchase dry lysine but do not convert it to liquid lysine, whereas the remaining purchaser reported that it did not purchase dry lysine. CR/PR at 2.14. Accordingly, the record lacks information concerning the number of feed mills in the U.S. market that are designed for dry versus wet lysine HCl products, or the extent of retrofitting required to enable such mills to process wet lysine into animal feed.

⁸⁶ CR/PR at 2.6.

⁸⁷ CR/PR at 2.11.

importers, and 9 of 18 responding U.S. purchasers reported that domestically produced lysine is “always” interchangeable with subject imports.⁸⁸ In addition, most responding U.S. purchasers reported that domestically produced lysine is comparable with imported lysine on all factors except delivery time and price.⁸⁹ U.S. purchasers reported that U.S. produced lysine was superior to subject merchandise in terms of delivery time, but was inferior in terms of price, i.e., priced higher than subject imports.⁹⁰ Additionally, the record indicates that the domestic like product and subject imports consisted of overlapping types of lysine products during the period of investigation and that most market participants report that different types of products can be used interchangeably. Specifically, *** of the domestic industry’s U.S. shipments of the domestic like product and responding U.S. importers’ U.S. shipments of subject merchandise consisted of lysine products that were not mixed or blended.⁹¹ There were no U.S. shipments of subject imports in liquid form during the investigation period.⁹² Liquid lysine, however, accounted for *** percent of the domestic industry’s U.S. shipments by quantity during the period examined.⁹³ Domestic industry witnesses testified at the staff conference that, while there are generally no functional differences between dry and liquid (base) lysine, dry lysine contains a higher concentration of lysine than liquid (base) lysine, weighs less than liquid (base) lysine, and has longer average shelf lives.⁹⁴ Additionally, information provided by Petitioners during the preliminary phase of these investigations indicates that dry lysine is generally more expensive to produce than liquid (base) lysine, as dry lysine entails additional production steps relative to liquid (base) lysine production.⁹⁵ In the final phase of these investigations, most responding U.S. producers reported that lysine HCl,

⁸⁸ CR/PR at Table 2.17.

⁸⁹ CR/PR at Table 2.16.

⁹⁰ CR/PR at Table 2.16.

⁹¹ Compare CR/PR at Table 3.10 with Table 4.3. Liquid (base) lysine that is not mixed or blended accounted for *** percent of the domestic industry’s U.S. shipments by quantity in 2025, followed by lysine sulfate that is not mixed or blended, which accounted for *** percent, and lysine HCl that is not mixed or blended, which accounted for *** percent. *Id.* at Table 3.10. Lysine HCl that is mixed or blended accounted for the remaining *** percent of the domestic industry’s U.S. shipments during the period examined. *Id.* Lysine HCl that is not mixed or blended accounted for *** percent of U.S. shipments reported by importers in 2025, followed by lysine sulfate that is not mixed or blended, which accounted for *** percent. *Id.* at Table 4.3. Lysine HCl that is mixed or blended accounted for the remaining *** percent of importers’ U.S. shipments during the period examined. *Id.*

⁹² CR/PR at Table 4.10.

⁹³ CR/PR at Table 3.10.

⁹⁴ See Conf. Tr. at 15 (Choi), 54 (Lucas, Benson), 87 (Benson, Choi, Nel).

⁹⁵ See Petitioners Postconf. Br., Exhs. 1 at 9, 4 at para. 5 (Nel Decl.), 5 at para. 5, (Choi Decl.), and 6 at para. 4 (Walley Decl.).

lysine sulfate, and liquid lysine can “always” be used interchangeably.⁹⁶ U.S. importer responses were split, with a greater number of responding U.S. importers reporting that lysine HCl is “sometimes” or “never” interchangeable with lysine sulfate and liquid lysine than those reporting that lysine HCl is “always” or “frequently” interchangeable with these two product types.⁹⁷ Most responding U.S. purchasers reported that all three forms of lysine are “frequently” or “sometimes” interchangeable.⁹⁸

We find that price is an important factor in purchasing decisions for lysine. Responding U.S. purchasers identified price as the first-most important factor in purchasing decisions for lysine (8 firms), followed by availability (7 firms), and quality (6 firms).⁹⁹ Additionally, all responding U.S. producers, 11 of 15 responding U.S. importers, and 11 of 19 responding U.S. purchasers reported that differences other than price are “sometimes” or “never” significant.¹⁰⁰

Lysine is primarily sold from inventory.¹⁰¹ During the investigation period, responding U.S. producers reported that *** of their commercial U.S. shipments were sold from inventory, with lead times averaging 15 days.¹⁰² Responding U.S. importers reported that 72.3 percent of their commercial U.S. shipments were sold from U.S. inventory, with lead times averaging 13 days, whereas 13.9 percent of their U.S. shipments were sold from foreign inventory, with lead times averaging 44 days, and the remaining 13.8 percent of their U.S. shipments were produced to-order, with lead times averaging 11 days.¹⁰³

Several pricing methods are used in the U.S. market. All four responding U.S. producers and 18 of 19 responding U.S. importers reported setting prices on a transaction-by-transaction basis.¹⁰⁴ All responding U.S. producers and 14 U.S. importers also reported setting prices

⁹⁶ CR/PR at Table 2.12.

⁹⁷ CR/PR at Table 2.12. U.S. importers were evenly split on the interchangeability of lysine sulfate and liquid lysine, with four firms reporting that these products are “always” or “frequently” and four firms reporting that these products were “sometimes” or “never” interchangeable. *Id.*

⁹⁸ CR/PR at Table 2.12.

⁹⁹ CR/PR at Table 2.10. Price was also the most frequently reported second-most important factor, and tied with availability as the most frequently reported third-most important factor. *Id.* The most often cited top three factors firms consider in their purchasing decisions for lysine were price (24 firms), availability (20 firms), and quality (12 firms). *Id.*

¹⁰⁰ CR/PR at Table 2.18.

¹⁰¹ CR/PR at 2.15.

¹⁰² CR/PR at 2.15.

¹⁰³ CR/PR at 2.15.

¹⁰⁴ CR/PR at Table 5.2.

through contracts.¹⁰⁵ Responding U.S. producers reported selling approximately half (***) percent) of their lysine pursuant to long-term contracts in 2025, with a sizeable share (***) percent) selling lysine through annual contracts, and *** percent also selling through shorter-term contracts.¹⁰⁶ U.S. importers reported selling lysine on a shorter-term basis in 2025, through short-term contract and spot sales that accounted for over *** percent of their commercial U.S. shipments of lysine during the period of investigation.¹⁰⁷

Substitutes for lysine are limited. All four responding U.S. producers and 11 of 18 U.S. importers reported that there were no substitutes for lysine.¹⁰⁸

The primary raw material used to produce lysine is the starch from plant material feedstock used to produce dextrose, which is derived from corn for all responding U.S. producers.¹⁰⁹ Dextrose accounted for between *** percent to *** percent of total raw material costs during the investigation period.¹¹⁰ Other raw materials reported by U.S. producers include ammonia and fermentation media.¹¹¹ Monthly U.S. corn prices declined from a period high of \$6.80 per bushel in February 2023 to a period low of \$3.84 per bushel in August 2024, then fluctuated upward for the remainder of the investigation period.¹¹² Raw material costs were the largest component of the domestic industry's cost of goods sold ("COGS") throughout the period of investigation.¹¹³ As a ratio to total net sales, the domestic industry's raw material costs declined from 68.4 percent in 2023 to 62.9 percent in 2024, and 58.7 percent in 2025.¹¹⁴

¹⁰⁵ CR/PR at Table 5.2. Moreover, seven U.S. importers reported selling lysine through set price lists. *Id.* No responding U.S. producer reported selling lysine using this pricing method. *Id.*

¹⁰⁶ CR/PR at Table 5.3.

¹⁰⁷ CR/PR at Table 5.3.

¹⁰⁸ CR/PR at 2.11. In the preliminary phase of these investigations, two domestic industry representatives testified at the conference that soybean meal is not a direct substitute for supplemental lysine. *See* Conf. Tr. at 63 (Lucas, Walley). In the final phase of these investigations, seven U.S. importers and most responding U.S. purchasers (14 of 19) reported that soybean meal and corn could be used as substitutes for lysine, that the price of these substitutes may impact the price of lysine, and that lysine prices generally follow the price of soybean meal. CR/PR at 2.11.

¹⁰⁹ CR/PR at 5.1. Domestic industry representatives testified at the conference that it would be difficult to change feedstock from corn to a different crop. Conf. Tr. at 56-57 (Walley, Choi, Nel).

¹¹⁰ CR/PR at 6.1.

¹¹¹ CR/PR at Table 6.1.

¹¹² CR/PR at Table 5.1.

¹¹³ CR/PR at Table 6.1.

¹¹⁴ CR/PR at Table 6.1. The ratio of raw material costs to net sales was *** percent in interim 2026, up from *** percent in interim 2025. *Id.*

Lysine enters the U.S. market under HTS statistical reporting number 2922.41.0090 subject to a general duty rate of 3.7 percent *ad valorem*.¹¹⁵ Lysine originating in China is not subject to additional duties under sections 122 or 301 of the Trade Act of 1974 or pursuant to the International Emergency Economic Powers Act.¹¹⁶

C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the “Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant.”¹¹⁷

On a short ton lysine HCl equivalent basis, subject imports increased from *** short tons in 2023 to *** short tons in 2024, and *** short tons in 2025, resulting in a *** percent increase in the volume of subject imports from 2023 to 2025.¹¹⁸ As a share of apparent U.S. consumption, subject imports increased from 2023 to 2025, from *** percent in 2023 to *** percent in 2024, and *** percent in 2025, for an overall gain of *** percentage points during this period.¹¹⁹

¹¹⁵ CR at 1.9.

¹¹⁶ CR at 1.9-1.10, Table 1.4.

¹¹⁷ 19 U.S.C. § 1677(7)(C)(i).

¹¹⁸ CR/PR at Table 4.2. The volume of subject imports was *** percent lower in interim 2026, at *** short tons, than in interim 2025, at *** short tons. *Id.*

¹¹⁹ CR/PR at Tables 4.6, C.1. Subject imports supplied *** percentage points less of the U.S. market in interim 2026, at *** percent, than in interim 2025, at *** percent. *Id.*

While we recognize that the volume and market share of subject imports were lower in interim 2026 than in interim 2025, we afford less weight to the data for the interim 2026 period, as these data encapsulate only a quarter year. Additionally, in a final phase investigation, the statute requires the Commission to consider whether changes in the volume, price effects, or impact of subject imports are related to the pendency of the investigation. 19 U.S.C. § 1677(7)(I). If the Commission determines that such changes are related to the pendency of the investigation, it has the discretion under the statute to reduce the weight accorded to such information. *Id.* In these investigations, Petitioners argue that the issuance of Commerce’s preliminary affirmative countervailing duty determination on January 22, 2026, followed by its preliminary affirmative antidumping duty determination on March 6, 2026, resulted in lower quantities of subject imports, U.S. shipments of subject imports, and subject import market share in interim 2026 compared to interim 2025. Petitioners Prehearing Br. at 16-17.

We find that the lower level of subject imports in interim 2026 compared to interim 2025, lower U.S. shipments of subject imports comparing the periods, and the lower subject import market share, were related to the pendency of the investigations. These declines, which occurred in 2026 after the filing of the petitions, contrast sharply with the steady growth of subject imports, U.S. shipments of subject imports, and subject import market share observed during the 2023 to 2025 calendar year portion of the investigation period. Testimony provided by Petitioners corroborates that the issuance of (Continued...)

We find that the volume of subject imports and the increase in volume were significant in absolute terms and relative to consumption in the United States during the investigation period.

D. Price Effects of the Subject Imports

Section 771(7)(C)(ii) of the Tariff Act provides that, in evaluating the price effects of the subject imports, the Commission shall consider whether:

(I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and

(II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.¹²⁰

As previously discussed in section VI.B.3 above, we find that the domestic like product and subject imports have a moderately high degree of substitutability, and that price is an important factor in purchasing decisions.

The Commission collected quarterly quantity and f.o.b. value pricing data on sales of three types of lysine products shipped to unrelated U.S. customers during the POI.¹²¹ Four U.S. producers and nine U.S. importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.¹²² The pricing data reported by these firms accounted for virtually all of the U.S. producers' U.S. commercial shipments of domestically produced lysine in 2025 and 86.8 percent of U.S. shipments of

preliminary duties by Commerce significantly contributed to these trends. *Id.* at Exhs. 1 at ¶ 6 (Benson Decl.), 2 at ¶ 3 (Nel Decl.).

Having attributed these changes in subject import volume and market share to the issuance by Commerce of preliminary duties, and thus determined that these changes are related to the pendency of the investigations, we attach reduced weight to these data in interim 2026.

¹²⁰ 19 U.S.C. § 1677(7)(C)(ii).

¹²¹ CR/PR at 5.5. The three pricing products are:

Product 1. Dry, Animal feed grade L-lysine HCl (CAS: 657-27-2) with a minimum of 40.0 percent lysine by weight, in HCl equivalent;

Product 2. Dry, Animal feed grade L-lysine sulfate (CAS: 60343-69-3) with a minimum of 40.0 percent lysine by weight, in HCl equivalent; and

Product 3. Liquid, Animal feed grade L-lysine (CAS: 56-87-1) with a minimum of 40.0 percent lysine by weight, in HCl equivalent. *Id.*

¹²² CR/PR at 5.5.

subject imports.¹²³ The limited reported sales of pricing product 2 from China allowed for only a single quarterly comparison during the investigation period.¹²⁴ Additionally, there were no reported sales of pricing product 3 from China during the period examined.¹²⁵

The pricing data show that subject imports undersold the domestic like product in 13 of 14 quarterly instances, or 92.9 percent of the time, with margins of underselling ranging from *** to *** percent and averaging *** percent.¹²⁶ In the remaining instance, subject import overselling was *** percent.¹²⁷ On a short ton lysine HCl equivalent basis, the volume of subject import sales in quarters with underselling was *** short tons, representing 99.6 percent of the total volume of subject imports in the pricing products, compared to *** short tons in the quarters with overselling, representing the remaining 0.4 percent of the total.¹²⁸ The margins of underselling increased at the end of the POI.¹²⁹ Thus, the quarterly price comparison data show that subject imports of pricing product 1 predominantly undersold the domestic like product throughout the period examined.

We have also examined average unit values (“AUVs”) of U.S. producers’ and subject importers’ U.S. shipments. In 2025, AUVs of U.S. importers’ commercial U.S. shipments for all in-scope lysine were between *** percent to *** percent lower than the AUVs of the domestic industry’s commercial U.S. shipments of domestically produced lysine.¹³⁰

¹²³ CR/PR at 5.5.

¹²⁴ CR/PR at Table 5.5.

¹²⁵ CR/PR at Table 5.6.

¹²⁶ CR/PR at Table 5.9. Subject imports undersold the domestic like product in all 13 available quarterly comparisons for sales of pricing product 1.

¹²⁷ CR/PR at Table 5.9. Subject imports oversold the domestic like product in the one available quarterly comparison for sales of pricing product 2.

¹²⁸ *Derived from* CR/PR Table 5.9.

¹²⁹ CR/PR at Table 5.4.

¹³⁰ *Compare* CR/PR at Table 3.10 *with* Table 4.3. We note that the domestic industry’s net sales AUVs were influenced by *** substantial volume of exports, which were significantly lower than its U.S. shipments AUV. *Id.* at 3.11 n.7 and Table 3.9. ***. *Id.* We also note the possibility for product mix to affect this comparison, with subject imports predominately comprising lysine in dry lysine HCl form whereas the majority of U.S. producers’ U.S. shipments are of lysine in liquid form. *Id.* We nevertheless find these data probative of underselling, as our price measurements, based on a lysine HCl equivalent, account for the different forms of lysine in the U.S. market. Additionally, testimony from domestic industry representatives at the staff conference indicates that “all imports from China have been in dry form because it is most efficient to ship dry product,” Conf. Tr. at 24 (Rosenthal), and other record information shows that U.S. purchasers imported lysine exclusively in dry form, and that U.S. purchasers and their customers “sometimes” or “never” based their purchasing decisions on the specific form of lysine. CR/PR at 2.14 and Table 2.13. Accordingly, our pricing data controls for differences in form, while other record information indicates that form does not generally impact interchangeability among the various forms of lysine sold in the U.S. market.

We have also considered information regarding lost sales. Sixteen of 23 responding U.S. purchasers reported purchasing subject imports instead of the domestic product during the POI.¹³¹ Twelve of these purchasers reported that subject imports were priced lower than the domestic like product, with nine reporting that they purchased subject imports instead of the domestic like product based on price, accounting for *** short ton lysine HCl equivalent.¹³² This total represented *** percent of total reported purchases of subject imports (*** short tons lysine HCl equivalent) over the full years of the investigation period and *** percent of the total volume of purchases of lysine (*** short tons lysine HCl equivalent) from all sources reported by purchasers over the full years of the period of investigation.¹³³

Based on the moderately high degree of substitutability between subject imports and the domestic like product, the importance of price in purchasing decisions, the prevalence of underselling in the pricing data, the lost sales information, and the data showing that subject importers' U.S. shipment AUVs were substantially lower than the AUVs of U.S. producers' U.S. shipments, we find that subject imports significantly undersold the domestic like product. Subject import underselling enabled subject imports to gain market share at the direct expense of the domestic industry from 2023 to 2025.¹³⁴

We have also considered whether subject imports depressed or suppressed prices to a significant degree. Between the first quarter of 2023 and the first quarter of 2026, reported prices for domestically produced products 1 and 3 were, respectively, *** and *** percent higher at the end of the investigation period than at the beginning.¹³⁵ Prices for domestically produced product 2 declined by *** percent over the period examined.¹³⁶ Prices for product 1 imported from China, the only source for which pricing data were available throughout the period examined, declined by *** percent.¹³⁷ Additionally, we note that 3 of 11 responding U.S. purchasers reported that U.S. producers lowered their prices by estimates of *** percent and *** percent during the period to compete with lower-priced subject imports.¹³⁸

The domestic industry's average ratio of COGS to net sales fluctuated from 2023 to 2025, from 96.7 percent in 2023, down to 94.1 percent in 2024, and back up to 96.8 percent in

¹³¹ CR/PR at Table 5.12.

¹³² CR/PR at Table 5.12.

¹³³ *Derived from* CR/PR at Tables 5.11, 5.12.

¹³⁴ As discussed above in Section V.B, subject imports gained *** percentage points of market share from 2023 to 2025, increasing their share of apparent U.S. consumption by quantity from *** percent in 2023 to *** percent in 2024, and *** percent in 2025. CR/PR at Tables 4.6, C.1.

¹³⁵ CR/PR Tables 5.7.

¹³⁶ CR/PR Tables 5.7.

¹³⁷ CR/PR at Table 5.7.

¹³⁸ CR/PR at Table 5.13.

2025.¹³⁹ On a short ton per lysine HCl equivalent basis, the domestic industry’s net sales AUV declined by \$100 per short ton (or by 6.3 percent) between 2023 and 2025, while its unit COGS declined by \$96 per short ton (or by 6.2 percent).¹⁴⁰ Total raw material costs were the largest component of the domestic industry’s COGS from 2023 to 2025 and the interim periods, accounting for 69.8 percent in 2023, 66.1 percent in 2024, and 60.2 percent in 2025.¹⁴¹ On a per-short ton lysine HCl equivalent basis, raw material costs consistently decreased from \$1,089 in 2023 to \$959 in 2024 (or by 11.8 percent), and further decreased to \$875 in 2025 (or by 8.8 percent).¹⁴² As a ratio to total net sales, moreover, raw material costs declined steadily from 68.4 percent in 2023 to 62.9 percent in 2024, and further declined to 58.7 percent in 2025.¹⁴³

In sum, we find that subject imports significantly undersold the domestic like product, which resulted in the domestic industry losing market share to subject imports during the investigation period. We accordingly find that subject imports had significant price effects.

E. Impact of the Subject Imports¹⁴⁴

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject imports, the Commission “shall evaluate all relevant economic factors which have a bearing on

¹³⁹ CR/PR at Tables 6.1, C.1. The domestic industry’s COGS-to-net-sales ratio was 97.9 percent in interim 2026 up from 86.2 percent in interim 2025. *Id.*

¹⁴⁰ CR/PR at Table 6.1. The domestic industry’s net sales AUV was \$95 per short ton (or 6.2 percent) lower in interim 2026 than in interim 2025, while its unit COGS increased by \$81 per short ton (or 6.1 percent). *Id.*

¹⁴¹ CR/PR at Table 6.1. Total raw materials accounted for 62.7 percent of COGS in interim 2026, compared to 64.0 percent in interim 2025. *Id.*

¹⁴² CR/PR at Table 6.1. Unit raw material costs were 4.7 percent higher in interim 2026 at \$887 per short tons than in interim 2025, at \$855 short tons. *Id.*

¹⁴³ CR/PR at Table 6.1. The ratio of raw materials to net sales was higher in interim 2026, at 61.8 percent, than in interim 2025, at 55.9 percent. *Id.*

¹⁴⁴ The statute instructs the Commission to consider the “magnitude of the dumping margin” in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determination of sales at LTFV, Commerce found antidumping duty margins of 73.55 percent for 19 individual Chinese producers, and 139.83 percent for five individual Chinese producers and the China-Wide entity. CR/PR at Table 1.3; *L-Lysine From the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value*, 91 Fed. Reg. 46,406 (July 23, 2026). We consider in our analysis the fact that Commerce has made final findings that all subject producers in China are selling subject imports in the United States at LTFV. In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant underselling of subject imports, described in both the price effects discussion and below, is particularly probative to an assessment of the impact of the subject imports.

the state of the industry.”¹⁴⁵ These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debts, research and development, and factors affecting domestic prices. No single factor is dispositive, and all relevant factors are considered “within the context of the business cycle and conditions of competition that are distinctive to the affected industry.”¹⁴⁶

The domestic industry’s trade, employment, and financial indicators generally declined during the investigation period, driven by the domestic industry’s loss of market share and domestic sales volume during the period examined.

The domestic industry’s trade indicators declined irregularly from 2023 to 2025. Its practical capacity declined by 1.0 percent.¹⁴⁷ Its production declined by 3.9 percent.¹⁴⁸ Its practical capacity utilization rate declined by 2.4 percentage points.¹⁴⁹ The domestic industry’s total U.S. shipments by quantity declined from 2023 to 2025.¹⁵⁰ Further, as discussed in Section V.B.2 above, its market share declined during this period.¹⁵¹ The domestic industry’s end-of-

¹⁴⁵ 19 U.S.C. § 1677(7)(C)(iii); *see also* SAA at 851 and 885 (“In material injury determinations, the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.”).

¹⁴⁶ 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

¹⁴⁷ CR/PR at Tables 3.5, C.1. On a short ton lysine HCl equivalent basis, the domestic industry’s practical capacity for lysine was increased from 485,620 short tons in 2023 to 488,928 short tons in 2024, then declined to 480,928 short tons in 2025. *Id.* It was 121,756 short tons in interim 2026, down from 123,032 short tons in interim 2025. *Id.*

¹⁴⁸ CR/PR at Tables 3.5, C.1. On a short ton lysine HCl equivalent basis, the domestic industry’s production increased from 390,855 short tons in 2023 to 399,256 short tons in 2024, then declined to 375,673 short tons in 2025. *Id.* It was 93,089 short tons in interim 2026, down from 94,259 short tons in interim 2025. *Id.*

¹⁴⁹ CR/PR at Tables 3.5, C.1. The domestic industry’s practical capacity utilization rate increased from 80.5 percent in 2023 to 81.7 percent in 2024, then declined to 78.1 percent in 2025. *Id.* It was 76.5 percent in interim 2026, down slightly from 76.6 percent in interim 2025. *Id.*

¹⁵⁰ CR/PR at Tables 3.9, C.1. On a short ton lysine HCl equivalent basis, the domestic industry’s total U.S. shipments declined from 306,011 short tons in 2023 to 299,694 short tons in 2024, and 276,441 short tons in 2025. *Id.* They were 75,041 short tons in interim 2026, up from 69,194 short tons in interim 2025. *Id.*

¹⁵¹ CR/PR at Tables 4.6, C.1. The domestic industry’s market share declined from *** percent in 2023 to *** percent in 2024, and *** percent in 2025. *Id.* It was *** percent in interim 2026, up from *** percent in interim 2025. *Id.*

period inventories increased during the investigation period by quantity, in absolute terms and as a ratio to total shipments.¹⁵²

The domestic industry's employment indicators were mixed from 2023 to 2025. Several indicators deteriorated during this period, including the number of production-related workers ("PRWs"),¹⁵³ total hours worked,¹⁵⁴ and wages paid.¹⁵⁵ Hours worked per PRW,¹⁵⁶ hourly wages,¹⁵⁷ and productivity,¹⁵⁸ improved. Unit labor costs¹⁵⁹ were virtually unchanged.

Most of the domestic industry's financial indicators deteriorated during the investigation period. Its net sales revenue declined by *** percent from 2023 to 2025.¹⁶⁰ Its

¹⁵² CR/PR at Tables 3.11, C.1. On a short ton lysine HCl equivalent basis, the domestic industry's end-of-period inventories increased from 27,784 short tons in 2023 to 28,559 short tons in 2024, and 33,509 short tons in 2025. *Id.* They were higher in interim 2026, at 32,913 short tons, up from 24,193 short tons in interim 2025. *Id.*

The domestic industry's ratio of end-of-period inventories to total shipments increased from *** percent in 2023 to *** percent in 2024, and *** percent in 2025. *Id.* It was *** percent in interim 2026, up from *** percent in interim 2025. *Id.*

¹⁵³ CR/PR at Tables 3.12, C.1. The number of PRWs steadily declined from 665 in 2023 to 575 in 2024, and 537 in 2025. It was 513 in interim 2026, down from 531 in interim 2025. *Id.*

¹⁵⁴ CR/PR at Tables 3.12, C.1. Total hours worked declined from 1.1 million in 2023 to 960,000 in 2024, then increased to 1.0 million in 2025, a level 7.9 percent below that observed in 2023. *Id.* They were 240,000 in interim 2026, down from 256,000 in interim 2025. *Id.*

¹⁵⁵ CR/PR at Tables 3.12, C.1. Wages paid declined from \$43.2 million in 2023 to \$40.6 million in 2024, then increased to \$41.3 million in 2025, a level 4.3 percent below that observed in 2023. *Id.* They were \$10.7 million in interim 2026, up from \$10.6 million in interim 2025. *Id.*

¹⁵⁶ CR/PR at Tables 3.12, C.1. Hours worked per PRW increased from 1,656 in 2023 to 1,670 in 2024, then 1,888 in 2025. They were 468 in interim 2026, down from 482 in interim 2025. *Id.*

¹⁵⁷ CR/PR at Tables 3.12, C.1. Hourly wages increased from \$39.22 in 2023 to \$42.29 in 2024, then declined to \$40.76 in 2025, a level 3.9 percent above that observed in 2023. *Id.* They were \$44.59 in interim 2026, up from \$41.55 in interim 2025. *Id.*

¹⁵⁸ CR/PR at Tables 3.12, C.1. On a short ton lysine HCl equivalent per 1,000 hours basis, productivity increased from 355.0 in 2023 to 415.9 in 2024, then declined to 370.5 in 2025, a level 4.4 percent above that observed in 2023. *Id.* It was 387.9 in interim 2026, up from 368.2 in interim 2025. *Id.*

¹⁵⁹ CR/PR at Tables 3.12, C.1. On a dollars per short ton lysine HCl equivalent basis, unit labor costs declined from \$110 in 2023 to \$102 in 2024, then increased to \$110 in 2025. *Id.* They were \$115 in interim 2026, up from \$113 in interim 2025. *Id.*

¹⁶⁰ CR/PR at Tables 6.1, C.1. The domestic industry's net sales revenues declined from \$*** in 2023 to \$*** in 2024, and \$*** in 2025. *Id.* They were \$*** in interim 2026, down from \$***. *Id.*

gross profits declined irregularly by *** percent during this period.¹⁶¹ It reported operating¹⁶² and net¹⁶³ *** through most of the investigation period. Its ratios of operating loss to net sales¹⁶⁴ and net *** to net sales¹⁶⁵ improved during the period examined.

The domestic industry's capital expenditures increased irregularly during the investigation period.¹⁶⁶ Its research and development ("R&D") expenditures also increased irregularly during this period.¹⁶⁷ Its net assets declined throughout the period examined.¹⁶⁸ Its return on assets ("ROA") increased irregularly during this period.¹⁶⁹ Finally, several U.S. producers reported negative effects on investment and growth due to subject imports.¹⁷⁰

As discussed above, a significant and increasing volume of subject imports significantly undersold the domestic like product, which caused a market share shift from the domestic industry to subject imports from 2023 to 2025. Consequently, the domestic industry's trade indicators declined, as its end-of-period inventories accumulated throughout the period examined. The domestic industry's declining trade indicators translated directly into reductions

¹⁶¹ CR/PR at Tables 6.1, C.1. The domestic industry's gross profits increased from \$*** in 2023 to \$*** in 2024, then declined to \$*** in 2025. *Id.* They were \$*** in interim 2026, down from \$*** in interim 2025. *Id.*

¹⁶² CR/PR at Tables 6.1, C.1. The domestic industry's operating income increased from a *** of *** in 2023 to a *** of \$*** in 2024, then declined to a *** of *** in 2025. *Id.* It was *** in interim 2026, down from \$*** in interim 2025. *Id.*

¹⁶³ CR/PR at Tables 6.1, C.1. The domestic industry's net *** decreased from *** in 2023 to *** in 2024, then increased to *** in 2025. *Id.* It was *** in interim 2026, down from \$*** in interim 2025. *Id.*

¹⁶⁴ CR/PR at Tables 6.1, C.1. The domestic industry's ratio of operating income/loss to net sales increased from negative 2.7 percent in 2023 to 0.1 percent in 2024, then declined to negative 1.6 percent in 2024. *Id.* It was negative 2.6 percent in interim 2026, down from 8.6 percent in interim 2025. *Id.*

¹⁶⁵ CR/PR at Tables 6.1, C.1. The domestic industry's ratio of net income*** to net sales increased from *** percent in 2023 to *** percent in 2024, then declined to *** percent in 2025. *Id.* It was *** percent in interim 2026, down from *** percent in interim 2025. *Id.*

¹⁶⁶ CR/PR at Tables 6.4, C.1. The domestic industry's capital expenditures increased from \$8.3 million in 2023 to \$18.8 million in 2024, then declined to \$13.5 million in 2025, a level 62.3 percent higher than that observed in 2023. They were \$2.0 million in interim 2026, down from \$2.5 million in interim 2025. *Id.*

¹⁶⁷ CR/PR at Tables 6.6, C.1. The domestic industry's R&D expenditures declined from \$*** in 2023 to \$*** in 2024, then increased to \$*** in 2025, a level *** percent above that observed in 2023. *Id.* They were \$*** in interim 2026, down from \$*** in interim 2025. *Id.*

¹⁶⁸ CR/PR at Tables 6.8, C.,1. The domestic industry's net assets declined from \$395.9 million in 2023 to \$385.9 million in 2024, and \$358.9 million in 2025. *Id.*

¹⁶⁹ CR/PR at Table 6.9. The domestic industry's ROA increased from *** percent in 2023 to *** percent in 2024, then declined to *** percent in 2025, a level *** percentage points above that observed in 2023. *Id.*

¹⁷⁰ CR/PR at Tables 6.11, 6.12.

in its workforce and declines to its financial performance indicators, including its net sales revenues, gross profits, operating income, and net income. On this basis, we find that subject imports had a significant impact on the domestic industry.

We have also considered whether there are other factors that may have had an adverse impact on the domestic industry during the investigation period to ensure that we are not attributing injury from such other factors to subject imports. Neither demand trends nor nonsubject imports explain the domestic industry's declining performance.

Apparent U.S. consumption increased irregularly by *** percentage points from 2023 to 2025, despite which U.S. producers reported declining production and commercial U.S. shipments due to the market share shift from the domestic industry to subject imports.¹⁷¹

As discussed in Section VI.B.2 above, nonsubject imports were minimally present in the U.S. market from 2023 to 2025.¹⁷² They increased in volume in interim 2026 to supply *** percent of apparent U.S. consumption after subject imports receded from the market.¹⁷³ Moreover, nonsubject imports entered the U.S. market at unit values that exceeded those of subject imports in all segments of the investigation period except for 2024, and were higher than the U.S. shipments AUVs reported by the domestic industry in 2023 and 2025.¹⁷⁴

We are also unpersuaded by Beans Nutrition's argument that subject imports were pulled into the U.S. market because the domestic industry was operating at full capacity throughout the investigation period, and was therefore constrained from supplying more of the

¹⁷¹ CR/PR at Tables 4.6, C.1. While apparent U.S. consumption increased by *** percent from 2023 to 2024, the domestic industry's production increased by only 2.1 percent during this period, and its U.S. shipments declined by 2.1 percent. *Id.* at Tables 3.5, 3.9, 4.6, C.1. Conversely, when apparent U.S. consumption declined by *** percent from 2024 to 2025, the industry's production declined by 5.9 percent, and its U.S. shipments declined by 7.8 percent. *Id.* Thus, the industry was unable to capitalize on sales opportunities in a growing market at the start of the period examined, and experienced declines that outpaced the contraction in the market towards the end of the period.

We also note that Ajinomoto attributed its exit from most of the U.S. lysine market towards the end of the investigation period to *** which were virtually all shipped from China during the investigation period. *Id.* at Table 3.4. The *** percent of market share Ajinomoto vacated from 2024 to 2025 was absorbed by subject imports and U.S. producers *** and ***. *Id.* Moreover, the remaining U.S. producers had unused capacity even without Ajinomoto, and capacity utilization declined in 2025 and interim 2026, suggesting that the remaining U.S. producers would have been able to replace Ajinomoto. *Id.* at Table 3.5. We thus find that Ajinomoto's exit from the market was not an independent or intervening event that caused the domestic industry to lose market share in the lysine market from 2024 to 2025.

¹⁷² CR/PR at Tables 4.6, C.1.

¹⁷³ CR/PR at Tables 4.6, C.1.

¹⁷⁴ CR/PR at Tables 3.9, 4.2, C.1. As we stated above in Section VI.C, we have attributed changes in subject import volume and market share to the pendency of the investigations. We thus attach reduced weight to volume and market share trends in interim 2026.

U.S. market.¹⁷⁵ Although we recognize, as discussed above in Section V.B.2, that certain U.S. purchasers reported they experienced supply constraints with respect to the domestic industry, we find that the record does not support a finding that U.S. producers were significantly constrained in their ability to supply the market during the period of investigation. As discussed above, the domestic industry possessed excess capacity from which it could have supplied additional lysine to the U.S. market throughout the period of investigation.¹⁷⁶ Additionally, U.S. producers reported significant and increasing end-of-period inventories throughout this period.¹⁷⁷ Finally, the vast majority of responding firms reported that they did not experience supply constraints during the period examined, and several U.S. importers also reported experiencing supply constraints in connection with logistics, such as freight costs and long lead times and manufacturing constraints from foreign producers, rather than U.S. producers.^{178 179}

In sum, we find that a significant and increasing volume of lower priced subject imports gained market share at the domestic industry's expense, which significantly impacted the industry by causing declines to its trade, employment, and financial performance.

VI. Conclusion

For the reasons stated above, we determine that an industry in the United States is materially injured by reason of subject imports of lysine from China that are sold in the United States at LTFV and subsidized by the government of China.

¹⁷⁵ Beans Nutrition Posthearing Statement at 1-6.

¹⁷⁶ CR/PR at Tables 3.5, C.1.

¹⁷⁷ CR/PR at Tables 3.11, C.1.

¹⁷⁸ CR/PR at 2.6 and Table 2.6. As previously stated in in Section V.B.2, three of four U.S. responding producers, 16 of 19 responding U.S. importers, and 14 of 23 responding U.S. purchasers reported that they did not experience supply constraints during the investigation period. *Id.*

¹⁷⁹ Petitioners dispute the assertion by U.S. purchaser ***, that it was put on allocation by Evonik towards the end of the POI. See *** U.S. purchaser questionnaire response, EDIS Doc. No. 885323 (June 16, 2026) at 14; see also Petitioners Prehearing Br. at 13, Exhs. 1 ¶ 5 (Benson Decl. (ADM)), 3 ¶ 8 (Choi Decl. (CJ Bio)). Petitioners argue that ***. *Id.* at 12. *** also stated in its response that *** in 2026. *** U.S. purchaser questionnaire response, EDIS Doc. No. 885323 (June 16, 2026) at 14. Although Petitioners do not directly address this statement, they claim that ADM and CJ Bio fulfilled all customer orders throughout the investigation period and generally refute the contention that the domestic industry placed any customer on allocation or was otherwise constrained from supplying lysine to purchasers during the period. Petitioners Prehearing Br. at 13, Exhs. 1 ¶ 5 (Benson Decl. (ADM)), 3 ¶ 8 (Choi Decl. (CJ Bio)).

Part 1: Introduction

Background

These investigations result from petitions filed with the U.S. Department of Commerce (“Commerce”) and the U.S. International Trade Commission (“USITC” or “Commission”) by Archer Daniels Midland Company (“ADM”), Chicago, Illinois; CJ Bio America, Inc., an Iowa Corporation (“CJ Bio”), Fort Dodge, Iowa; and Evonik Corporation (“Evonik”), Piscataway, NJ, on May 28, 2025, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized and less-than-fair-value (“LTFV”) imports of l-lysine (“lysine”)¹ from China. Table 1.1 presents information relating to the background of these investigations.^{2 3}

Table 1.1 Lysine: Information relating to the background and schedule of this proceeding

Effective date	Action
May 28, 2025	Petitions filed with Commerce and the Commission; institution of the Commission's investigations (90 FR 23565, June 3, 2025)
June 17, 2025	Commerce's notice of initiation of its antidumping duty investigation (90 FR 26782, June 24, 2025) and countervailing duty investigation (90 FR 26799, June 24, 2025)
July 11, 2025	Commission's preliminary determinations (90 FR 33394, July 17, 2025)
January 22, 2026	Commerce's preliminary countervailing duty determination (91 FR 2745, January 22, 2026)
March 6, 2026	Commerce's preliminary antidumping duty determination (91 FR 11030, March 6, 2026); scheduling of final phase of Commission investigations (91 FR 16967, April 3, 2026)
July 14, 2026	Scheduled date for the Commission's hearing (91 FR 16967, April 3, 2026); hearing cancelled, effective July 10, 2026 (91 FR 43667, July 16, 2026)
July 23, 2026	Commerce's final countervailing duty determination (91 FR 46399, July 23, 2026); and Commerce's final antidumping duty determinations (91 FR 46406, July 23, 2026)
August 18, 2026	Commission's vote
September 2, 2026	Commission's views

¹ See the section entitled “The subject merchandise” in Part 1 of this report for a complete description of the merchandise subject in this proceeding.

² Pertinent Federal Register notices are referenced in appendix A and may be found at the Commission's website (www.usitc.gov).

³ Appendix B presents the Federal Register notice of the cancellation of the Commission's hearing.

Statutory criteria

Section 771(7)(B) of the Tariff Act of 1930 (the “Act”) (19 U.S.C. § 1677(7)(B)) provides that in making its determinations of injury to an industry in the United States, the Commission—

shall consider (I) the volume of imports of the subject merchandise, (II) the effect of imports of that merchandise on prices in the United States for domestic like products, and (III) the impact of imports of such merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . . may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.

Section 771(7)(C) of the Act (19 U.S.C. § 1677(7)(C)) further provides that—⁴

In evaluating the volume of imports of merchandise, the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States is significant.. . .In evaluating the effect of imports of such merchandise on prices, the Commission shall consider whether. . .(I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.. . . In examining the impact required to be considered under subparagraph (B)(i)(III), the Commission shall evaluate (within the context of the business cycle and conditions of competition that are distinctive to the affected industry) all relevant economic factors which have a bearing on the state of the industry in the United States, including, but not limited to. . . (I) actual and potential decline in output, sales, market share, gross profits, operating profits, net profits, ability to service debt, productivity, return on investments, return on assets, and utilization of capacity, (II) factors affecting domestic prices, (III) actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, (IV) actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative

⁴ Amended by PL 114—27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

or more advanced version of the domestic like product, and (V) in {an antidumping investigation}, the magnitude of the margin of dumping.

In addition, Section 771(7)(J) of the Act (19 U.S.C. § 1677(7)(J)) provides that—⁵

(J) EFFECT OF PROFITABILITY.—The Commission may not determine that there is no material injury or threat of material injury to an industry in the United States merely because that industry is profitable or because the performance of that industry has recently improved.

Organization of report

Part 1 of this report presents information on the subject merchandise, subsidy rates/dumping margins, and domestic like product. Part 2 of this report presents information on conditions of competition and other relevant economic factors. Part 3 presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. Parts 4 and 5 present the volume of subject imports and pricing of domestic and imported products, respectively. Part 6 presents information on the financial experience of U.S. producers. Part 7 presents the statutory requirements and information obtained for use in the Commission’s consideration of the question of threat of material injury as well as information regarding nonsubject countries.

⁵ Amended by PL 114—27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

Market summary

Lysine is an amino acid that is added to animal feed to promote the biosynthesis of proteins. It is typically produced through fermentation of a strain of bacteria with a supply of dextrose. Lysine is added to animal feed to achieve the desired protein balance and blend. The U.S. producers of lysine are ADM, CJ America, Evonik, and Ajinomoto Health & Nutrition North America, Inc. (“Ajinomoto”), while leading producers of lysine in China include Meihua Group, Eppen Bio, and Fufeng Group Co., Ltd. The leading U.S. importers of lysine from China are ***. Leading importers of product from nonsubject countries (Canada and South Korea) include ***. U.S. purchasers of lysine are distributors and end users in the agricultural industries using lysine in animal feed; large purchasers of lysine include ***.

Apparent U.S. consumption of lysine totaled approximately *** short tons of lysine monohydrochloride (“lysine HCl”) equivalent (\$***) in 2025. Currently, four firms are known to produce lysine in the United States. U.S. producers’ U.S. shipments of lysine totaled *** short tons lysine HCl (\$***) in 2025 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled *** short tons lysine HCl (\$***) in 2025 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled *** short tons lysine HCl (\$***) in 2025 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, table C.1. The Commission’s questionnaires collected data for the years 2023 to 2025 and interim periods January through March of 2025 (“interim 2025”) and January through March of 2026 (“interim 2026”). Except as noted, U.S. industry data are based on questionnaire responses of four firms that accounted for all U.S. production of lysine during 2025. U.S. imports are based on official U.S. import statistics of the U.S. Department of Commerce Census Bureau, adjusted to include other HTS numbers as reported in Commission questionnaires.

Previous and related investigations

Lysine has not been the subject of prior antidumping and/or countervailing duty investigations in the United States.

Nature and extent of subsidies and sales at LTFV

Subsidies

On July 23, 2026, Commerce published a notice in the Federal Register of its final determination of countervailable subsidies for producers and exporters of lysine from China.⁶ Table 1.2 presents Commerce's findings of subsidization of lysine in China.

Table 1.2 Lysine: Commerce's final subsidy determination with respect to imports from China

Entity	Final countervailable subsidy rate (percent)
Inner Mongolia Eppen Biotech Co. Ltd. ⁷	48.21
Helionjiang Wanli Runda Biotechnology Co., Ltd	82.11
Shouguang Golden-land Industry & Trading Co Ltd	82.11
All others	48.21

Source: 91 FR 46399, July 23, 2026.

Note: For further information on programs determined to be countervailable, see Commerce's associated Issues and Decision Memorandum.

Sales at LTFV

On July 23, 2026, Commerce published a notice in the Federal Register of its final determination of sales at LTFV with respect to imports from China.⁸ Table 1.3 presents Commerce's dumping margins with respect to imports of product from China.

⁶ 91 FR 46399, July 23, 2026.

⁷ Commerce has found the following companies to be cross-owned with Inner Mongolia Eppen: Heilongjiang Eppen Trading Co., Ltd.; Heilongjiang Eppen Biotech Co., Ltd.; Heilongjiang Eppen Energy Co.; Ningxia Eppen Biotech Co. Ltd.; Star Lake Bioscience Co., Ltd Zhaoqing Guangdong; and Guangdong Guangxin Holdings Group Ltd.

⁸ 91 FR 46406, July 23, 2026.

Table 1.3 Lysine: Commerce's final weighted-average LTFV margins with respect to imports from China

Exporter	Producer	Final dumping margin (percent)
Anhui BBBCA Biochemical Co., Ltd.	Zhengzhou Longgu Trading Co., Ltd.	139.83
Eppen Asia Pte. Ltd./ Heilongjiang Eppen Biotech Co., Ltd./ Inner Mongolia Eppen Biotech Co., Ltd./ Ningxia Eppen Biotech Co., Ltd.	Zhengzhou Longgu Trading Co., Ltd.	139.83
Shouguang Golden Corn Biotechnological Co., Ltd.	Zhengzhou Longgu Trading Co., Ltd.	139.83
Shouguang Golden Corn Biotechnological Co., Ltd.,	Zhengzhou Heshu Stockbreeding Development Co., Ltd.	139.83
Eppen Asia Pte. Ltd./ Heilongjiang Eppen Biotech Co., Ltd./ Inner Mongolia Eppen Biotech Co., Ltd./ Ningxia Eppen Biotech Co., Ltd.	Zhengzhou Heshu Stockbreeding Development Co., Ltd.	139.83
Anhui BBBCA Biochemical Co., Ltd.	Agromate Sg Pte. Ltd.	73.55
Heilongjiang Wanlirunda Biotechnology Co., Ltd.	Agromate Sg Pte. Ltd.	73.55
Eppen Asia Pte. Ltd./ Heilongjiang Eppen Biotech Co., Ltd./ Inner Mongolia Eppen Biotech Co., Ltd./ Ningxia Eppen Biotech Co., Ltd.	Agromate Sg Pte. Ltd.	73.55
Shouguang Golden Corn Biotechnological Co., Ltd.	Ainore (Tianjin) Trading Co., Ltd.	73.55
Heilongjiang Wanlirunda Biotechnology Co., Ltd.	Ainore (Tianjin) Trading Co., Ltd.	73.55
Anhui BBBCA Biochemical Co., Ltd.	Aollen Biotech Co., Ltd.	73.55
Changchun Dahe Bio Technology Development Co., Ltd.	Aollen Biotech Co., Ltd.	73.55
Eppen Asia Pte. Ltd./ Heilongjiang Eppen Biotech Co., Ltd./ Inner Mongolia Eppen Biotech Co., Ltd./ Ningxia Eppen Biotech Co., Ltd.	Aollen Biotech Co., Ltd.	73.55
Heilongjiang Wanlirunda Biotechnology Co., Ltd.	Aollen Biotech Co., Ltd.	73.55
Henan Jinyufeng Biotechnology Co., Ltd.	Aollen Biotech Co., Ltd.	73.55
Jilin Meihua Amino Acid Co., Ltd.	Aollen Biotech Co., Ltd.	73.55
Qiqihar Longjiang Fufeng Biotechnologies Co., Ltd.	Aollen Biotech Co., Ltd.	73.55

Exporter	Producer	Final dumping margin (percent)
Shouguang Golden Corn Biotechnological Co., Ltd.	Aollen Biotech Co., Ltd.	73.55
Zhucheng Dongxiao Biotechnology Co., Ltd.	Aollen Biotech Co., Ltd.	73.55
Eppen Asia Pte. Ltd./ Heilongjiang Eppen Biotech Co., Ltd./ Inner Mongolia Eppen Biotech Co., Ltd./ Ningxia Eppen Biotech Co., Ltd.	Pegasus Ltd.	73.55
Shandong Shouguang Juneng Golden Corn Development Co., Ltd	Pegasus Ltd.	73.55
Qiqihar Longjiang Fufeng Biotechnologies Co., Ltd.	Pegasus Ltd.	73.55
Qiqihar Longjiang Fufeng Biotechnologies Co., Ltd.	Qiqihar Longjiang Fufeng Biotechnologies Co., Ltd.	73.55
Shouguang Golden Corn Biotechnological Co., Ltd.	Shouguang Golden Corn Biotechnological Co., Ltd.	73.55
All others		139.83

Source: 91 FR 46406, July 23, 2026.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:⁹

The scope of this investigation covers animal feed grade L-lysine (lysine). Lysine is an essential amino acid added to animal feed that is used in the biosynthesis of proteins. The scope covers lysine regardless of form, including lysine monohydrochloride, also referred to as lysine HCL, lysine sulfate, and liquid lysine. The scope includes lysine that has been coated or encapsulated for use with ruminants to ensure bioavailability.

Lysine HCL in the dry form has the molecular formula $C_6H_{14}N_2O_2HCl$. The Chemical Abstracts Service (CAS) registry number for lysine HCL is 657-27-2. Lysine HCL contains a minimum of 78 percent lysine by weight, as well as additional amino acids, carbohydrates, mineral salts, and organic acids. Lysine sulfate is the sulfate salt of lysine, and in the dry form it has the molecular formula $C_6H_{16}N_2O_6S$. The CAS registry number for lysine sulfate is 60343-69-3. Lysine sulfate typically contains approximately 40-70 percent lysine by weight, as well as additional amino acids, carbohydrates, mineral salts, and organic acids. Liquid lysine is a concentrated form of lysine in an aqueous solution with the molecular formula $C_6H_{14}N_2O_2$. The CAS registry number for liquid lysine is 56-87-1. Liquid lysine normally contains at least 50 percent lysine by weight, as well as additional amino acids, carbohydrates, mineral salts, and organic acids.

The scope includes animal feed grade lysine that is combined with other products, including for example, by mixing, blending, compounding, or granulating (e.g., base mixes, premixes, and concentrates). For such combined products, only the lysine component is covered by the scope of this investigation.

Subject merchandise also includes lysine that has been processed in a third country, including by commingling, diluting, adding or removing additives, refining, converting from liquid to dry or dry to liquid form, coating or encapsulating, or performing any processing that would not otherwise remove the merchandise from the scope of the investigation if performed in the subject country.

⁹ 91 FR 46399, July 23, 2026; 91 FR 46406, July 23, 2026.

Tariff treatment

Lysine is imported under Harmonized Tariff Schedule of the United States (“HTS”) statistical reporting number 2922.41.0090. The general rate of duty is 3.7 percent ad valorem for HTS subheading 2922.41.00.¹⁰ Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Below is a summary of additional tariffs applied to lysine from China. Table 1.4 provides a summary of additional tariffs in place as of June 11, 2026. Historical information is summarized beneath the table.

Table 1.4 Lysine: Additional tariffs on imports originating in China as of June 11, 2026

Duty rates in percent ad valorem

Additional tariff	China
Section 301	NA
Section 122	NA
Total additional ad valorem rate	0

Source: Federal Register notices and other sources cited in this section (Tariff treatment).

Note: For the purposes of this table, “not applicable” is shown as “NA.” This applies when the subject product from that subject country is not subject to the tariff for any reason.

Note: Duty rates in the table reflect the duty rates as of the writing of this report. See the text below for historical changes to the additional tariffs.

Section 301 tariffs

Lysine originating in China is not subject to an additional duty under section 301 of the Trade Act of 1974.¹¹

¹⁰ The subject merchandise in this proceeding may also be imported under the following HTS statistical reporting numbers: 2922.41.0010, 2922.49.4950, and 2309.90.9500. USITC, HTS (2026) Revision 12, Publication 5768, July 2026, pp. 23.6, 29.88, and 29.90.

¹¹ See also U.S. notes 20 and 31 to subchapter 3 of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2026) Revision 12, Publication 5768, July 2026, pp. 99.3.87 and 99.3.337.

Section 122 tariffs

Lysine originating in China is not subject to tariffs initiated in February 2026 under section 122 of the Trade Act of 1974.¹²

Tariffs initiated under the International Emergency Economic Powers Act (“IEEPA”)¹³

Effective February 20, 2026, all tariffs initiated under IEEPA were terminated. Below is a history of the IEEPA tariffs relevant to lysine originating in China that were in effect until February 20, 2026.¹⁴

Country-specific IEEPA tariffs

Effective February 4, 2025, lysine originating in China was subject to an additional 10 percent ad valorem duty under IEEPA, and on March 4, 2025, that additional duty increased to 20 percent ad valorem. However, effective November 10, 2025, that additional duty was reduced back to 10 percent. As noted previously, effective February 20, 2026, tariffs initiated under IEEPA and the associated duties imposed under IEEPA were terminated.¹⁵

¹² Lysine was included in a list of products not subject to section 122 tariffs. Section 122 authorizes the President to impose a temporary import surcharge for a period not exceeding 150 days unless such period is extended by an Act of the Congress. 91 FR 9339, February 25, 2026. See also HTS heading 9903.03.03 and U.S. note 2(aa)(ii) to subchapter 3 of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2026) Revision 12, Publication 5768, July 2026, pp. 99.3.51 and 99.3.418.

¹³ Multiple tariffs were enacted under the authority of the International Emergency Economic Powers Act (“IEEPA”), including tariffs that applied to countries that may not be subject in this proceeding. Tariffs specific to Canada, China, and Mexico were initiated in February 2025. Tariffs initiated in April 2025 under IEEPA were applied globally. Tariffs specific to Brazil were initiated in July 2025. Tariffs specific to India were initiated in August 2025 and terminated effective February 7, 2026. Tariffs under IEEPA were amended over time. All tariffs initiated under IEEPA were terminated effective February 20, 2026. 91 FR 9437, February 25, 2026.

¹⁴ 91 FR 9437, February 25, 2026.

¹⁵ 90 FR 9121, February 7, 2025; 90 FR 11426, March 6, 2025; 90 FR 11463, March 7, 2025; 90 FR 50725, November 7, 2025; 91 FR 9437, February 25, 2026. See also HTS heading 9903.01.20 and U.S. note 2(s) and HTS heading 9903.01.24 and U.S. note 2(u) to subchapter 3 of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2026) Revision 12, Publication 5768, July 2026, pp. 99.3.3, 99.3.4, 99.3.381, and 99.3.382.

Tariffs initiated in April 2025 under IEEPA

Lysine originating in China was not subject to tariffs initiated in April 2025 under IEEPA. As noted previously, effective February 20, 2026, tariffs initiated under IEEPA and the associated duties imposed under IEEPA were terminated.¹⁶

The product

Description and applications

Lysine is an essential amino acid that is often added to animal feed for swine, poultry, cows, and fish to help promote protein growth.¹⁷ Amino acids, the building blocks of proteins, have important physiological functions that aid in the growth and development of animals.¹⁸ In order to decrease the livestock industry's greenhouse gas (GHG) emissions, amino acids must be used to lower its reliance on crude protein.¹⁹

Animals whose diets consist mainly of grass or grain (e.g., corn or soybean meal) do not obtain the necessary amount of essential amino acids.²⁰ As a result, amino acids such as lysine

¹⁶ Lysine was included in a list of products in HTS U.S. note 2(v)(iii)(a) to subchapter III of chapter 99 that were not subject to tariffs initiated in April 2025 under IEEPA. 90 FR 15041, April 7, 2025; 91 FR 9437, February 25, 2026. See also HTS headings 9903.01.25 and 9903.01.32 and U.S. note 2(v)(iii)(a) to subchapter 3 of chapter 99 and related tariff provisions for this duty treatment. USITC, HTS (2026) Revision 12, Publication 5768, July 2026, pp. 99.3.5, 99.3.382, and 99.3.383.

¹⁷ Petition, vol. 1, pp. 1 and 6. There are 20 amino acids that make up proteins. An essential amino acid is one that the body cannot synthesize on its own; it must be obtained through the animal's food intake. Kansas State University, "Essential and non-essential amino acids," accessed June 10, 2025, https://www.ksu.edu/extension/swine/swinenutritionguide/general_nutrition_principles/essentialandnonessentialaminoacids.html.

¹⁸ Wu, "Dietary Requirements of Synthesizable Amino Acids by Animals: A Paradigm Shift in Protein Nutrition," *Journal of Animal Science and Biotechnology*, vol. 5 (34), June 14, 2014, pp. 1 and 9, <https://doi.org/10.1186/2049-1891-5-34>.

¹⁹ Kim, "Plant-Scale Circular Economy Using Biological Reuse of Electrolyte Residues in the Amino Acid Industry," *Bioengineering*, vol. 12 (24), December 30, 2024, p. 2, <https://doi.org/10.3390/bioengineering12010024>. The agricultural sector contributed 10 percent of all U.S. GHG emissions in 2022, and cattle, with their high-fiber diet, are the top agricultural source of GHG emissions worldwide. "Sources of Greenhouse Gas Emissions," U.S. EPA, accessed June 23, 2026, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>. Quinton, "Cows and Climate Change," UC Davis, June 27, 2019, <https://www.ucdavis.edu/food/news/making-cattle-more-sustainable>.

²⁰ The list of essential amino acids for animals includes cysteine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, tyrosine, and valine. Wu, "Dietary Requirements of Synthesizable Amino Acids by Animals: A Paradigm Shift in Protein Nutrition," *Journal of Animal Science and Biotechnology*, vol. 5 (34), June 14, 2014, pp. 8 and 9, <https://doi.org/10.1186/2049-1891-5-34>; Petition, vol. 1, p. 1.

are added to their diets in the form of an additive or supplement.²¹ Furthermore, lysine encourages calcium absorption and growth rate, especially in pigs where lysine acts as the primary growth factor and as the first limiting amino acid.²²

Animal feed grade lysine²³ corresponding to the scope of these investigations is typically produced in the following forms: lysine sulfate, liquid (base) lysine, and lysine monohydrochloride (lysine HCl).²⁴ Lysine can also be produced in either liquid or dry form (e.g., powder, granules, coated, or encapsulated).²⁵ Each form of lysine has its own distinct color and characteristics (see table 1.5). The encapsulated or coated forms of lysine are about the size of a pebble and are used to feed ruminants.²⁶ Although they account for less of the market, ruminants like cattle require lysine to be in the encapsulated form to avoid degradation of the amino acid by microbes in the rumen (i.e., the first stomach compartment in ruminants).²⁷

Despite the many forms of lysine, all the forms of lysine are interchangeable and can be utilized by all animal species, and the end use remains the same—an essential amino acid in animal feed.²⁸ The amount of lysine that is blended into animal feed can be adjusted based on the dietary requirements of the specific animal. There are no substitutes for lysine as an essential amino acid additive.²⁹

²¹ *Certain L-Lysine Feed Products, Their Methods of Production and Genetic Constructs for Production*, Inv. No. 337-TA-571 (Final), USITC Publication 4113, November 2009, p. 6.

²² Limiting amino acids are the relatively deficient amino acids in an animal's diet. Proteins can only be synthesized when all of the component amino acids are present. The absence of these limiting amino acids prevents other amino acids from synthesizing proteins optimally. Kim, "Plant-Scale Circular Economy Using Biological Reuse of Electrolyte Residues in the Amino Acid Industry," *Bioengineering*, vol. 12 (24), December 30, 2024, p. 2, <https://doi.org/10.3390/bioengineering12010024>; Conference transcript, p. 68 (Nel); *Chemical Economics Handbook, Amino Acids*, May 2026, p. 27.

²³ Other grades of lysine include pharmaceutical grade and human food grade. Pharmaceutical grade lysine is an ultra-pure form of lysine that is substantially more expensive than animal feed grade lysine. Human food grade lysine has purity levels over 99 percent while animal feed grade lysine is typically over 98.5 percent. Conference transcript, p. 20 (Nel) and p. 51 (Choi).

²⁴ Petition, vol. 1, p. 6.

²⁵ Ibid.

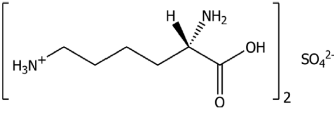
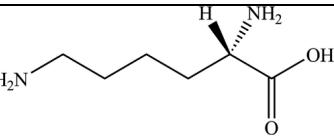
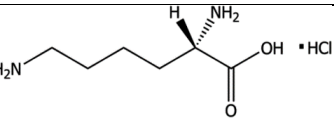
²⁶ Ibid; ruminants are animals with multiple stomach compartments, like sheep and cows, while non-ruminants are animals with single-compartment stomachs, like pigs and chickens.

²⁷ Conference transcript, p. 68 (Nel).

²⁸ Most of the lysine is used in "complete feeds," which are "nutritionally adequate feeds for animals other than man," Food and Agricultural Association of the United Nations, "Definitions," <https://www.fao.org/4/y1453e/y1453e06.htm>, accessed June 26, 2025; Conference transcript, pp. 15 (Choi), 54 (Benson), and 71 (Lucas).

²⁹ Petition, vol. 1, p. 7.

Table 1.5 Lysine: Forms of animal feed grade lysine

Lysine Form	Physical Description	Color	CAS Number	Percent by Weight Lysine	Molecular Formula	Molecular Structure
Lysine sulfate	Granular-like	Tan	60343-69-3	32 to 70	$C_6H_{16}N_2O_6S$	
Liquid (base) lysine	Aqueous, semi-viscous	Dark	56-87-1	Greater than or equal to 50	$C_6H_{14}N_2O_2$	
Lysine HCl	Crystalline-like powder, free-flowing, water-soluble	White	657-27-2	Greater than or equal to 78	$C_6H_{14}N_2O_2HCl$	

Source: Petition, vol. 1, p. 6; Bampidis et al., “Safety and Efficacy of L-lysine Monohydrochloride and Concentrated Liquid L-lysine (Base) Produced by Fermentation with *Corynebacterium Glutamicum* KCCM 80216 As Feed Additive for All Animal Species,” EFSA Journal, vol. 18 (issue 12), pp. 8 to 10, November 28, 2018, <https://doi.org/10.2903/j.efsa.2020.6334>; Bampidis et al., “Safety and Efficacy of L-lysine Sulfate Produced by Fermentation Using *Corynebacterium Glutamicum* KFCC 11043 As a Feed Additive for All Animal Species,” EFSA Journal, vol. 18 (issue 7), p. 6, July 1, 2020, <https://doi.org/10.2903/j.efsa.2020.6203>; Conference transcript, pp. 53 (Benson) and 71 to 72 (Benson, Lucas, Nel).

The poultry industry, comprising birds such as chickens, turkeys, ducks, ostriches, and quails, uses ingredients including animal proteins, cereal grains, vitamins, and minerals in its feed.³⁰ To help alleviate the cost of feed ingredients, the poultry industry has routinely combined purified amino acids with lowered crude protein content.³¹ Studies have shown that exposing chickens to low-protein diets over a prolonged period resulted in lower amino acids in the plasma and in higher infection rates.³² However, supplementing with limiting amino acids like lysine allowed producers to reduce the crude protein fed to chickens without sacrificing growth or immunity.³³ For chickens whose diets are based on corn and soybean, the three most limiting amino acids are methionine, lysine, and threonine.³⁴ Lysine is the second limiting amino

³⁰ Lee et al., “Effects of Lysine and Methionine in a Low Crude Protein Diet on the Growth Performance and Gene Expression of Immunity Genes in Broilers,” Poultry Science, vol. 99 (6), June 2020, p. 2916, p. 206, <https://doi.org/10.1016/j.psj.2020.03.013>.

³¹ Ibid, p. 2922.

³² Ibid, p. 2917.

³³ Ibid, p. 2922.

³⁴ Ibid, p. 2917. Chemical Economics Handbook, Amino Acids, May 2026, p. 27.

acid for broiler chickens,³⁵ as lysine has been shown to be particularly effective in breast muscle development.³⁶

Manufacturing processes

Lysine is produced primarily through a fermentation process, which involves the growth of select bacteria over time and then harvesting the desired fermentation product from the respective culture medium (e.g., broth).³⁷ Lysine is commonly produced via a fermentation process involving a bacterial strain³⁸ (*Corynebacterium glutamicum*) and a carbohydrate source (e.g., dextrose).³⁹ The initial fermentation stage involves the following three steps:⁴⁰

1. Growing the bacterium in a suitable culture medium
2. Producing and accumulating lysine in the culture medium
3. Collecting lysine from the culture medium

All forms of lysine follow a similar process in the first stage of production, where a carbohydrate source⁴¹ such as corn is processed to produce a base sugar in the form of dextrose (which then undergoes fermentation and purification).⁴² To produce dextrose, a wet

³⁵ Broiler chickens are bred specifically for meat production. Other types of chickens include layers (bred for egg production) and breeders (bred for breeding). Ishii et al., “Dietary Supplementation with Lysine and Threonine Modulates the Performance and Plasma Metabolites of Broiler Chicken,” Japan Poultry Science Association, vol. 56 (3), July 25, 2019, p. 204, <https://doi.org/10.2141/jpsa.0180104>.

³⁶ The most limiting amino acid for poultry diets is methionine. Lee et al., “Effects of Lysine and Methionine in a Low Crude Protein Diet on the Growth Performance and Gene Expression of Immunity Genes in Broilers,” Poultry Science, vol. 99 (6), June 2020, p. 204, <https://doi.org/10.1016/j.psj.2020.03.013>.

³⁷ “Certain L-Lysine Feed Products, Their Methods of Production and Genetic Constructs for Production, Inv. No. 337-TA-571 (final), USITC Publication 4113, November 2009, p. 6.

³⁸ Industrial lysine bioprocesses can also utilize the bacterial strain *Escherichia coli* (*E. coli*). Malla et al., “A Novel Efficient L-Lysine Exporter Identified by Functional Metagenomics,” Frontiers in Microbiology, vol. 13, April 14, 2022, p.1, <https://doi.org/10.3389/fmicb.2022.855736>. Wild-type *E. coli* converts sugars into lysine for its own internal use via a biosynthetic pathway that includes a series of intracellular chemical reactions, and wild-type *E. coli* also has an intracellular mechanism to break down lysine into other related compounds. Wild-type refers to bacterial cells that have not undergone genetic engineering. *Certain L-Lysine Feed Products, Their Methods of Production and Genetic Constructs for Production*, Inv. No. 337-TA-571 (final), USITC Publication 4113, November 2009, p. 6.

³⁹ Petition, vol. 1, p. 6.

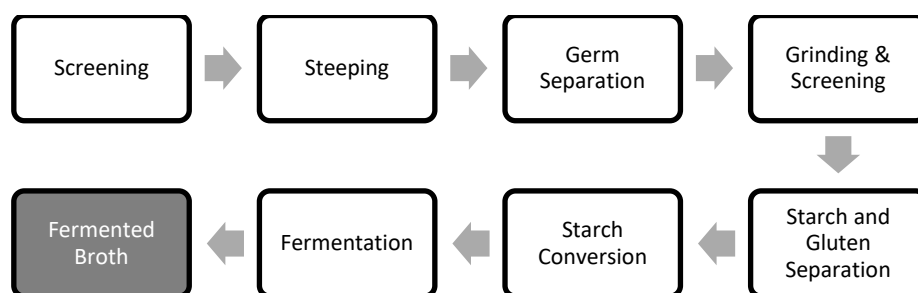
⁴⁰ *Certain L-Lysine Feed Products, Their Methods of Production and Genetic Constructs for Production*, Inv. No. 337-TA-571 (final), USITC Publication 4113, November 2009, p. 6.

⁴¹ Other carbohydrate sources include wheat and sugar beets. Petition, vol. 1, p. 10.

⁴² Lysine production can either be batched or continuous. Conference transcript, p. 12 (Benson), 75 (Benson, Choi, Nel); Petition, vol. 1, p. 8, 10.

milling process refines the corn. As seen in figure 1.1, after the corn is received and screened to remove any debris, the corn is subjected to a steeping process, where the corn is softened.⁴³ The softened corn becomes more amenable to the separation process where the corn is separated into four parts: germ, fiber, gluten, and starch.⁴⁴ The corn goes through a grinding mill to remove the germ for further processing, and then the corn slurry is ground again to remove the fiber for further processing.⁴⁵ The remaining mixture is centrifuged to remove the gluten.⁴⁶ The last remaining component of the corn is the starch, which is washed to lower its protein content and to prepare it for the next step.⁴⁷

Figure 1.1 Lysine: Corn refining process to produce the fermented broth



Source: Petition, vol. 1, exh. Gen—2 (exh. A).

The next step involves dextrose being transported to another facility where it is combined with a bacterial strain to start the fermentation process and create the fermented broth consisting of lysine, other amino acids, and biomass.⁴⁸ To produce lysine sulfate (see figure 1.2), the fermented broth undergoes an evaporation and drying process to remove excess water and produce lysine sulfate in powder form.⁴⁹ Unlike other forms of lysine, lysine sulfate does not undergo an additional purification or filtration process. As a result, excess materials such as biomass and salts are included in the lysine sulfate.⁵⁰ Therefore, lysine sulfate has a lower lysine content relative to other forms of lysine.⁵¹

⁴³ Petition, vol. 1, p. 8.

⁴⁴ Petition, vol. 1, p. 8; Conference transcript, p. 12 (Benson).

⁴⁵ Petition, vol. 1, p. 8.

⁴⁶ Ibid.

⁴⁷ Ibid.

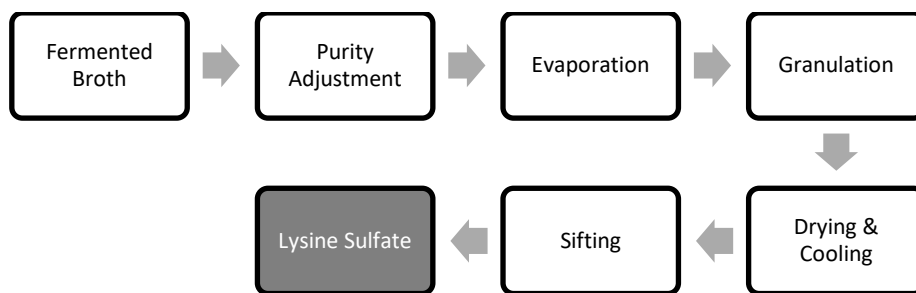
⁴⁸ Petition, vol. 1, p. 9; Biomass is any living (or recently living) organic matter, “Biomass 101,” National Resources Defense Council, August 11, 2022, <https://www.nrdc.org/stories/biomass-101>.

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ Ibid.

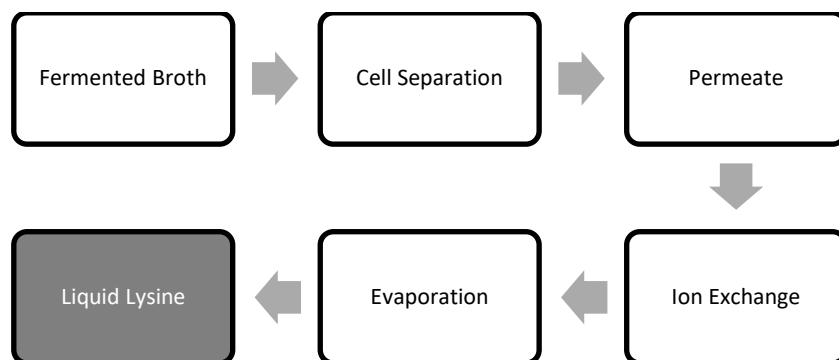
Figure 1.2 Lysine: Production flow diagram for lysine sulfate



Source: Petition, vol. 1, exh. Gen—2 (exh. B).

In order to produce liquid (base) lysine (see figure 1.3), the aforementioned fermented broth undergoes a filtration process through which biomass is removed via membrane filters and a purification process through which impurities are removed via an ion exchange resin.⁵² Afterwards, another round of evaporation takes place to remove excess water, resulting in a final product with lysine content of at least 50 percent by weight.⁵³ The liquid lysine is transferred to a storage tank, whereafter the product is packaged into one-ton liquid totes or in bulk and then shipped via rail or truck.⁵⁴ The shelf life of liquid lysine ranges from 3 to 18 months.⁵⁵

Figure 1.3 Lysine: Production flow diagram for liquid (base) lysine



Source: Petition, vol. 1, exh. Gen—2 (exh. B).

⁵² Petition, vol. 1, exh. B.

⁵³ Petition, vol. 1, p. 9.

⁵⁴ Ibid.

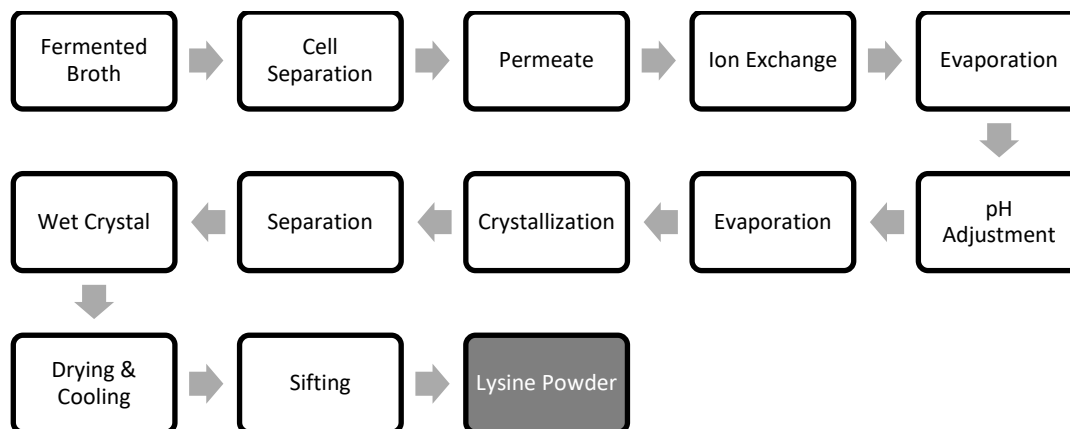
⁵⁵ Conference transcript, p. 87 (Benson, Nel).

Compared with the other previous forms of lysine, lysine HCl has the highest lysine content and requires additional production steps.⁵⁶ The fermented broth undergoes a crystallization process with hydrochloric acid (HCl), where a crystal slurry is formed and the pH is adjusted.⁵⁷ The slurry is then sent to a centrifuge, followed by a series of dryers to remove excess moisture and to promote crystal formation.⁵⁸

Lysine can also be produced in the form of granules or powders. To produce lysine in granular forms, the lysine undergoes an evaporation process to increase the content of the solid form, following which it is sent to a fluid bed granulator, where the concentrated liquid broth becomes granules.⁵⁹ The granules are then sent to a dryer to remove any excess moisture, resulting in the final granular product.

To create lysine powder, the fermented broth goes through two rounds of purification and filtration to remove large particulates such as biomass and solids.⁶⁰ Then the broth goes through an initial round of evaporation and purification via ion exchange (using an ion exchange resin, see figure 1.4) to produce lysine powder (90 percent pure, dry basis). The lysine powder is packaged into 25kg bags or one-ton totes and then shipped via rail or truck.⁶¹ The shelf life of dry lysine ranges from 18 months to 24 months.⁶²

Figure 1.4 Lysine: Production flow diagram for lysine powder



Source: Petition, vol. 1, exh. Gen—2 (exh. B).

⁵⁶ Conference transcript, p. 53 (Benson).

⁵⁷ Petition, vol. 1, p. 9.

⁵⁸ Ibid.

⁵⁹ Petition, vol. 1, exh. B.

⁶⁰ Petition, vol. 1, p. 9 and exh. B.

⁶¹ Petition, vol. 1, exh. B; Conference transcript, p. 89 (Nel).

⁶² Conference transcript, p. 87 (Benson, Choi, Nel).

Apart from lysine sulfate, all the other forms of lysine are purified via the ion exchange process to separate lysine from the other unwanted components. During the ion exchange process, lysine is adsorbed onto the cation-exchange resin. Lysine is eluted from the resin using an ammonium hydroxide solution, resulting in the permeate.⁶³ Concurrently, the raffinate is neutralized using a sulfuric acid solution, which results in ammonium sulfate ((NH₄)₂SO₄) solution residues.⁶⁴ During the amino acid production process, large amounts of electrolyte residues are typically generated as byproducts that consist of sulfuric acid, phosphoric acid, acetic acid, or ammonia.⁶⁵

These electrolyte residues are generally considered waste byproducts, but incorporating them into a circular economy helps with cost savings and environmental sustainability.⁶⁶ For instance, instead of the ammonium sulfate solution (i.e., mother liquor) being discarded as waste, the solution can be repurposed as a nitrogen source and pH buffering agent for use in the fermentation process.⁶⁷ Approximately 2 percent of production costs can be saved by the reuse of ammonium sulfate because it reduces raw materials needed such as ammonia (NH₃) and sulfuric acid (H₂SO₄). In addition to being used in the fermentation process, the ammonium sulfate mother liquor solution can also be sold to local farmers and used as a raw material for liquid or solid fertilizers due to its source of nitrogen and sulfur.⁶⁸

⁶³ Permeate contains the desired material while raffinate contains the rejected material. Kim, "Plant-Scale Circular Economy Using Biological Reuse of Electrolyte Residues in the Amino Acid Industry," *Bioengineering*, vol. 12 (24), December 30, 2024, p. 2, <https://doi.org/10.3390/bioengineering12010024> and conference transcript, p. 74 (Benson).

⁶⁴ Raffinate refers to the solution that remains after the desired material (i.e., lysine) has been extracted. Kim, "Plant-Scale Circular Economy Using Biological Reuse of Electrolyte Residues in the Amino Acid Industry," *Bioengineering*, vol. 12 (24), December 30, 2024, p. 2, <https://doi.org/10.3390/bioengineering12010024>.

⁶⁵ Kim, "Plant-Scale Circular Economy Using Biological Reuse of Electrolyte Residues in the Amino Acid Industry," *Bioengineering*, vol. 12 (24), December 30, 2024, p. 1, <https://doi.org/10.3390/bioengineering12010024>.

⁶⁶ Ibid.

⁶⁷ Ibid.

⁶⁸ Conference transcript, p. 57 (Benson); Kim, "Plant-Scale Circular Economy Using Biological Reuse of Electrolyte Residues in the Amino Acid Industry," *Bioengineering*, vol. 12 (24), December 30, 2024, p. 3, <https://doi.org/10.3390/bioengineering12010024>.

Domestic like product issues

No issues with respect to domestic like product have been raised in these investigations. Petitioners propose that the Commission should define a single domestic like product consisting of lysine, co-extensive with the scope of these investigations.⁶⁹ In the preliminary phase of these investigations, the Commission defined a single domestic like product, coextensive with the scope. In the final phase of these investigations, no parties requested data or other information necessary for the analysis of the domestic like product.

⁶⁹ Petitioner's postconference brief, pp. 3 to 8; Petitioner's prehearing brief, pp. 3 to 4.

Part 2: Conditions of competition in the U.S. market

U.S. market characteristics

Lysine is an amino acid that is added directly to animal feed to promote the biosynthesis of proteins. Lysine is produced in multiple forms that may be in a dry or liquid state. While certain aspects such as purity level, shelf life, and color may differ among forms of animal feed grade lysine, Petitioner states that all forms are nutritionally the same.¹

Most firms reported that the market was not subject to distinctive conditions of competition. One of three U.S. producers, 8 of 18 importers, and 9 of 24 purchasers indicated that it was. Specifically, firms reported that the substitution of lower cost corn and soybean meal can provide a portion of the amino acid lysine for a lesser cost, that the lysine market is highly competitive and is influenced by pricing, supply availability, and that ADM converted its domestic manufacturing plant from feed-grade production to food-grade production which has left “a gap in the industry.”²

Apparent U.S. consumption of lysine fluctuated during January 2023 to March 2026. Overall, apparent U.S. consumption in 2025 was *** higher in terms of quantity than in 2023.

¹ Petitioner prehearing brief, p. 5.

² U.S. producer ADM reported that it has not produced pharmaceutical or food grade lysine. Conference transcript, p. 34. (Benson).

U.S. purchasers

The Commission received 24 usable questionnaire responses from firms that had purchased lysine during January 2023 to March 2026.^{3 4 5} Twelve responding purchasers are distributors, 12 are end users, and 6 identified as other types, including buying groups and resellers, tollers, and blenders. In general, responding U.S. purchasers (19 of 24) were located in the Midwest. The responding purchasers primarily represented firms in agricultural industries, specifically producing feed for livestock. Large purchasers of lysine include ***.

Impact of section 301 tariffs and new/modified tariffs

U.S. producers, importers, and purchasers were asked to report the impact of section 301 tariffs and new/modified tariffs on overall demand, supply, prices, or raw material costs (tables 2.1 and 2.2). Most U.S. producers reported that these tariffs did not have an impact. Importers were split regarding the impact of the 301 tariffs on Chinese-origin lysine but most responded that the new/modified tariffs had an impact, and most purchasers reported that both the 301 and new/modified tariffs had an impact on the lysine market.

³ The following firms provided purchaser questionnaire responses: ***.

⁴ Of the 24 responding purchasers, 20 purchased the domestic lysine, 18 purchased imports of the subject merchandise from China, and 4 purchased imports of lysine from other sources.

⁵ Twenty-two purchasers indicated they had marketing/pricing knowledge of domestic product, 18 of Chinese product, and 9 of nonsubject countries or unknown sources.

Table 2.1 Lysine: Count of firms' responses regarding the impact of the 301 tariffs on Chinese origin products

Count in number of firms reporting

Firm type	No	Yes	Don't know
U.S. producers	3	0	1
Importers	7	7	6
Purchasers	4	12	9

Source: Compiled from data submitted in response to Commission questionnaires.

Table 2.2 Lysine: Count of firms' responses regarding the impact of new or modified tariffs

Count in number of firms reporting

Firm type	No	Yes	Don't know
U.S. producers	2	1	1
Importers	3	12	5
Purchasers	3	14	8

Source: Compiled from data submitted in response to Commission questionnaires.

Channels of distribution

U.S. producers sold mainly to end users while importers sold large shares to both distributors and end users, as shown in table 2.3. The majority of U.S. shipments of lysine from China were sold to end users in 2023 and 2024, and the majority of shipments were sold to distributors in 2025 and interim 2026.

Table 2.3 Lysine: Share of U.S. shipments by source, channel of distribution, and period

Shares in percent; interim is January through March

Source	Channel	2023	2024	2025	Interim 2025	Interim 2026
United States	Distributors	***	***	***	***	***
United States	End users: Direct	***	***	***	***	***
United States	End users: Via toll blender	***	***	***	***	***
China	Distributors	***	***	***	***	***
China	End users: Direct	***	***	***	***	***
China	End users: Via toll blender	***	***	***	***	***
Nonsubject	Distributors	***	***	***	***	***
Nonsubject	End users: Direct	***	***	***	***	***
Nonsubject	End users: Via toll blender	***	***	***	***	***
All imports	Distributors	***	***	***	***	***
All imports	End users: Direct	***	***	***	***	***
All imports	End users: Via toll blender	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Geographic distribution

U.S. producers and importers reported selling lysine to all regions in the contiguous United States (table 2.4). For U.S. producers, *** percent of sales were within 100 miles of their production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold *** percent within 100 miles of their U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

Table 2.4 Lysine: Count of U.S. producers' and U.S. importers' geographic markets

Count in number of firms reporting

Region	U.S. producers	China
Northeast	4	10
Midwest	4	15
Southeast	4	7
Central Southwest	4	9
Mountains	4	3
Pacific Coast	4	7
Other	1	0
All regions (except Other)	4	2
Reporting firms	4	17

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Other U.S. markets include AK, HI, PR, and VI.

Supply and demand considerations

U.S. supply

Table 2.5 provides a summary of the supply factors regarding lysine from U.S. producers and from China.

Table 2.5 Lysine: Supply factors that affect the ability to increase shipments to the U.S. market, by country

Quantity in short tons HCl equivalent; ratios and shares in percent; count in number of firms reporting

Factor	Measure	United States	China
Capacity 2023	Quantity	***	***
Capacity 2025	Quantity	***	***
Capacity utilization 2023	Ratio	***	***
Capacity utilization 2025	Ratio	***	***
Inventories to total shipments 2023	Ratio	***	***
Inventories to total shipments 2025	Ratio	***	***
Home market shipments 2025	Share	***	***
Non-US export market shipments 2025	Share	***	***
Ability to shift production	Count	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Responding U.S. producers accounted for all known U.S. production of lysine in 2025. Responding foreign producer/exporter firms accounted for *** percent of U.S. imports of lysine from China during 2025. For additional data on the number of responding firms and their share of U.S. production and of U.S. imports from each subject country, please refer to Parts 3 and 7.

Domestic production

Based on available information, U.S. producers of lysine have the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced lysine to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, an ability to shift production to or from alternate products for some producers, and the ability to shift shipments from alternate markets. One factor mitigating responsiveness of supply is the limited availability of inventories. Additionally, U.S. producer ***.

Subject imports from China

Based on available information, producers of lysine from China have the ability to respond to changes in demand with large changes in the quantity of shipments of lysine to the U.S. market. Chinese producers reported relatively small amounts of unused production capacity and limited inventories. However, Chinese producers reported selling the vast majority of lysine in their home and non-U.S. markets and therefore could divert large quantities of lysine to the U.S. market.⁶

Imports from nonsubject sources

Nonsubject imports accounted for 2.3 percent of total U.S. imports in 2025. The largest sources of nonsubject imports in 2025 were France and India.

Supply constraints

One of 4 U.S. producers, 3 of 19 importers, and 9 of 23 purchasers reported that they had experienced supply constraints since January 1, 2023. Of the U.S. producers, importers, and purchasers that reported they had experienced supply constraints, 7 reported the constraints occurred during 2023, 11 reported they occurred during 2024, 10 during 2025, and 8 since January 2026 (table 2.6). U.S. producer *** reported constraints because ***. Constraints reported by importers included manufacturing constraints from foreign producers, ocean freight costs, and long lead times. Additionally, *** stated that soybean meal prices in 2025 and 2026 were very low which led to the removal of lysine in animal diets. Importer *** reported that it was unable to obtain domestically produced dry lysine throughout the period, and that it relied solely on imports.

Purchasers reported experiencing constraints from domestic producers including U.S. producer CJ Bio which purchasers reported was unwilling or unable to provide bids (***), Evonik which put customers on allocation or was “sold out”, and Ajinomoto which reduced its production and shut down.

⁶ While the responding Chinese producer in the final phase (**) reports ** than were reported by other Chinese producers in the preliminary phase of these investigations, Chinese producers (**) did not respond in the final phase. Chinese producer ** submitted a questionnaire but did not produce in scope lysine and was excluded from the dataset.

Table 2.6 Lysine: Count of firms' responses regarding timing of supply constraints, by firm type and source

Count in number of firms reporting

Firm type	Source	2023	2024	2025	January 2026 to date
U.S. producers	Domestic	0	0	1	0
Importers	Imported	2	3	3	2
Purchasers	Domestic	5	8	6	7
Purchasers	Imported	1	1	1	1

Source: Compiled from data submitted in response to Commission questionnaires.

New suppliers

Four of 23 purchasers indicated that new suppliers entered the U.S. market since January 1, 2023. Purchasers cited additional Chinese producers including Fufeng and FNF as well as Canadian trading company AGY-Endo.

U.S. demand

Based on available information, the overall demand for lysine is likely to experience small changes in response to changes in price. The main contributing factor is the small share of lysine in most of its end-use products.

End uses and cost share

U.S. demand for lysine depends on the demand for U.S.-produced downstream products such as animal feed. Lysine accounts for a small share of the cost of the end-use products in which it is used. Most commonly reported cost shares for some end uses include swine and poultry feed, in which lysine accounts for 1 to 5 percent of the total end use cost. Petitioner stated that all forms of lysine (dry, liquid, granular, etc.) have the same end use as an additive to animal feed.⁷

⁷ Petitioner prehearing brief, p. 5.

Business cycles

All three responding U.S. producers, 12 of 19 importers, and 15 of 23 purchasers indicated that the market was not subject to business cycles. The firms that did report business cycles reported lower demand during the summer and higher demand in the winter and increased demand in the last part of the year as blenders build up inventory for winter. Importer *** reported that when soybean meal and corn prices drop, formulas are adjusted to reduce the usage of lysine, and that this typically occurs during the summer. Some purchasers reported that weather, energy costs, and production slowdowns contribute to business cycles.

Demand trends

Most firms reported no change in U.S. demand for lysine since January 1, 2023 (table 2.7), and most purchasers reported that demand for end use products also remained unchanged.

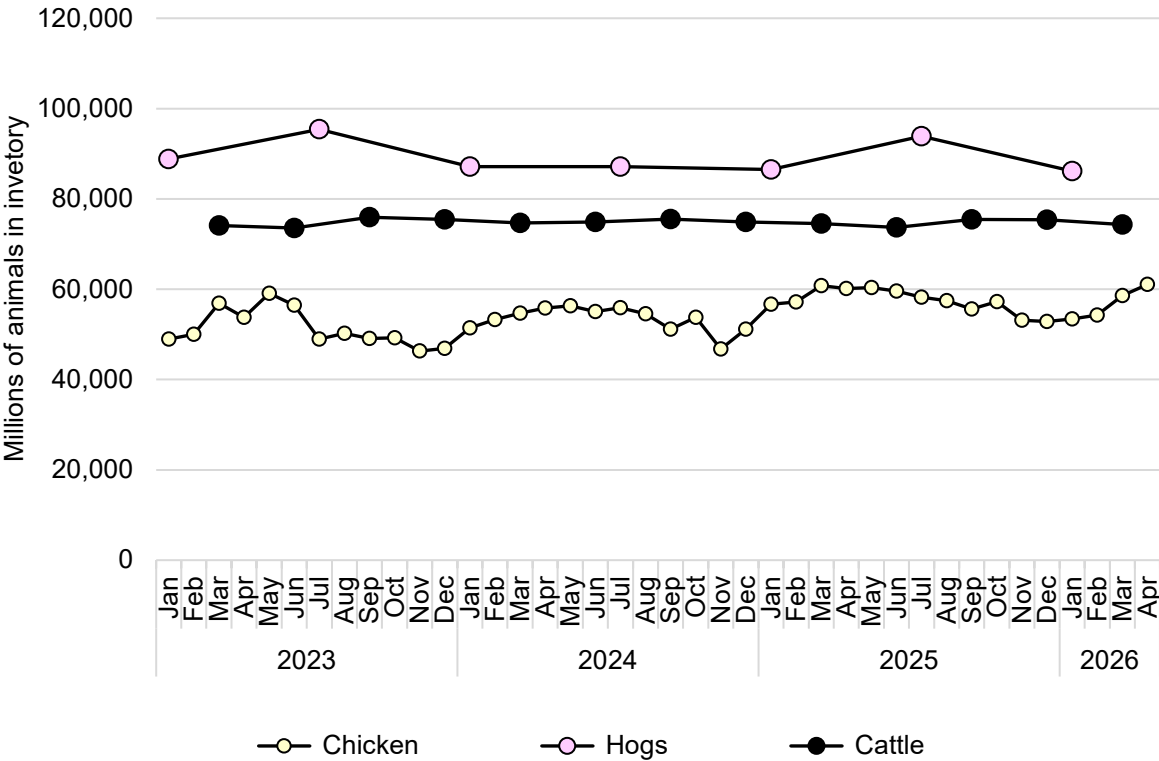
Table 2.7 Lysine: Count of firms' responses regarding overall domestic and foreign demand, by firm type

Count in number of firms reporting

Market	Firm type	Steadily Increase	Fluctuate Up	No change	Fluctuate Down	Steadily Decrease
Domestic demand	U.S. producers	1	0	2	0	0
Domestic demand	Importers	1	6	9	1	1
Domestic demand	Purchasers	3	3	11	3	0
Foreign demand	U.S. producers	1	1	1	0	0
Foreign demand	Importers	5	5	5	1	0
Foreign demand	Purchasers	3	1	6	2	0
Demand for end use products	Purchasers	2	1	11	2	1

Source: Compiled from data submitted in response to Commission questionnaires.

Figure 2.1 Lysine: Demand driver: national swine and cattle inventories and hatched chicken eggs, by month



Source: United States Department of Agriculture National Agricultural Statistics Service, accessed June 4, 2026.

Table 2.8 Lysine: National swine and cattle inventories, and hatched chicken eggs, by month

Thousands of animals, NA in the table is "not available"

Year	Month	Chickens, eggs hatched	Hogs	Cattle
2023	January	48,949	88,841	NA
2023	February	49,988	NA	NA
2023	March	56,880	NA	74,136
2023	April	53,768	NA	NA
2023	May	59,081	NA	NA
2023	June	56,427	NA	73,551
2023	July	48,924	95,400	NA
2023	August	50,234	NA	NA
2023	September	49,127	NA	75,938
2023	October	49,233	NA	NA
2023	November	46,294	NA	NA
2023	December	46,863	NA	75,461
2024	January	51,447	87,157	NA
2024	February	53,241	NA	NA
2024	March	54,719	NA	74,691
2024	April	55,823	NA	NA
2024	May	56,352	NA	NA
2024	June	55,034	NA	74,891
2024	July	55,860	87,157	NA
2024	August	54,571	NA	NA
2024	September	51,178	NA	75,490
2024	October	53,787	NA	NA
2024	November	46,760	NA	NA
2024	December	51,145	NA	74,905
2025	January	56,675	86,472	NA
2025	February	57,191	NA	NA
2025	March	60,769	NA	74,512
2025	April	60,121	NA	NA
2025	May	60,389	NA	NA
2025	June	59,587	NA	73,697
2025	July	58,236	93,900	NA
2025	August	57,487	NA	NA
2025	September	55,639	NA	75,438
2025	October	57,251	NA	NA
2025	November	53,116	NA	NA
2025	December	52,845	NA	75,415
2026	January	53,450	86,155	NA
2026	February	54,261	NA	NA
2026	March	58,615	NA	74,321
2026	April	61,044	NA	NA

Source: United States Department of Agriculture National Agricultural Statistics Service accessed June 4, 2026.

Substitute products

Substitutes for lysine include soybean meal and corn. All responding U.S. producers and most importers (11 of 18) reported that there are no substitutes for lysine. However, the remaining importers and most purchasers (14 of 19) reported that soybean meal and corn can be substituted for lysine in animal feed applications and that the price of these substitutes may impact the price of lysine, with lysine generally following the price of soybean meal.

Petitioners stated that different types of amino acid additives in animal feed are complementary rather than substitutes, because they satisfy different nutritional needs.⁸

Substitutability issues

This section assesses the degree to which U.S.-produced lysine and imports of lysine from subject countries can be substituted for one another by examining the importance of certain purchasing factors and the comparability of lysine from domestic and imported sources based on those factors. Based on available data, staff believes that there is a moderately high degree of substitutability between domestically produced lysine and lysine imported from China.⁹ Factors contributing to this level of substitutability include similar quality, availability, and lead times for lysine from inventory, interchangeability between domestic and subject sources, and limited significant factors other than price. Factors mitigating the substitutability is that some purchasers have a strong preference for domestically produced product.

Factors affecting purchasing decisions

Purchaser decisions based on source

As shown in table 2.9, most purchasers and their customers sometimes or never make purchasing decisions based on the producer or country of origin. Purchasers reported using an approved list of vendors and that they require reputable suppliers and quality product.

⁸ Petitioner prehearing brief, p. 6.

⁹ The degree of substitution between domestic and imported lysine depends upon the extent of product differentiation between the domestic and imported products and reflects how easily purchasers can switch from domestically produced lysine to the lysine imported from subject countries (or vice versa) when prices change. The degree of substitution may include such factors as quality differences (e.g., grade standards, defect rates, etc.), and differences in sales conditions (e.g., lead times between order and delivery dates, reliability of supply, product services, etc.).

Table 2.9 Lysine: Count of purchasers' responses regarding frequency of purchasing decisions based on producer and country of origin

Count in number of firms reporting

Firm making decision	Decision based on	Always	Usually	Sometimes	Never
Purchaser	Producer	3	3	10	8
Customer	Producer	0	1	11	9
Purchaser	Country	2	6	7	9
Customer	Country	0	2	10	9

Source: Compiled from data submitted in response to Commission questionnaires.

Importance of purchasing domestic product

The majority of purchasers (20 of 24) reported that most or all of their purchases did not require purchasing U.S.-produced product. One purchaser (***) reported that domestic product was required by law (for 90 percent of its purchases), six reported it was required by their customers (for 5 to 100 percent of their purchases), and two reported other preferences for domestic product. Reasons cited for preferring domestic product included: a bid process that included a factor of preference for U.S. produced product.

Thirteen of 24 purchasers reported that they or their customers prefer to source lysine from the United States.

Most important purchase factors

The most often cited top three factors firms consider in their purchasing decisions for lysine were price (24 firms), availability (20 firms), and quality (12 firms) as shown in table 2.10. Price was the most frequently cited first-most important factor (cited by 8 firms), followed by availability and quality (6 firms each); price was the most frequently reported second-most important factor (10 firms); and availability was the most frequently reported third-most important factor (6 firms).

Table 2.10 Lysine: Count of ranking of factors used in purchasing decisions as reported by purchasers, by factor

Count in number of firms reporting

Factor	First	Second	Third	Total
Price	8	10	6	24
Availability	7	7	6	20
Quality	6	4	2	12
All other factors	3	3	7	NA

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Other factors include supplier relationships (5 purchasers), distribution/delivery networks (3), packaging and product specifications (2 each), credit, contracting, dependability, and source (1 each).

The majority of purchasers (17 of 23) reported that they always or usually purchase the lowest-priced product.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 16 factors in their purchasing decisions (table 2.11). The factors rated as very important by more than half of responding purchasers were quality meets industry standards and availability (24 firms each), price (23), product consistency (22), reliability of supply (21), delivery time (18), quality exceeds industry standards (14), U.S. transportation costs (13), and delivery terms (11).

Table 2.11 Lysine: Count of purchasers' responses regarding importance of purchase factors, by factor

Count in number of firms reporting

Factor	Very important	Somewhat important	Not important
Quality meets industry standards	24	1	0
Availability	24	0	0
Price	23	1	0
Product consistency	22	2	0
Reliability of supply	21	3	0
Delivery time	18	5	1
Quality exceeds industry standards	14	7	3
U.S. transportation costs	13	10	1
Delivery terms	11	12	1
Packaging	8	16	0
Technical support	6	13	5
Product range	6	10	8
Minimum quantity requirements	6	8	10
Payment terms	5	15	4
Discounts offered	5	14	5
Services (e.g., liquification, other)	5	10	9

Source: Compiled from data submitted in response to Commission questionnaires.

Dry versus liquid Lysine

U.S. producers, importers, and purchasers were asked if lysine in different forms (lysine HCl, lysine sulfate, and liquid lysine) can always, frequently, sometimes, or never be used interchangeably (table 2.12). Most U.S. producers reported that all three types of lysine can always be used interchangeably. Importers were split regarding the interchangeability of lysine HCl, lysine sulfate, and liquid lysine. Purchasers generally answered that all three forms of lysine could frequently or sometimes be used interchangeably. Additionally, purchasers were asked how frequently they or their customers make purchasing decisions involving lysine based on the specific form of lysine (dry or liquid). Most purchasers reported that they and their customers sometimes or never made their decisions based on the specific form of lysine (table 2.13).

Purchasers were asked to estimate the share of their firm's purchases in 2025 that were dry lysine and that were liquid lysine. Purchasers reported that *** percent of their purchases of U.S.-produced lysine were in liquid form, and all of their purchases of lysine from China and other sources were exclusively in dry form. Purchasers were also asked if they purchase dry lysine and convert it to liquid lysine in order to use the product. Twenty-two of 23 purchasers reported that they purchase dry lysine but do not convert it to liquid lysine and the remaining purchaser reported that it did not purchase dry lysine.

Table 2.12 Lysine: Count of firms reporting interchangeability between different product types, by product pair and firm type

Count in number of firms reporting

Product pair	Firm type	Always	Frequently	Sometimes	Never
Lysine HCl vs. Lysine sulfate	U.S. producers	2	1	0	0
Lysine HCl vs. Liquid lysine	U.S. producers	2	1	1	0
Lysine sulfate vs. Liquid lysine	U.S. producers	3	0	0	0
Lysine HCl vs. Lysine sulfate	Importers	4	2	5	2
Lysine HCl vs. Liquid lysine	Importers	1	2	5	2
Lysine sulfate vs. Liquid lysine	Importers	1	3	2	2
Lysine HCl vs. Lysine sulfate	Purchasers	2	9	5	1
Lysine HCl vs. Liquid lysine	Purchasers	2	5	7	4
Lysine sulfate vs. Liquid lysine	Purchasers	1	3	8	4

Source: Compiled from data submitted in response to Commission questionnaires.

Table 2.13 Lysine: Count of purchasers' responses regarding frequency of purchasing decisions based on specific form of lysine

Count in number of firms reporting

Firm making decision	Always	Usually	Sometimes	Never
Purchaser	3	3	7	8
Customer	0	1	9	9

Source: Compiled from data submitted in response to Commission questionnaires.

Lead times

Lysine is primarily sold from inventory. U.S. producers reported that *** percent of their commercial shipments came from inventories, with lead times averaging 15 days. Importers reported 72.3 percent of their commercial shipments came from inventories, with lead times averaging 13 days. Importers reported that 13.9 percent came from foreign inventories with lead times averaging 44 days and the remaining 13.8 percent was produced to order with lead times averaging 11 days.

Supplier certification

The majority of responding purchasers require their suppliers to become certified or qualified to sell lysine to their firm. Purchasers generally reported that the time to qualify a new supplier ranged from 7 to 90 days. Purchasers generally reported that the certification process consisted of taking samples and testing them to ensure the product meets specifications and quality standards. None of the responding purchasers reported that a domestic or foreign supplier had failed in its attempt to qualify lysine, or had lost its approved status since 2023.

Minimum quality specifications

As shown in table 2.14, the majority of responding purchasers reported that domestically produced product always met minimum quality specifications. The majority of responding purchasers reported that the lysine imported from China always or usually met minimum quality specifications.

Table 2.14 Lysine: Count of purchasers' responses regarding suppliers' ability to meet minimum quality specifications, by source

Count in number of firms reporting

Source of purchases	Always	Usually	Sometimes	Rarely or never	Don't Know
United States	17	4	0	1	1
China	9	7	0	1	6
Nonsubject sources	1	3	0	1	9

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Purchasers were asked how often domestically produced or imported lysine meets minimum quality specifications for their own or their customers' uses.

A number of responding purchasers reported flowability determines the quality of lysine. Firms also reported that purity, package type, meeting specifications, and consistency of particle size and color are also factors that determine the quality of lysine.

Changes in purchasing patterns

Twelve purchasers reported that they had changed suppliers since January 1, 2023, and 12 reported that they had not.¹⁰ Purchaser *** reported shifting purchases from Ajinomoto to CJ Bio when Ajinomoto exited the market. Purchaser *** reported that it added supplier Heshu to spread out risk. Purchaser *** reported that it used to buy more from Fenchem, Hanley, Ridley, and Sam Nutrition but has switched to MRT Sales due to price and availability. Purchaser *** reported that it added more suppliers to improve negotiating power. Purchaser *** reported that it added Evonik Corporation. Purchaser *** reported that it moved between suppliers based on price and it had alternated between Evonik, Beans, Ridly, ADM, Hanley, Fenchem, Tiger, FNF, SAM, Funfeng, Jefe, and AGY-Endo.

Purchasers were also asked about changes in their purchasing patterns from different countries since January 1, 2023 (table 2.15). Purchaser responses on the changes in their purchasing patterns were mixed for all sources. Purchasers reported increasing purchases from U.S. producers as a result of tariffs and lead times while decreasing purchases because of various firms stopping production or exiting the dry lysine-HCl market. Purchasers reported increasing purchases from Chinese producers for greater availability of product but decreased purchases due to tariffs and shifts in demand.

¹⁰ Purchaser *** reported both yes and no, but provided no explanation.

Table 2.15 Lysine: Count of purchasers' responses regarding changes in purchase patterns from U.S., subject, and nonsubject countries

Count in number of firms reporting

Source of purchases	Steadily Increase	Fluctuate Up	No change	Fluctuate Down	Steadily Decrease	Did not purchase
United States	3	2	7	4	3	2
China	4	3	2	5	2	4
All other sources	2	2	2	1	0	10
Sources unknown	0	0	3	2	0	10

Source: Compiled from data submitted in response to Commission questionnaires.

Purchase factor comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing lysine produced in the United States, China, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 16 factors (table 2.11) for which they were asked to rate the importance.

Most purchasers reported that U.S.-produced lysine and lysine imported from China, and nonsubject countries were comparable on the majority of factors. At least half of purchasers reported that lysine produced in the United States was superior to lysine produced in China in terms of delivery time, which most purchasers reported was a very important purchasing factors, and technical support. Purchasers reported that U.S. produced lysine was inferior to Chinese lysine in terms of price, another factor that was rated very important.

Table 2.16 Lysine: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Count in number of firms reporting

Factor	Country pair	Superior	Comparable	Inferior
Quality meets industry standards	U.S. vs China	1	16	1
Availability	U.S. vs China	4	12	3
Price	U.S. vs China	0	5	14
Product consistency	U.S. vs China	4	13	1
Reliability of supply	U.S. vs China	7	9	3
Delivery time	U.S. vs China	12	6	1
Quality exceeds industry standards	U.S. vs China	3	15	1
U.S. transportation costs	U.S. vs China	4	11	2
Delivery terms	U.S. vs China	4	13	1
Packaging	U.S. vs China	7	10	1
Technical support	U.S. vs China	10	8	1
Product range	U.S. vs China	1	14	1
Minimum quantity requirements	U.S. vs China	2	14	2
Payment terms	U.S. vs China	4	12	2
Discounts offered	U.S. vs China	2	9	6
Services (e.g., liquification, other)	U.S. vs China	2	14	1

Table continued.

Table 2.16 (Continued) Lysine: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Count in number of firms reporting

Factor	Country pair	Superior	Comparable	Inferior
Quality meets industry standards	U.S. vs Nonsubject	1	10	0
Availability	U.S. vs Nonsubject	6	5	0
Price	U.S. vs Nonsubject	0	7	4
Product consistency	U.S. vs Nonsubject	3	8	0
Reliability of supply	U.S. vs Nonsubject	5	6	0
Delivery time	U.S. vs Nonsubject	7	4	0
Quality exceeds industry standards	U.S. vs Nonsubject	2	8	0
U.S. transportation costs	U.S. vs Nonsubject	3	6	0
Delivery terms	U.S. vs Nonsubject	3	8	0
Packaging	U.S. vs Nonsubject	4	7	0
Technical support	U.S. vs Nonsubject	6	5	0
Product range	U.S. vs Nonsubject	1	9	0
Minimum quantity requirements	U.S. vs Nonsubject	1	9	1
Payment terms	U.S. vs Nonsubject	2	9	0
Discounts offered	U.S. vs Nonsubject	2	8	1
Services (e.g., liquification, other)	U.S. vs Nonsubject	2	8	0

Table continued.

Table 2.16 (Continued) Lysine: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Count in number of firms reporting

Factor	Country pair	Superior	Comparable	Inferior
Quality meets industry standards	China vs Nonsubject	3	10	0
Availability	China vs Nonsubject	6	7	0
Price	China vs Nonsubject	4	8	1
Product consistency	China vs Nonsubject	3	8	1
Reliability of supply	China vs Nonsubject	3	10	0
Delivery time	China vs Nonsubject	4	10	0
Quality exceeds industry standards	China vs Nonsubject	3	10	0
U.S. transportation costs	China vs Nonsubject	2	9	1
Delivery terms	China vs Nonsubject	3	10	0
Packaging	China vs Nonsubject	3	10	0
Technical support	China vs Nonsubject	2	10	0
Product range	China vs Nonsubject	3	10	0
Minimum quantity requirements	China vs Nonsubject	2	10	1
Payment terms	China vs Nonsubject	2	10	1
Discounts offered	China vs Nonsubject	3	8	1
Services (e.g., liquification, other)	China vs Nonsubject	2	9	0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: With respect to cost/price factors, a rating of superior means that the cost/price for the first source in the country pair is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.

Comparison of U.S.-produced and imported lysine

In order to determine whether U.S.-produced lysine can generally be used in the same applications as imports from China, U.S. producers, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table 2.17, all U.S. producers reported that lysine from the United States, China, and nonsubject countries were always interchangeable, while a majority of importers and purchasers reported that lysine from the United States, China, and nonsubject countries were always or frequently interchangeable.

Table 2.17 Lysine: Count of firms reporting interchangeability between product produced in the United States and in other countries, by country pair and firm type

Count in number of firms reporting

Country pair	Firm type	Always	Frequently	Sometimes	Never
United States vs. China	U.S. producers	4	0	0	0
United States vs. Other	U.S. producers	4	0	0	0
China vs. Other	U.S. producers	4	0	0	0
United States vs. China	Importers	11	2	3	0
United States vs. Other	Importers	7	2	2	0
China vs. Other	Importers	8	1	3	0
United States vs. China	Purchasers	9	7	1	1
United States vs. Other	Purchasers	6	6	2	1
China vs. Other	Purchasers	8	4	2	0

Source: Compiled from data submitted in response to Commission questionnaires.

In addition, U.S. producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales of lysine from the United States, China, or nonsubject countries. As seen in table 2.18, all three responding U.S. producers reported that there were never significant factors other than price when comparing lysine across sources. Most importers reported that differences other than price are sometimes significant, and purchasers' responses were mixed. The importers and purchasers that reported significant factors other than price cited transportation costs and transportation networks, form of lysine, lead times, and regulatory risk and compliance, preference for U.S.-origin, and packaging. Purchaser *** stated that "formula space and inclusion rate can sometimes be a concern if evaluation between liquid and dry or HCl versus lysine sulfate."

Table 2.18 Lysine: Count of firms reporting the significance of differences other than price between product produced in the United States and in other countries, by country pair and firm type

Count in number of firms reporting

Country pair	Firm type	Always	Frequently	Sometimes	Never
United States vs. China	U.S. producers	0	0	0	3
United States vs. Other	U.S. producers	0	0	0	3
China vs. Other	U.S. producers	0	0	0	3
United States vs. China	Importers	3	1	10	1
United States vs. Other	Importers	2	0	9	1
China vs. Other	Importers	1	0	8	1
United States vs. China	Purchasers	3	5	8	3
United States vs. Other	Purchasers	3	4	5	2
China vs. Other	Purchasers	1	3	5	4

Source: Compiled from data submitted in response to Commission questionnaires.

Elasticity estimates

This section discusses elasticity estimates; parties were encouraged to comment on these estimates but none did so.

U.S. supply elasticity

The domestic supply elasticity for lysine measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of lysine. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced lysine. Analysis of these factors above indicates that the U.S. industry has the ability to greatly increase or decrease shipments to the U.S. market; an estimate in the range of 6 to 10 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for lysine measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of lysine. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the lysine in the production of any downstream products. Based on the available information, the aggregate demand for lysine is likely to be somewhat inelastic; a range of -0.5 to -1.0 is suggested.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.¹¹ Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g., availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced lysine and imported lysine is likely to be in the range of 3 to 5.

¹¹ The substitution elasticity measures the responsiveness of the relative U.S. consumption levels of the subject imports and the domestic like products to changes in their relative prices. This reflects how easily purchasers switch from the U.S. product to the subject products (or vice versa) when prices change.

Part 3: U.S. producers' production, shipments, and employment

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in Part 1 of this report and information on the volume and pricing of imports of the subject merchandise is presented in Part 4 and Part 5. Information on the other factors specified is presented in this section and/or Part 6 and (except as noted) is based on the questionnaire responses of four firms that accounted for *** U.S. production of lysine during 2025.¹

U.S. producers

The Commission issued a U.S. producer questionnaire to four firms based on information contained in the petition and staff research. Four firms provided usable data on their operations. Table 3.1 lists U.S. producers of lysine, their production locations, positions on the petition, and shares of total production.

Table 3.1 Lysine: U.S. producers, their positions on the petitions, production locations, and shares of reported production, 2025

Firm	Position on petition	Production location(s)	Share of production
ADM	Petitioner	Decatur, IL	***
Ajinomoto	***	Eddyville, IA	***
CJ Bio	Petitioner	Fort Dodge, IA	***
Evonik	Petitioner	Blair, NE	***
All firms	Various	Various	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

¹ Ajinomoto Health & Nutrition North America, Inc. ("Ajinomoto") reported it ***. Ajinomoto's U.S. producer questionnaire, question IV-15.

Table 3.2 presents information on U.S. producers' ownership, related and/or affiliated firms. One U.S. producer, ***, is related to a Chinese foreign producer of the subject merchandise.² In addition, as discussed in greater detail below, no U.S. producer reported directly importing the subject merchandise or purchasing the subject merchandise from U.S. importers.

Table 3.2 Lysine: U.S. producers' ownership, related and/or affiliated firms

Reporting firm	Relationship type and related firm	Details of relationship
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table 3.3 presents events in the U.S. industry since January 1, 2023.

Table 3.3 Lysine: Important industry events since 2023

Item	Firm	Event
Strategic Alliance	Ajinomoto Co.	On September 20, 2024, Ajinomoto Co. and Danone announced the formation of a global strategic partnership to help reduce GHG (greenhouse gas) emissions across the milk supply chain.
Acquisitions	Meihua Group	On November 22, 2024, the Chinese manufacturer's Singapore subsidiary Plum Biotechnology Group acquired the amino acid and human milk oligosaccharide businesses of BioKyowa in Cape Girardeau, MO, for \$67.6 million.
Other	Ajinomoto Co.	In December 2024, the EPA fined Ajinomoto's Health and Nutrition plants in Eddyville, IA (which manufactures amino acids), \$458,000 for hazardous events involving a hydrochloric acid leak in 2021 and a chlorine gas leak in 2022.
Other	Evonik	On December 13, 2024, Evonik announced its intention to reduce its business size via restructuring, potentially reducing its global workforce by 20 percent (7,000 jobs).
Production curtailments	Ajinomoto Co.	In late 2024 (early 2025), Ajinomoto ceased lysine production in the United States, with the exception of its rumen-protected version of lysine.

² ***. Email from ***, June 29, 2026.

Item	Firm	Event
Acquisitions	Fufeng USA	On January 8, 2025, Fufeng USA announced that it was considering purchasing a former ethanol manufacturing site in Illinois to create a corn wet milling plant. In September 2025, Fufeng abandoned those acquisition plans.
Layoffs	Archer-Daniels-Midland (ADM)	On February 4, 2025, ADM said that it would lay off up to 700 employees globally as part of a cost-savings measure.
Other	Evonik	On April 25, 2025, the CEO announced that the company plans to pause acquisitions for 2 years to focus on the company's restructuring.
Other	CJ CheilJedang Corp.	On April 30, 2025, CJ CheilJedang Corp. pivoted from selling its global bio business, which includes U.S. and Chinese lysine production, to expanding it due to rising geopolitical uncertainties.
Other	Archer-Daniels-Midland (ADM)	On January 27, 2026, ADM agreed to a settlement with the Securities and Exchange Commission (SEC) regarding a criminal probe into ADM's accounting issues.

Source: Conference transcript, p. 16 (Choi), pp. 10, 65 to 66, and 85 (Walley), p. 22 (Nel), pp. 25 and 28 (Rosenthal); ChemAnalyst, "Ajinomoto and Danone Establish Global Strategic Alliance to Reduce Dairy Industry GHG," September 20, 2024, <https://www.chemanalyst.com/NewsAndDeals/NewsDetails/ajinomoto-and-danone-establish-global-strategic-alliance-to-reduce-dairy-industry-30386>; CBS2Iowa, "Southeast Iowa Manufacturing Facility, EPA Reach Settlement over Chemical Leaks," December 16, 2024, <https://cbs2iowa.com/news/local/southeast-iowa-manufacturing-facility-and-epa-reach-settlement-over-chemical-leaks>; Reuters, "ADM to pay \$40 million in US SEC settlement," January 27, 2026, <https://www.reuters.com/legal/government/adm-pay-40-million-us-sec-settlement-avoids-criminal-charges-2026-01-28/>; WAND News, ADM expecting up to 700 global layoffs in 2025," February 4, 2025, https://www.wandtv.com/news/adm-expecting-up-to-700-global-layoffs-in-2025/article_60c89456-e312-11ef-aa14-b3357b067418.html; Southeast Missourian, "BioKyo Facility Among Businesses Sold to Chinese Amino Acids Supplier," February 3, 2025, <https://www.semissourian.com/business/biokyowa-facility-among-businesses-sold-to-chinese-amino-acids-supplier-da25b755>; Reuters, "Evonik Aims to Spin Off Assets and Could Shed 7,000 Jobs," <https://www.reuters.com/business/evonik-restructure-business-lines-into-two-core-segments-2024-12-13/>; World Grain, "FuFeng Considering Illinois Site for Corn Wet Mill," January 8, 2025, <https://www.world-grain.com/articles/20900-fufeng-considering-illinois-site-for-corn-wet-mill>; The County Chronicle, "Chinese-Linked Fufeng No Longer Considering," September 24, 2025, <https://www.thecounty-chronicle.com/2025/09/24/chinese-linked-fufeng-no-longer-considering-tuscola-manufacturing/>; Reuters, "Germany's Evonik to Pause Acquisitions for Two Years, CEO Says," <https://www.reuters.com/en/germanys-evonik-pause-acquisitions-two-years-ceo-says-2025-04-25/>; The Korea Economic Daily, "CJ CheilJedang Scraps \$3.5 Bn Green Bio Sale, Shifts Gears to Expansion," April 30, 2025, <https://www.kedglobal.com/mergers-acquisitions/newsView/ked202504300005>.

Producers in the United States were asked to report any change in the character of their operations or organization relating to the production of lysine since January 1, 2023. Three of four producers indicated in their questionnaires that they had experienced such changes. Table 3.4 presents the changes identified by these producers.

Table 3.4 Lysine: U.S. producers' reported changes in operations, since January 1, 2023

Item	Firm name and narrative response on changes in operations
Prolonged shutdowns	***
Production curtailments	***
Production curtailments	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. production, capacity, and capacity utilization

Table 3.5 presents U.S. producers' installed and practical capacity and production on the same equipment. Two of the four firms reported producing other products on same machinery as in-scope lysine. U.S. producers' installed and practical overall capacity increased from 2023 to 2024, led entirely by an increase reported by ***, and decreased from 2023 to 2025, led entirely by the decrease reported by ***, decreasing overall from 2023 to 2025. Installed and practical overall capacity were both lower in interim 2026 compared to interim 2025 as the decrease by *** outweighed the increase by ***. The other two firms, ***, reported constant installed and practical overall capacity during 2023 to 2025 and between the interim periods. Installed and practical overall capacity utilization increased from 2023 to 2024 and decreased from 2024 to 2025, decreasing overall during 2023 to 2025 and was higher in interim 2026 than in interim 2025.

Table 3.5 Lysine: U.S. producers' installed and practical capacity, production, and capacity utilization on the same equipment as in-scope production, by period

Capacity and production in short tons HCl equivalent; utilization in percent; interim period is January through March

Item	Measure	2023	2024	2025	Interim 2025	Interim 2026
Installed overall	Capacity	***	***	***	***	***
Installed overall	Production	***	***	***	***	***
Installed overall	Utilization	***	***	***	***	***
Practical overall	Capacity	***	***	***	***	***
Practical overall	Production	***	***	***	***	***
Practical overall	Utilization	***	***	***	***	***
Practical lysine	Capacity	485,620	488,928	480,928	123,032	121,756
Practical lysine	Production	390,855	399,256	375,673	94,259	93,089
Practical lysine	Utilization	80.5	81.7	78.1	76.6	76.5

Source: Compiled from data submitted in response to Commission questionnaires.

Table 3.6 presents U.S. producers' reported narratives regarding practical capacity constraints.

Table 3.6 Lysine: U.S. producers' reported capacity constraints since January 1, 2023

Item	Firm name and narrative response on constraints to practical overall capacity
Production bottlenecks	***
Production bottlenecks	***
Production bottlenecks	***
Production bottlenecks	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table 3.7 and figure 3.1 present U.S. producers' production, capacity, and capacity utilization. U.S. producers' practical capacity fluctuated, increasing from 2023 to 2024, then decreasing from 2024 to 2025, ending lower in 2025 than in 2023, and was lower in interim 2026 than in interim 2025.^{3 4} U.S. producers' production fluctuated, increasing from 2023 to 2024 and decreasing from 2024 to 2025, decreasing overall during 2023 to 2025, with *** accounting for the overall decrease.⁵ Production was lower in interim 2026 compared to interim 2025 as *** reported declines in lysine production that outweighed the increases by reported by ***. U.S producers' capacity utilization increased from 2023 to 2024 but decreased from 2024 to 2025, declining overall during 2023 and 2025, and was relatively constant between interim 2025 and interim 2026.

³ *** reported an increase in its capacity during 2023 to 2025 and higher capacity in interim 2026 compared to 2025, which were offset by the decreases in *** capacity during the same periods ***. *** U.S. producer questionnaire response, question II-2a; email from ***, Representative for ***, May 19, 2026.

⁴ *** reported constant practical capacity during 2023 and 2025 and between the interim periods.

⁵ Representatives from *** explained that the decrease was a result of ***. Email from ***, May 20, 2026. *** was the *** U.S. producer that reported an annual increase in its production.

Petitioners *** accounted for over *** percent of total U.S. production of lysine in 2025 and represented a majority *** and increasing share of total U.S. production in each year during 2023 to 2025 and the interim periods.

Table 3.7 Lysine: U.S. producers' output, by firm and period

Practical capacity

Capacity in short tons HCl equivalent; interim period is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	485,620	488,928	480,928	123,032	121,756

Table continued.

Table 3.7 (Continued) Lysine: U.S. producers' output, by firm and period

Production

Production in short tons HCl equivalent; interim period is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	390,855	399,256	375,673	94,259	93,089

Table continued.

Table 3.7 (Continued) Lysine: U.S. producers' output, by firm and period

Capacity utilization

Capacity utilization in percent; interim period is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	80.5	81.7	78.1	76.6	76.5

Note: Capacity utilization ratio represents the ratio of the U.S. producer's production to its production capacity.

Table continued.

Table 3.7 (Continued) Lysine: U.S. producers' output, by firm and period

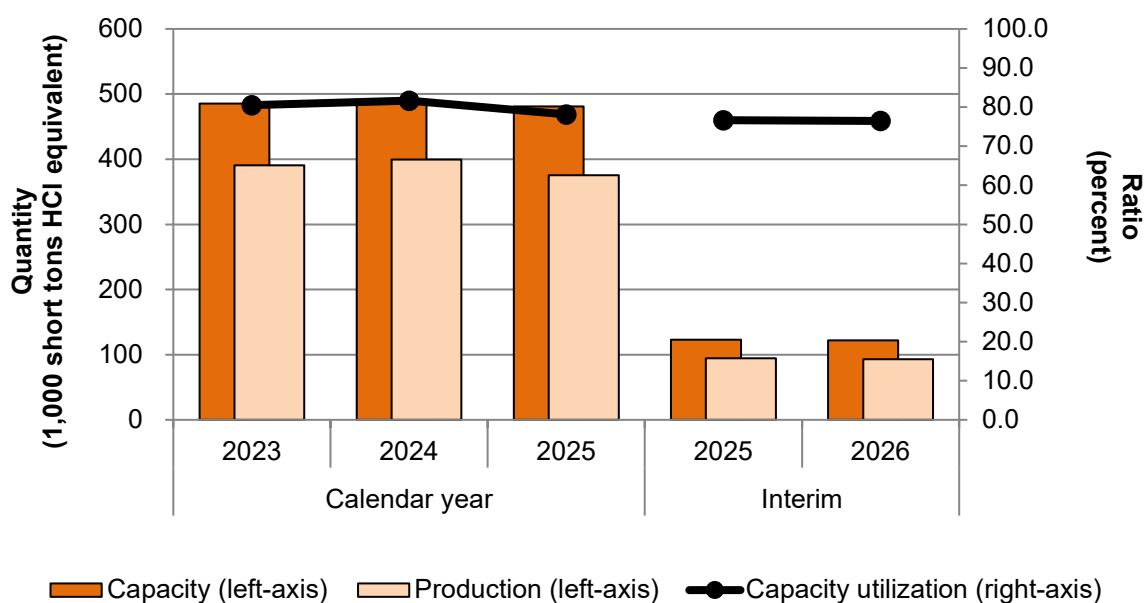
Share of production

Share in percent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Figure 3.1 Lysine: U.S. producers' output, by period



Source: Compiled from data submitted in response to Commission questionnaires.

Alternative products

As shown in table 3.8, lysine represented a large majority (***) of production of all products produced on the same equipment by U.S. producers, remaining fairly stable from 2023 to 2025 as well as between the interim periods. Two firms, *** reported producing products other than lysine using the same machinery, which included **. No firm reported producing food or pharmaceutical lysine on the same machinery.

Table 3.8 Lysine: U.S. producers' overall production on the same equipment as in-scope production, by period

Quantity in short tons HCl equivalent; share in percent; interim is January through March

Product type	Measure	2023	2024	2025	Interim 2025	Interim 2026
Lysine	Quantity	***	***	***	***	***
Out-of-scope products	Quantity	***	***	***	***	***
All products	Quantity	***	***	***	***	***
Lysine	Share	***	***	***	***	***
Out-of-scope products	Share	***	***	***	***	***
All products	Share	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. producers' U.S. shipments and exports

Table 3.9 presents U.S. producers' U.S. shipments, export shipments, and total shipments. U.S. shipments, of which the majority were commercial U.S. shipments, accounted for about *** percent all of U.S. producers' total shipments from 2023 to 2025 and accounted for between approximately *** percent in the interim periods. The quantity of U.S. shipments decreased annually from 2023 to 2025 as three of four firms reported an overall decrease in U.S. shipments from 2023 to 2025. The quantity of U.S. producers' U.S. shipments was higher in interim 2026 than in interim 2025, with *** accounting for the majority of the total increase.⁶

The value of U.S. producers' U.S. shipments decreased annually from 2023 to 2025, with each firm, ***, reporting a decrease in each year. However, the value of U.S. producers' U.S. shipments was higher in interim 2026 than in interim 2025, largely led by the increase reported by ***.

The AUV of U.S. producers' U.S. shipments fluctuated, decreasing from 2023 to 2024, and increasingly slightly from 2024 to 2025, ending 2025 lower than in 2023. The AUV of U.S. producers' U.S. shipments was lower in interim 2026 than in interim 2025.⁷

⁶ ***. Email from ***, May 19, 2026.

⁷ ***.

Export shipments accounted for a small share of U.S. producers' total shipments from 2023 to 2025. The quantity and value of export shipments fluctuated, increasing from 2023 to 2024 and decreasing from 2024 to 2025, ending 2025 higher than in 2023.⁸ The quantity and value of export shipments were lower in interim 2026 than in interim 2025. The AUV of U.S. producers' export shipments similarly fluctuated, increasing from 2023 to 2024 and decreasing from 2024 to 2025, ending 2025 higher than in 2023 but was lower in interim 2026 than in interim 2025.

Table 3.9 Lysine: U.S. producers' total shipments, by destination and period

Quantity in short tons HCl equivalent; value in 1,000 dollars; unit values in dollars per short ton HCl equivalent; shares in percent; interim period is January through March

Item	Measure	2023	2024	2025	Interim 2025	Interim 2026
U.S. shipments	Quantity	306,011	299,694	276,441	69,194	75,041
Export shipments	Quantity	***	***	***	***	***
Total shipments	Quantity	***	***	***	***	***
U.S. shipments	Value	533,306	481,122	447,611	111,653	115,977
Export shipments	Value	***	***	***	***	***
Total shipments	Value	***	***	***	***	***
U.S. shipments	Unit value	1,743	1,605	1,619	1,614	1,546
Export shipments	Unit value	***	***	***	***	***
Total shipments	Unit value	***	***	***	***	***
U.S. shipments	Share of quantity	***	***	***	***	***
Export shipments	Share of quantity	***	***	***	***	***
Total shipments	Share of quantity	100.0	100.0	100.0	100.0	100.0
U.S. shipments	Share of value	***	***	***	***	***
Export shipments	Share of value	***	***	***	***	***
Total shipments	Share of value	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

⁸ ***. Email from ***, May 21, 2026.

Table 3.10 presents U.S. producers' U.S. shipments by type. Liquid lysine accounted for the majority of all U.S. shipments by quantity (***) and by value (***) in 2025.⁹ *** U.S. producers' U.S. shipments in 2025 of liquid lysine and lysine sulfate were not mixed or blended, while the majority of U.S. producers' U.S. shipments of lysine HCl was not mixed or blended.

Table 3.10 Lysine: U.S. shipments, by product type and mixture status, 2025

Quantity in short tons HCl equivalent; value in 1,000 dollars; unit values in dollars per short ton HCl equivalent; shares in percent

Source	Measure	Not mixed or blended	Mixed or blended	All mixtures
Lysine HCl	Quantity	***	***	***
Lysine sulfate	Quantity	***	***	***
Liquid lysine	Quantity	***	***	***
All in-scope lysine	Quantity	***	***	276,441
Lysine HCl	Value	***	***	***
Lysine sulfate	Value	***	***	***
Liquid lysine	Value	***	***	***
All in-scope lysine	Value	***	***	447,611
Lysine HCl	Unit value	***	***	***
Lysine sulfate	Unit value	***	***	***
Liquid lysine	Unit value	***	***	***
All in-scope lysine	Unit value	***	***	1,619
Lysine HCl	Share of quantity	***	***	***
Lysine sulfate	Share of quantity	***	***	***
Liquid lysine	Share of quantity	***	***	***
All in-scope lysine	Share of quantity	100.0	100.0	100.0
Lysine HCl	Share of value	***	***	***
Lysine sulfate	Share of value	***	***	***
Liquid lysine	Share of value	***	***	***
All in-scope lysine	Share of value	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “—”.

⁹ Explaining why liquid lysine dominates U.S. production while most lysine imported from China is in dry form, Petitioners noted that, “because dry lysine weighs less than liquid and sulfate form, it is less expensive for the Chinese to ship.” Conference transcript (Mr. Choi), p. 15. However, “dry lysine, which is the bulk of the lysine imported from China, can easily be received and used by customers that typically purchase dry or liquid lysine”. Conference transcript (Mr. Lucas), p. 17. Evonik notes that ***. Petitioner prehearing brief, exh. 1.

CJ Bio *** reported producing dry and liquid lysine in the U.S.. Conference transcript (Mr. Lucas), p. 17; Petitioner prehearing brief, exh. 1. ADM previously also produced dry lysine, but exited that market in 2022 due to import competition from Chinese imports of dry lysine. Conference transcript (Mr. Benson), pp. 13 to 14.

U.S. producers' inventories

Table 3.11 presents U.S. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments. U.S. producers' end-of-period inventories increased annually and were higher in interim 2026 than in interim 2025. The ratios of U.S. producers' end-of-period inventories to U.S. production, to U.S. shipments, and to total shipments increased annually from 2023 to 2025 and were higher in interim 2026 than in interim 2025.

Table 3.11 Lysine: U.S. producers' inventories and their ratio to select items, by period

Quantity in short tons HCl equivalent; ratio in percent; interim is January through March

Item	2023	2024	2025	Interim 2025	Interim 2026
End-of-period inventory quantity	27,784	28,559	33,509	24,193	32,913
Inventory ratio to U.S. production	7.1	7.2	8.9	6.4	8.8
Inventory ratio to U.S. shipments	9.1	9.5	12.1	8.7	11.0
Inventory ratio to total shipments	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. producers' imports from subject sources

No responding U.S. producer reported importing lysine from subject sources during the period. One U.S. producer, ***, reported directly importing lysine from nonsubject sources in interim 2026.

U.S. producers' purchases of imports from subject sources

No responding U.S. producer reported purchases of lysine from 2023 to 2025 and both interim periods.

U.S. employment, wages, and productivity

Table 3.12 shows U.S. producers' employment-related data. The number of production-related workers ("PRWs") decreased annually from 2023 to 2025 and was lower in interim 2026 than in interim 2025. Productivity increased from 2023 to 2024 but decreased from 2024 to 2025, ending 2025 higher than 2023 and was higher in interim 2026 than in interim 2025. Total hours worked decreased from 2023 to 2024 and increased from 2024 to 2025, decreasing overall from 2023 to 2025 and was lower in interim 2026 than in interim 2025. Hours worked per PRW increased annually during 2023 to 2025 but was lower in interim 2026 than in interim 2025. Wages paid decreased from 2023 to 2024, and increased from 2024 to 2025, ending 2025 lower than in 2023, and was slightly higher in interim 2026 than in interim 2025. Hourly wages increased from 2023 to 2024, and decreased from 2024 to 2025, ending 2025 higher than in 2023, and was higher in interim 2026 than in interim 2025. Unit labor costs decreased from 2023 to 2024 and increased from 2024 to 2025 by nearly the same amount, leaving unit labor costs unchanged from 2023 to 2025 but were higher in interim 2026 compared to interim 2025.

Table 3.12 Lysine: U.S. producers' employment related information, by period

Interim is January through March

Item	2023	2024	2025	Interim 2025	Interim 2026
Production and related workers (PRWs) (number)	665	575	537	531	513
Total hours worked (1,000 hours)	1,101	960	1,014	256	240
Hours worked per PRW (hours)	1,656	1,670	1,888	482	468
Wages paid (\$1,000)	43,182	40,597	41,326	10,637	10,702
Hourly wages (dollars per hour)	\$39.22	\$42.29	\$40.76	\$41.55	\$44.59
Productivity (short tons HCl equivalent per 1,000 hours)	355.0	415.9	370.5	368.2	387.9
Unit labor costs (dollars per short ton HCl equivalent)	\$110	\$102	\$110	\$113	\$115

Source: Compiled from data submitted in response to Commission questionnaires.

Part 4: U.S. imports, apparent U.S. consumption, and market shares

U.S. importers

The Commission issued importer questionnaires to 106 firms believed to be importers of subject lysine, as well as to all U.S. producers of lysine.¹ Usable questionnaire responses were received from 25 companies, representing *** percent of U.S. imports from China and *** percent of U.S. imports from nonsubject sources in 2025 under HTS subheading 2922.41.0090, a “basket” category.^{2 3 4} Table 4.1 lists all responding U.S. importers of lysine from China and other sources, their locations, and their shares of U.S. imports, in 2025.

¹ The Commission issued questionnaires to those firms identified in the petitions; staff research; and proprietary, Census-edited Customs import records.

² The coverage figure uses official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2922.41.0090, accessed July 9, 2026, that were adjusted to: (1) remove out-of-scope imports under the primary HTS number using proprietary, Census-edited Customs records for firms that certified they do not import Lysine; (2) add in imports of lysine entered in under other HTS numbers using responses to Commission questionnaires; (3) remove imports of out-of-scope products imported under the primary HTS numbers using responses to Commission questionnaires.

³ Fifteen firms certified they did not import animal grade feed lysine since January 1, 2023. Three firms, ***, initially submitted a completed questionnaire response but later reported they did not import animal grade feed lysine and *** also reported only importing out-of-scope lysine in its questionnaire. Therefore, the data of those firms were used to adjust official import statistics, and they are included in the number of questionnaire submissions.

⁴ Fenchem Inc. submitted a questionnaire in the preliminary phase and accounted for *** percent of U.S. imports of lysine in 2024 but failed to do so in the final phase, despite multiple requests by staff.

Table 4.1 Lysine: U.S. importers, their headquarters, and share of imports within each source, 2025

Share in percent

Firm	Headquarters	China	Nonsubject sources	All import sources
Adisseo	Alpharetta, GA	***	***	***
Asiameica Group	Montvale, NJ	***	***	***
Beans Nutrition	Leonida, NJ	***	***	***
CJ America	Los Angeles, CA	***	***	***
Dongyu	Tustin, CA	***	***	***
ECHEMI	Montclair, CA	***	***	***
Essential Biotech	Oak Brook, IL	***	***	***
Feed Products	St. Louis, MO	***	***	***
FNF Canada	St Marys, ON	***	***	***
FNF USA	Evanston, IL	***	***	***
Fondel	Stratford, ON	***	***	***
Fufeng	Oak Brook, IL	***	***	***
GHW	Missouri City, TX	***	***	***
Green Wave	Orange, CA	***	***	***
Hanley	Belmont, MA	***	***	***
International Flavors	New York, NY	***	***	***
ISKY	Huber Heights, OH	***	***	***
LBB	Norwalk, CT	***	***	***
Matrix	Winnipeg, MB	***	***	***
Provimi	Lewisburg, OH	***	***	***
Ridley	Mankato, MN	***	***	***
SAM Nutrition	Bloomington, MN	***	***	***
Strategic Global	New York, NY	***	***	***
Unichem	Ontario, CA	***	***	***
All firms	Various	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. imports

Table 4.2 and figure 4.1 present data for U.S. imports of lysine from China and all other sources. Subject imports accounted for a vast majority of imports from 2023 until interim 2026, where that majority was sharply reduced.

U.S. imports from China, by both quantity and value, increased annually during 2023 to 2025⁵ ⁶ but were lower in interim 2026 than in interim 2025.⁷ The average unit value of imports from China decreased from 2023 to 2024 and increased from 2024 to 2025, ending 2025 higher than 2023 but was lower in interim 2026 than in interim 2025.

By quantity, nonsubject imports increased sharply from 2023 to 2024 as *** began importing from nonsubject sources in 2024.⁸ There was another sharp jump in imports from nonsubject sources between interim 2025 and interim 2026. The value of nonsubject imports increased annually from 2023 to 2025 and were higher in interim 2026 compared to interim 2025. The unit values of imports from nonsubject sources decreased from 2023 to

⁵ SAM Nutrition, the ***." Email from ***, May 19, 2026.

⁶ While imports from China increased overall from 2024 to 2025, ***. Email from ***, May 19, 2026.

⁷ The decline in imports between the interim periods was largely driven by ***. Email from ***, May 19, 2026. *** both also completely ceased imports from China in interim 2026, further contributing to the sharp decline in subject imports in interim 2026 as ***. Email from ***, July 17, 2026.

⁸ FNF USA ceased imports from nonsubject sources in 2026 due to changes in its customer demand and purchasing requirements. Email from ***, May 29, 2026.

2024, increased from 2024 to 2025, decreasing overall from 2023 to 2025. It was lower in interim 2026 than in interim 2025.

As a ratio to U.S. production, imports from China increased annually from 2023 to 2025 but was notably lower between interim 2026 and interim 2025. The ratio of nonsubject imports to U.S. production remained below *** percent during 2023 to 2025 and interim 2025 but increased to *** percent in interim 2026.

Table 4.2 Lysine: U.S. imports by source and period

Quantity in short tons HCl equivalent; value in 1,000 dollars; unit values in dollars per short ton HCl equivalent; interim period is January through March

Source	Measure	2023	2024	2025	Interim 2025	Interim 2026
China	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
China	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
China	Unit value	***	***	***	***	***
Nonsubject sources	Unit value	***	***	***	***	***
All import sources	Unit value	***	***	***	***	***

Table continued.

Table 4.2 (Continued) Lysine: Share of U.S. imports by source and period

Shares and ratio in percent; ratio represents the ratio to U.S. production; interim is January through March

Source	Measure	2023	2024	2025	Interim 2025	Interim 2026
China	Share of quantity	***	***	***	***	***
Nonsubject sources	Share of quantity	***	***	***	***	***
All import sources	Share of quantity	100.0	100.0	100.0	100.0	100.0
China	Share of value	***	***	***	***	***
Nonsubject sources	Share of value	***	***	***	***	***
All import sources	Share of value	100.0	100.0	100.0	100.0	100.0
China	Ratio	***	***	***	***	***
Nonsubject sources	Ratio	***	***	***	***	***
All import sources	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires and compiled from official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2922.41.0090, accessed July 9, 2026. Official U.S. import statistics were adjusted to: (1) remove out-of-scope imports under the primary HTS number using proprietary, Census-edited Customs records for firms that certified they do not import Lysine; (2) add in imports of Lysine entered in under other HTS numbers using responses to Commission questionnaires; (3) remove imports of out-of-scope products imported under the primary HTS numbers using responses to Commission questionnaires; (4) remove certain imports under the primary HTS number whose average unit value were anomalously high (>7,250 dollars per short ton), many of those entries were reported by importers whose firm names indicated that the merchandise was likely related to pharmaceutical or nutraceutical grade lysine. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Figure 4.1 Lysine: U.S. import quantities and average unit values, by source and period

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Table 4.3 presents data for U.S. importers' U.S. shipments of lysine from China in 2025, by product type and mixture status. Lysine HCl that is not mixed or blended accounted for the majority of U.S. importers' U.S. imports from China in 2025. Lysine HCl accounted for *** of U.S. shipments of lysine from China that were mixed or blended.

Table 4.3 Lysine: U.S. importers' U.S. shipments from China, by product type and mixture status, 2025

Quantity in short tons HCl equivalent; value in \$1,000; unit value in dollars per short ton; shares and ratios to apparent consumption quantity in percent

Source	Measure	Not mixed or blended	Mixed or blended	All mixtures
Lysine HCl	Quantity	***	***	***
Lysine sulfate	Quantity	***	***	***
Liquid lysine	Quantity	***	***	***
All in-scope lysine	Quantity	***	***	***
Lysine HCl	Value	***	***	***
Lysine sulfate	Value	***	***	***
Liquid lysine	Value	***	***	***
All in-scope lysine	Value	***	***	***
Lysine HCl	Unit value	***	***	***
Lysine sulfate	Unit value	***	***	***
Liquid lysine	Unit value	***	***	***
All in-scope lysine	Unit value	***	***	***
Lysine HCl	Share of quantity	***	***	***
Lysine sulfate	Share of quantity	***	***	***
Liquid lysine	Share of quantity	***	***	***
All in-scope lysine	Share of quantity	100.0	100.0	100.0
Lysine HCl	Share of value	***	***	***
Lysine sulfate	Share of value	***	***	***
Liquid lysine	Share of value	***	***	***
All in-scope lysine	Share of value	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Table 4.4 presents data for U.S. importers' U.S. shipments of lysine from nonsubject sources in 2025, by product type and mixture status. *** U.S. shipments of lysine from nonsubject sources were lysine HCl that were not mixed or blended.

Table 4.4 Lysine: U.S. importers' U.S. shipments from nonsubject sources, by product type and mixture status, 2025

Quantity in short tons HCl equivalent; value in \$1,000; unit value in dollars per short ton; shares and ratios to apparent consumption quantity in percent

Source	Measure	Not mixed or blended	Mixed or blended	All mixtures
Lysine HCl	Quantity	***	***	***
Lysine sulfate	Quantity	***	***	***
Liquid lysine	Quantity	***	***	***
All in-scope lysine	Quantity	***	***	***
Lysine HCl	Value	***	***	***
Lysine sulfate	Value	***	***	***
Liquid lysine	Value	***	***	***
All in-scope lysine	Value	***	***	***
Lysine HCl	Unit value	***	***	***
Lysine sulfate	Unit value	***	***	***
Liquid lysine	Unit value	***	***	***
All in-scope lysine	Unit value	***	***	***
Lysine HCl	Share of quantity	***	***	***
Lysine sulfate	Share of quantity	***	***	***
Liquid lysine	Share of quantity	***	***	***
All in-scope lysine	Share of quantity	100.0	***	100.0
Lysine HCl	Share of value	***	***	***
Lysine sulfate	Share of value	***	***	***
Liquid lysine	Share of value	***	***	***
All in-scope lysine	Share of value	100.0	***	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.⁹ Negligible imports are generally defined in the Act, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.¹⁰ Table 4.5 presents imports during the 12 month period preceding the filing of the petition. Imports from China accounted for *** percent of total imports of lysine by quantity from May 2024 through April 2025.

Table 4.5 Lysine: U.S. imports in the twelve-month period preceding the filing of the petition, May 2024 through April 2025

Quantity in short tons HCl equivalent; share of quantity in percent

Source of imports	Quantity	Share of quantity
China	***	***
Nonsubject sources	***	***
All import sources	***	100.0

Source: Compiled from data submitted in response to Commission questionnaires and compiled from official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2922.41.0090, accessed June 1, 2026. Official U.S. import statistics were adjusted to: (1) remove out-of-scope imports under the primary HTS number using proprietary, Census-edited Customs records for firms that certified they do not import Lysine; (2) add in imports of Lysine entered in under other HTS numbers using responses to Commission questionnaires; (3) remove imports of out-of-scope products imported under the primary HTS numbers using responses to Commission questionnaires; (4) remove certain imports under the primary HTS number whose average unit value were anomalously high (>7,250 dollars per short ton), many of those entries were reported by importers whose firm names indicated that the merchandise was likely related to pharmaceutical or nutraceutical grade lysine. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

⁹ Sections 703(a)(1), 705(b)(1), 733(a)(1), and 735(b)(1) of the Act (19 U.S.C. §§ 1671b(a)(1), 1671d(b)(1), 1673b(a)(1), and 1673d(b)(1)).
¹⁰ Section 771 (24) of the Act (19 U.S.C § 1677(24)).

Apparent U.S. consumption and market shares

Quantity

Table 4.6 and figure 4.2 present data on apparent U.S. consumption and U.S. market shares by quantity for lysine. By quantity, apparent U.S. consumption fluctuated, increasing from 2023 to 2024 and decreasing from 2024 to 2025 by almost the same amount, ending 2025 only slightly higher than in 2023. The increase in apparent U.S. consumption during 2023 to 2024 largely reflects the increase in imports from China, while the decrease from 2024 to 2025 reflects the decrease in U.S. producers' U.S. shipments which outweighed the increase in imports from China in that year. Apparent U.S. consumption was lower in interim 2026 than in interim 2025, reflecting a sharp decline in imports from China, despite higher U.S. producers' U.S. shipments.

U.S. producers' market share decreased annually from 2023 to 2025 but was higher in interim 2026 than in interim 2025. Offsetting the trends in market share of U.S. producers, the market share of U.S. imports from China increased annually from 2023 to 2025 and was lower in interim 2026 than in interim 2025. The market share of U.S. shipments of nonsubject imports was increasing from less than *** percentage point during 2023 to 2025 and was *** percentage points higher in interim 2026 compared to interim 2025.

Table 4.6 Lysine: Apparent U.S. consumption and market shares based on quantity, by source and period

Quantity in short tons HCl equivalent; shares in percent; interim is January through March

Source	Measure	2023	2024	2025	Interim 2025	Interim 2026
U.S. producer: Ajinomoto	Quantity	***	***	***	***	***
U.S. producer: ADM	Quantity	***	***	***	***	***
U.S. producer: CJ Bio	Quantity	***	***	***	***	***
U.S. producer: Evonik	Quantity	***	***	***	***	***
U.S. producers: All	Quantity	306,011	299,694	276,441	69,194	75,041
China	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
All sources	Quantity	***	***	***	***	***
U.S. producer: Ajinomoto	Share	***	***	***	***	***
U.S. producer: Archer Daniels Midland	Share	***	***	***	***	***
U.S. producer: CJ Bio	Share	***	***	***	***	***
U.S. producer: Evonik	Share	***	***	***	***	***
U.S. producers: All	Share	***	***	***	***	***
China	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires and compiled from official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2922.41.0090, accessed July 9, 2026. Official U.S. import statistics were adjusted to: (1) remove out-of-scope imports under the primary HTS number using proprietary, Census-edited Customs records for firms that certified they do not import lysine; (2) add in imports of Lysine entered in under other HTS numbers using responses to Commission questionnaires; (3) remove imports of out-of-scope products imported under the primary HTS numbers using responses to Commission questionnaires; (4) remove certain imports under the primary HTS number whose average unit value were anomalously high (>7,250 dollars per short ton), many of those entries were reported by importers whose firm names indicated that the merchandise was likely related to pharmaceutical or nutraceutical grade lysine. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Figure 4.2 Lysine: Apparent U.S. consumption based on quantity, by source and period

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires and compiled from official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2922.41.0090, accessed July 9, 2026. Official U.S. import statistics were adjusted to: (1) remove out-of-scope imports under the primary HTS number using proprietary, Census-edited Customs records for firms that certified they do not import lysine; (2) add in imports of Lysine entered in under other HTS numbers using responses to Commission questionnaires; (3) remove imports of out-of-scope products imported under the primary HTS numbers using responses to Commission questionnaires; (4) remove certain imports under the primary HTS number whose average unit value were anomalously high (>7,250 dollars per short ton), many of those entries were reported by importers whose firm names indicated that the merchandise was likely related to pharmaceutical or nutraceutical grade lysine. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Value

Table 4.7 and figure 4.3 present data on apparent U.S. consumption and U.S. market shares by value for lysine. The value of apparent U.S. consumption decreased annually during 2023 to 2025. The overall decrease in apparent U.S. consumption during this period reflects the decrease in the value of U.S. producers' U.S. shipments. The value of apparent U.S. consumption was lower in interim 2026 than in interim 2025.

U.S. producers' market share, by value, decreased annually but was higher in interim 2026 compared to interim 2025. The market share of U.S. shipments of imports from China increased annually from 2023 to 2025 but was lower in interim 2026 than in interim 2025. The market share of U.S. shipments of nonsubject imports was largely unchanged, increasingly overall by less than *** percentage point during 2023 to 2025, but reached a peak of *** percent in interim 2026.

Table 4.7 Lysine: Apparent U.S. consumption and market shares based on value, by source and period

Value in 1,000 dollars; shares in percent; interim is January through March

Source	Measure	2023	2024	2025	Interim 2025	Interim 2026
U.S. producer: Ajinomoto	Value	***	***	***	***	***
U.S. producer: ADM	Value	***	***	***	***	***
U.S. producer: CJ Bio	Value	***	***	***	***	***
U.S. producer: Evonik	Value	***	***	***	***	***
U.S. producers: All	Value	533,306	481,122	447,611	111,653	115,977
China	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
All sources	Value	***	***	***	***	***
U.S. producer: Ajinomoto	Share	***	***	***	***	***
U.S. producer: Archer Daniels Midland	Share	***	***	***	***	***
U.S. producer: CJ Bio	Share	***	***	***	***	***
U.S. producer: Evonik	Share	***	***	***	***	***
U.S. producers: All	Share	***	***	***	***	***
China	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires and compiled from official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2922.41.0090, accessed July 9, 2026. Official U.S. import statistics were adjusted to: (1) remove out-of-scope imports under the primary HTS number using proprietary, Census-edited Customs records for firms that certified they do not import Lysine; (2) add in imports of Lysine entered in under other HTS numbers using responses to Commission questionnaires; (3) remove imports of out-of-scope products imported under the primary HTS numbers using responses to Commission questionnaires; (4) remove certain imports under the primary HTS number whose average unit value were anomalously high (>7,250 dollars per short ton), many of those entries were reported by importers whose firm names indicated that the merchandise was likely related to pharmaceutical or nutraceutical grade lysine. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Figure 4.3 Lysine: Apparent U.S. consumption based on value, by source and period

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires and compiled from official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2922.41.0090, accessed July 9, 2026. Official U.S. import statistics were adjusted to: (1) remove out-of-scope imports under the primary HTS number using proprietary, Census-edited Customs records for firms that certified they do not import Lysine; (2) add in imports of Lysine entered in under other HTS numbers using responses to Commission questionnaires; (3) remove imports of out-of-scope products imported under the primary HTS numbers using responses to Commission questionnaires; (4) remove certain imports under the primary HTS number whose average unit value were anomalously high (>7,250 dollars per short ton), many of those entries were reported by importers whose firm names indicated that the merchandise was likely related to pharmaceutical or nutraceutical grade lysine. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Tables 4.8, 4.9, and 4.10 present data on U.S. producers and U.S. importers' U.S. shipments of lysine HCl, lysine sulfate, and liquid lysine, respectively. U.S. producers accounted for *** U.S. shipments of liquid lysine and *** liquid sulfate, except in 2025 when there was a small amount of lysine sulfate from China. U.S. shipments of imports from China accounted for the majority of lysine HCl in each year during 2023 to 2025 and interim periods.

Table 4.8 Lysine HCl: U.S. producers' and U.S. importers' U.S. shipments, by period and source

Quantity in short tons HCl equivalent; shares and ratios in percent; interim period is January through March

Source	Measure	2023	2024	2025	Interim 2025	Interim 2026
U.S. producers	Quantity	***	***	***	***	***
China	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
All sources	Quantity	***	***	***	***	***
U.S. producers	Share	***	***	***	***	***
China	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0
U.S. producers	Ratio	***	***	***	***	***
China	Ratio	***	***	***	***	***
Nonsubject sources	Ratio	***	***	***	***	***
All import sources	Ratio	***	***	***	***	***
All sources	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Ratio represents U.S. shipments to apparent consumption. Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Table 4.9 Lysine sulfate: U.S. producers' and U.S. importers' U.S. shipments, by period and source

Quantity in short tons HCl equivalent; shares and ratios in percent; interim period is January through March

Source	Measure	2023	2024	2025	Interim 2025	Interim 2026
U.S. producers	Quantity	***	***	***	***	***
China	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
All sources	Quantity	***	***	***	***	***
U.S. producers	Share	***	***	***	***	***
China	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0
U.S. producers	Ratio	***	***	***	***	***
China	Ratio	***	***	***	***	***
Nonsubject sources	Ratio	***	***	***	***	***
All import sources	Ratio	***	***	***	***	***
All sources	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Table 4.10 Liquid lysine: U.S. producers' and U.S. importers' U.S. shipments, by period and source

Quantity in short tons HCl equivalent; shares and ratios in percent; interim period is January through March

Source	Measure	2023	2024	2025	Interim 2025	Interim 2026
U.S. producers	Quantity	***	***	***	***	***
China	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
All sources	Quantity	***	***	***	***	***
U.S. producers	Share	***	***	***	***	***
China	Share	***	***	***	***	***
Nonsubject sources	Share	***	***	***	***	***
All import sources	Share	***	***	***	***	***
All sources	Share	100.0	100.0	100.0	100.0	100.0
U.S. producers	Ratio	***	***	***	***	***
China	Ratio	***	***	***	***	***
Nonsubject sources	Ratio	***	***	***	***	***
All import sources	Ratio	***	***	***	***	***
All sources	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Part 5: Pricing data

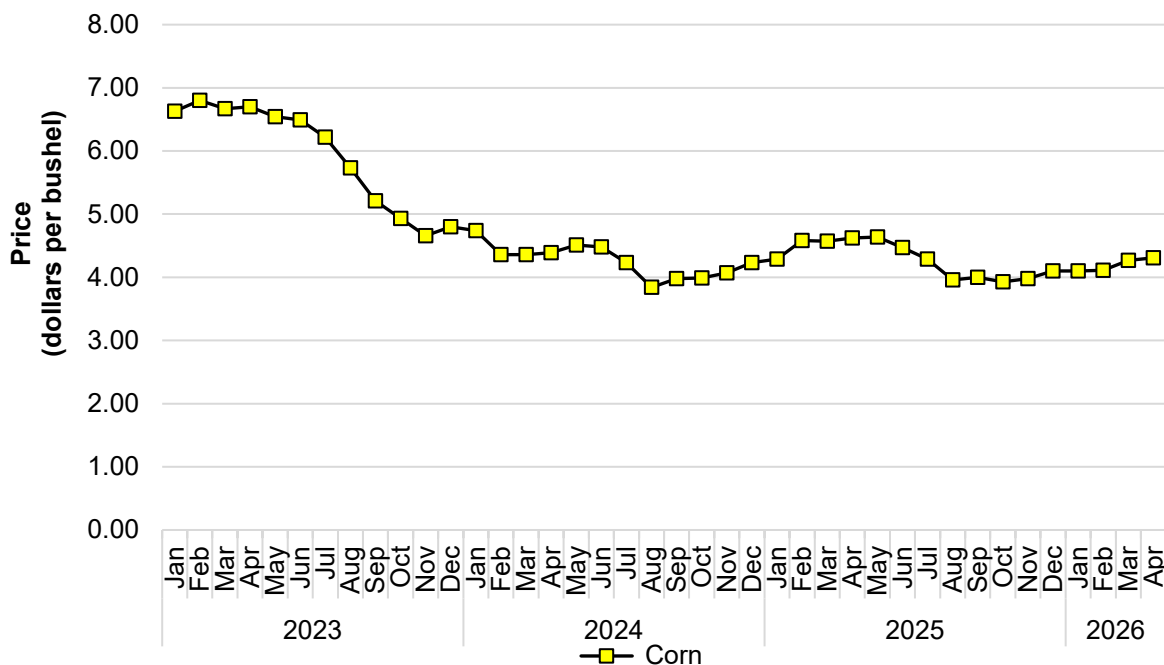
Factors affecting prices

Raw material costs

Lysine is created from the starch of plant materials such as corn, sugar beets, and wheat.¹ Domestic producers' manufacturing plants all rely on corn as the feedstock to produce lysine, and it would be "incredibly difficult" to change feedstock to a different crop.² Raw materials, as a share of U.S. producers' cost of goods sold ("COGS"), declined from *** percent in 2023 to *** percent in 2025. During January and March 2026, raw materials were *** percent of COGS.

This decrease in the share of COGS reflects decreasing corn prices over the period, as shown in figure 5.1 and table 5.1. Monthly U.S. corn prices were highest in 2023 and generally decreased through mid-2024, at which point prices began to fluctuate upwards.

Figure 5.1 Raw materials: U.S. corn prices by month, January 2023 to April 2026



Source: U.S. Department of Agriculture, National Agriculture Statistical Service, www.nass.usda.gov/Charts_and_Maps/graphics/data/pricecn.txt, retrieved June 4, 2026.

¹ Conference transcript, pp. 46-47 (Benson).

² Conference transcript, pp. 56-57 (Walley, Choi, and Nel).

Table 5.1 Raw materials: U.S. corn prices by month, January 2023 to April 2026

Dollars per bushel

Month	2023	2024	2025	2026
January	6.63	4.74	4.29	4.10
February	6.80	4.36	4.58	4.11
March	6.67	4.36	4.57	4.27
April	6.70	4.39	4.62	4.31
May	6.54	4.51	4.64	NA
June	6.49	4.48	4.47	NA
July	6.22	4.23	4.29	NA
August	5.73	3.84	3.96	NA
September	5.21	3.98	4.00	NA
October	4.93	3.99	3.93	NA
November	4.66	4.07	3.98	NA
December	4.80	4.23	4.10	NA

Source: U.S. Department of Agriculture, National Agriculture Statistical Service, www.nass.usda.gov/Charts_and_Maps/graphics/data/pricecn.txt, retrieved June 4, 2026.

Transportation costs to the U.S. market

Transportation costs for lysine shipped from China to the United States averaged 8.5 percent of LDP value for China during 2025. These estimates were derived from official import data and represent the transportation and other charges on imports.³

U.S. inland transportation costs

Most responding U.S. producers (3 of 4) and importers (16 of 20) reported that they typically arrange transportation to their customers. Most U.S. producers reported that their U.S. inland transportation costs ranged from 8 to 10 percent while most importers reported costs of 3 to 10 percent.

³ The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2025 and then dividing by the customs value based on the HTS statistical reporting number 2922.41.0090.

Pricing practices

Pricing methods

U.S. producers reported setting prices using transaction-by-transaction negotiations and contracts and importers mostly reported similarly (table 5.2). Seven of 19 importers also reported using set price lists. Petitioner stated that prices are quoted on an HCl-equivalent basis based on the lysine content of the product.⁴

Table 5.2 Lysine: Count of U.S. producers' and importers' reported price setting methods

Method	U.S. producers	U.S. importers
Transaction-by-transaction	4	18
Contract	4	14
Set price list	0	7
Other	0	0
Responding firms	4	19

Source: Compiled from data submitted in response to Commission questionnaires.

Note: The sum of responses down may not add up to the total number of responding firms as each firm was instructed to check all applicable price setting methods employed.

U.S. producers reported selling approximately half of their lysine under long-term contracts with a sizeable share of the remaining sales sold under annual contracts (table 5.3). Importers, on the other hand, mostly reported sales under short-term contracts.

Table 5.3 Lysine: U.S. producers' and importers' shares of commercial U.S. shipments by type of sale, 2025

Share in percent

Sale type	U.S. producers	Subject U.S. importers
Long-term contracts	***	***
Annual contract	***	***
Short-term contracts	***	***
Spot sales	***	***
All sales types	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

⁴ Petitioners prehearing brief, p. 8.

Most U.S. producers reported that short-term contracts do not allow for price renegotiation while annual and long-term contracts do, some fix price and quantity, and all firms reported that prices are not indexed to raw material prices. Similarly, most importers reported that short-term contracts do not allow price renegotiation and some of the few firms reporting annual contracts reported allowing price renegotiation. Most importers reported some combination of fixing price and/or quantity in their contracts and most reported that contracts do not index to raw material costs.

One purchaser reported that it purchases product daily, 10 purchase weekly, 8 purchase monthly, and 5 purchase quarterly.⁵ Twenty-one of 22 responding purchasers reported that their purchasing frequency had not changed since 2023. Most purchasers contact one to four suppliers before making a purchase.

Sales terms and discounts

U.S. producers (3 of 4) and importers (13 of 18) typically quote prices on a delivered basis.⁶ Some producers reported offering quantity or volume discounts in addition to early payment discounts. Most importers reported no discount policy, but some reported offering quantity or volume discounts and some early payment discounts as well.

Included services

U.S. producers and importers were asked how frequently they include related services (such as services involving equipment used in the storage of, or blending of, lysine into animal feed) in the price that they charge for the lysine they sell. U.S. producer *** reported that it may provide liquid lysine systems/dosing equipment, technical support, and analytics services in certain supply agreements. U.S. producer *** reported that it provides ***. Thirteen of 15 responding importers reported that they rarely or never included related services in the prices they charged for lysine imported from China. Importer *** stated it stores the lysine at its warehouse and will either arrange for customers to pick up or will ship in full or less than full truckloads.

⁵ Purchaser*** reported that it purchases either on a monthly or quarterly basis, depending on need.

⁶ Two importers reported quoting both on a delivered and f.o.b. basis.

Price leadership

Many purchasers reported price leaders including U.S. producers CJ Bio (6 purchasers), ADM (3), Ajinomoto and Evonik (1 each), and importers SAM Nutrition (3), Eppen (3), Beans Nutrition (2), and NutraBlend.

Price data

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following lysine products shipped to unrelated U.S. customers during January 2023 to March 2026.

Product 1. Dry, Animal feed grade L-lysine HCl (CAS: 657-27-2) with a minimum of 40.0 percent lysine by weight, in HCl equivalent

Product 2. Dry, Animal feed grade L-lysine sulfate (CAS: 60343-69-3) with a minimum of 40.0 percent lysine by weight, in HCl equivalent

Product 3. Liquid, Animal feed grade L-lysine (CAS: 56-87-1) with a minimum of 40.0 percent lysine by weight, in HCl equivalent

Four U.S. producers and nine importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.⁷ Pricing data reported by these firms accounted for virtually all of U.S. producers' U.S. shipments of lysine and 86.8 percent of U.S. shipments of subject imports from China.⁸ The vast majority of price data for lysine from China was concentrated in pricing product 1. Price data for products 1 to 3 are presented in tables 5.4 to 5.6 and figures 5.2 to 5.4.

⁷ Per-unit pricing data are calculated from total quantity and total value data provided by U.S. producers and importers. The precision and variation of these figures may be affected by rounding, limited quantities, and producer or importer estimates.

⁸ Pricing coverage is based on U.S. shipments reported in questionnaires.

Table 5.4 Lysine: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by source and quarter

Quantity in 1,000 pounds HCl equivalent; Prices in dollars per pound HCl equivalent; Margins in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***
2024 Q1	***	***	***	***	***
2024 Q2	***	***	***	***	***
2024 Q3	***	***	***	***	***
2024 Q4	***	***	***	***	***
2025 Q1	***	***	***	***	***
2025 Q2	***	***	***	***	***
2025 Q3	***	***	***	***	***
2025 Q4	***	***	***	***	***
2026 Q1	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Product 1: Dry, animal feed grade L-lysine HCl (CAS: 657-27-2) with a minimum of 40.0 percent lysine by weight, in HCl equivalent.

Figure 5.2 Lysine: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by source and quarter

Price of product 1

* * * * *

Volume of product 1

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Product 1: Dry, animal feed grade L-lysine HCl (CAS: 657-27-2) with a minimum of 40.0 percent lysine by weight, in HCl equivalent.

Table 5.5 Lysine: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by source and quarter

Quantity in 1,000 pounds HCl equivalent; Prices in dollars per pound HCl equivalent; Margins in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***
2024 Q1	***	***	***	***	***
2024 Q2	***	***	***	***	***
2024 Q3	***	***	***	***	***
2024 Q4	***	***	***	***	***
2025 Q1	***	***	***	***	***
2025 Q2	***	***	***	***	***
2025 Q3	***	***	***	***	***
2025 Q4	***	***	***	***	***
2026 Q1	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Product 2: Dry, animal feed grade L-lysine sulfate (CAS: 60343-69-3) with a minimum of 40.0 percent lysine by weight, in HCl equivalent.

Figure 5.3 Lysine: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, by source and quarter

Price of product 2

* * * * *

Volume of product 2

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Product 2: Dry, animal feed grade L-lysine sulfate (CAS: 60343-69-3) with a minimum of 40.0 percent lysine by weight, in HCl equivalent.

Table 5.6 Lysine: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by source and quarter

Quantity in 1,000 pounds HCl equivalent; Prices in dollars per pound HCl equivalent; Margins in percent

Period	U.S. price	U.S. quantity	China price	China quantity	China margin
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***
2024 Q1	***	***	***	***	***
2024 Q2	***	***	***	***	***
2024 Q3	***	***	***	***	***
2024 Q4	***	***	***	***	***
2025 Q1	***	***	***	***	***
2025 Q2	***	***	***	***	***
2025 Q3	***	***	***	***	***
2025 Q4	***	***	***	***	***
2026 Q1	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Product 3: Liquid, animal feed grade L-lysine (CAS: 56-87-1) with a minimum of 40.0 percent lysine by weight, in HCl equivalent.

Figure 5.4 Lysine: Weighted-average f.o.b. prices and quantities of domestic and imported product 3, by source and quarter

Price of product 3						
*	*	*	*	*	*	*
Volume of product 3						
*	*	*	*	*	*	*

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Product 3: Liquid, animal feed grade L-lysine (CAS: 56-87-1) with a minimum of 40.0 percent lysine by weight, in HCl equivalent.

Price trends

In general, U.S. prices increased during January 2023 to March 2026. Table 5.7 summarizes the price trends, by country and by product. As shown in the table, domestic price increases ranged from *** percent to *** percent during January 2023 to March 2026 while import prices for pricing product 1 decreased by *** percent. Domestic prices for pricing product 2 decreased by *** percent.

Table 5.7 Lysine: Summary of price data, by product and source, January 2023 to March 2026

Prices in dollars per pound HCl equivalent; Quantity in 1,000 pounds HCl equivalent; Change in percent

Product	Source	Number of quarters	Quantity	Low price	High price	First quarter price	Last quarter price	Change over period
Product 1	United States	13	***	***	***	***	***	***
Product 1	China	13	***	***	***	***	***	***
Product 2	United States	13	***	***	***	***	***	***
Product 2	China	1	***	***	***	***	***	***
Product 3	United States	13	***	***	***	***	***	***
Product 3	China	—	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Percent change column is percentage change from the first quarter 2023 to the last quarter in 2026.

Table 5.8 Lysine: Indexed U.S. producer and importer prices, by quarter

Index in percent, 2023 Q1=100.0 percent

Period	Product 1 - United States	Product 1 - China	Product 2 – United States	Product 3 – United States
2023 Q1	100.0	100.0	100.0	100.0
2023 Q2	***	***	***	***
2023 Q3	***	***	***	***
2023 Q4	***	***	***	***
2024 Q1	***	***	***	***
2024 Q2	***	***	***	***
2024 Q3	***	***	***	***
2024 Q4	***	***	***	***
2025 Q1	***	***	***	***
2025 Q2	***	***	***	***
2025 Q3	***	***	***	***
2025 Q4	***	***	***	***
2026 Q1	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: There were insufficient price data to calculate an index for pricing products 2 and 3 from China.

Figure 5.5 Lysine: Indexed U.S. producer and importer prices, by quarter

* * * * *

Index in percent, 2023 Q1=100.0 percent Source: Compiled from data submitted in response to Commission questionnaires.

Price comparisons

As shown in table 5.9, prices for product imported from China were below those for U.S.-produced product in 13 of 14 instances (** thousand pounds HCl equivalent); margins of underselling ranged from ** percent to ** percent. In the remaining instance (** thousand pounds HCl equivalent), prices for product from China were ** percent above prices for the domestic product.

Table 5.9 Lysine: Instances of underselling and overselling and the range and average margins, by product

Quantity in 1,000 pounds HCl equivalent; Margins in percent

Products	Type	Number of instances	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	13	***	***	***	***
Product 2	Underselling	—	***	***	***	***
Product 3	Underselling	—	***	***	***	***
All products	Underselling	13	***	***	***	***
Product 1	Overselling	—	***	***	***	***
Product 2	Overselling	1	***	***	***	***
Product 3	Overselling	—	***	***	***	***
All products	Overselling	1	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

Table 5.10 Lysine: Instances of underselling and overselling and the range and average of margins, by year

Quantity in 1,000 pounds HCl equivalent; Margins in percent

Period	Type	Number of instances	Quantity	Average margin	Min margin	Max margin
2023	Underselling	4	***	***	***	***
2024	Underselling	4	***	***	***	***
2025	Underselling	4	***	***	***	***
January through March 2026	Underselling	1	***	***	***	***
All periods	Underselling	13	***	***	***	***
2023	Overselling	—	***	***	***	***
2024	Overselling	—	***	***	***	***
2025	Overselling	1	***	***	***	***
January through March 2026	Overselling	—	***	***	***	***
All periods	Overselling	1	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

Lost sales and lost revenue

In the preliminary phase of the investigation, the Commission requested that U.S. producers of lysine report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of lysine from China during January 2023 to March 2026. Two U.S. producers submitted lost sales and lost revenue allegations and identified 36 firms with which they lost sales or revenue (33 consisting of lost sales allegations, 2 consisting of lost revenue allegations, and 1 consisting of both types of allegations). Allegations were listed to have occurred throughout the period of investigation with a majority of the claims occurring in 2023 and 2024.

In the final phase of the investigation, of the four responding U.S. producers, three reported that they had to reduce prices, two reported that they had to roll back announced price increases, and three firms reported that they had lost sales.

Staff contacted 107 purchasers and received responses from 23 purchasers.⁹ Responding purchasers reported purchasing *** short tons HCl equivalent of lysine during January 2023 to March 2026 (table 5.11).

Of the 23 responding purchasers, 16 reported that, since 2023, they had purchased imported lysine from China instead of U.S.-produced product. Twelve of these purchasers reported that subject import prices were lower than U.S.-produced product, and nine of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. Nine purchasers estimated the quantity of lysine from China purchased instead of domestic product; quantities ranged from *** short tons to *** short tons HCl equivalent (table 5.12). Five purchasers identified availability issues as the non-price reason for purchasing imported rather than U.S.-produced product, and one purchaser reported that it required a different form of lysine (lysine sulfate).

Of the 23 responding purchasers, 3 reported that U.S. producers had reduced prices in order to compete with lower-priced imports from China; 16 reported that they did not know (table 5.13). The reported estimated price reduction ranged from *** to *** percent.

⁹ Five purchasers submitted lost sales lost revenue survey responses in the preliminary phase, but did not submit purchaser questionnaire responses in the final phase (***). Four of these purchasers reported lost sales (*** short tons) and one reported price reductions of *** percent since 2022.

Quantity in short tons HCl equivalent; Change in shares in percentage points

Source: Compiled from data submitted in response to Commission questionnaires.

5.16

Quantity in short tons HCl equivalent equivalent

Source: Compiled from data submitted in response to Commission questionnaires.

5.17

Count in number of firms reporting; price reductions in percent

Source: Compiled from data submitted in response to Commission questionnaires.

Part 6: Financial experience of U.S. producers

Background¹

Four firms, ADM, Ajinomoto, CJ Bio, and Evonik, provided usable financial results on their lysine operations.² U.S. producers reported financial data based in accordance with IFRS and GAAP.³

The industry's net sales are composed of commercial sales, internal consumption, and transfers.⁴ During the period examined (January 1, 2023, through March 31, 2026) commercial sales represented *** percent of total net sales quantity.⁵ Figure 6.1 presents ADM, Ajinomoto, CJ Bio, and Evonik's share of the total reported net sales quantity in 2025.

¹ The following abbreviations are used in the tables and/or text of this section: generally accepted accounting principles ("GAAP"), fiscal year ("FY"), net sales ("NS"), cost of goods sold ("COGS"), selling, general, and administrative expenses ("SG&A expenses"), average unit values ("AUVs"), research and development expenses ("R&D expenses"), and return on assets ("ROA").

² The trade and financial sections reconciled for the four U.S. producers. Staff verified the results of ADM with its corporate records. ***. Staff verification report, ADM, July 2026.

³ ***. U.S. producer questionnaire responses, section 3.2.

⁴ ***. U.S. producer questionnaire responses, section 3.9a.

⁵ ADM and Evonik produced in-scope lysine that accounted for *** percent of their net sales in 2025. For CJ Bio, *** percent of its net sales quantity was for lysine and ***. For Ajinomoto, *** percent was for lysine, *** and out-of-scope products manufactured were ***. U.S. producers' questionnaire responses to question 3.4.

Figure 6.1 Lysine: U.S. producers’ share of net sales quantity in 2025, by firm

* * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Operations on lysine

Table 6.1 presents data on the U.S. producers’ total operations in relation to lysine, while table 6.2 presents corresponding changes in AUVs for operations. Table 6.3 presents selected company-specific financial data.

Table 6.1 Lysine: U.S. producers' results of operations, by item and period

Quantity in short tons HCl equivalents; value in 1,000 dollars; ratios in percent; interim is January through March

Item	Measure	2023	2024	2025	Interim 2025	Interim 2026
Total net sales	Quantity	***	***	***	***	***
Total net sales	Value	***	***	***	***	***
COGS: Dextrose costs	Value	***	***	***	***	***
COGS: Ammonia costs	Value	***	***	***	***	***
COGS: Fermentation media costs	Value	***	***	***	***	***
COGS: Other material inputs costs	Value	***	***	***	***	***
COGS: All raw materials cost	Value	***	***	***	***	***
COGS: Direct labor	Value	***	***	***	***	***
COGS: Other factory	Value	***	***	***	***	***
Less: Byproduct revenue	Value	***	***	***	***	***
COGS: Total	Value	***	***	***	***	***
Gross profit or (loss)	Value	***	***	***	***	***
SG&A expenses	Value	***	***	***	***	***
Operating income or (loss)	Value	***	***	***	***	***
Interest expense	Value	***	***	***	***	***
All other expenses	Value	***	***	***	***	***
All other income	Value	***	***	***	***	***
Net income or (loss)	Value	***	***	***	***	***
Depreciation/amortization	Value	***	***	***	***	***
Cash flow	Value	***	***	***	***	***
COGS: Dextrose costs	Ratio to NS	43.5	40.4	37.0	35.8	38.6
COGS: Ammonia costs	Ratio to NS	8.9	8.1	8.1	7.5	8.7
COGS: Fermentation media costs	Ratio to NS	7.5	6.1	7.4	6.4	7.4
COGS: Other material inputs costs	Ratio to NS	8.5	8.2	6.2	6.2	7.1
COGS: Raw materials	Ratio to NS	68.4	62.9	58.7	55.9	61.8
COGS: Direct labor	Ratio to NS	7.2	7.7	7.8	7.1	7.3
COGS: Other factory	Ratio to NS	22.3	24.5	31.0	24.3	29.5
Less: Byproduct revenue	Ratio to NS	1.2	1.0	0.7	1.2	0.7
COGS: Total	Ratio to NS	96.7	94.1	96.8	86.2	97.9
Gross profit	Ratio to NS	3.3	5.9	3.2	13.8	2.1
SG&A expense	Ratio to NS	5.9	5.8	4.8	5.1	4.7
Operating income or (loss)	Ratio to NS	(2.7)	0.1	(1.6)	8.6	(2.6)
Net income or (loss)	Ratio to NS	***	***	***	***	***

Table continued.

Table 6.1 (Continued) Lysine: U.S. producers' results of operations, by item and period

Shares in percent; unit values in dollars per short ton HCl equivalent; count in number of firms reporting; interim is January through March

Item	Measure	2023	2024	2025	Interim 2025	Interim 2026
COGS: Dextrose costs	Share of RM	63.5	64.3	63.1	64.0	62.4
COGS: Ammonia costs	Share of RM	13.1	12.9	13.8	13.5	14.1
COGS: Fermentation media costs	Share of RM	11.0	9.7	12.6	11.4	12.0
COGS: Other material inputs costs	Share of RM	12.4	13.1	10.5	11.2	11.5
COGS: All raw material costs	Share of RM	100.0	100.0	100.0	100.0	100.0
COGS: Dextrose costs	Share of COGS	44.4	42.5	38.0	41.0	39.1
COGS: Ammonia costs	Share of COGS	9.1	8.6	8.3	8.6	8.9
COGS: Fermentation media costs	Share of COGS	7.7	6.4	7.6	7.3	7.5
COGS: All other material inputs costs	Share of COGS	8.6	8.7	6.3	7.1	7.2
COGS: All raw material costs	Share of COGS	69.8	66.1	60.2	64.0	62.7
COGS: Direct labor	Share of COGS	7.4	8.1	8.0	8.2	7.4
COGS: Other factory	Share of COGS	22.8	25.7	31.8	27.9	29.9
COGS: Total	Share of COGS	100.0	100.0	100.0	100.0	100.0
Total net sales	Unit value	1,592	1,525	1,491	1,529	1,434
COGS: Dextrose costs	Unit value	692	617	552	547	553
COGS: Ammonia costs	Unit value	142	124	121	115	125
COGS: Fermentation media costs	Unit value	120	93	110	97	106
COGS: All other material inputs costs	Unit value	135	126	92	95	102
COGS: All raw material costs	Unit value	1,089	959	875	855	887
COGS: Direct labor	Unit value	115	118	116	109	104
COGS: Other factory	Unit value	356	374	463	372	423
COGS less: Byproduct revenue	Unit value	20	16	10	18	9
COGS: Total	Unit value	1,540	1,435	1,444	1,319	1,405
Gross profit or (loss)	Unit value	52	90	48	210	30
SG&A expenses	Unit value	94	89	72	78	68
Operating income or (loss)	Unit value	(42)	2	(24)	132	(38)
Net income or (loss)	Unit value	***	***	***	***	***
Operating losses	Count	2	1	1	0	1
Net losses	Count	2	1	1	0	1
Data	Count	4	4	4	4	4

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Share of raw materials and share of COGS are calculated before the byproduct revenue offset.

Table 6.2 Lysine: Changes in AUVs between comparison periods

Changes in percent

Item	2023–25	2023–24	2024–25	Interim 2025–26
Total net sales	▼(6.3)	▼(4.2)	▼(2.2)	▼(6.2)
COGS: Dextrose costs	▼(20.2)	▼(10.9)	▼(10.4)	▲1.0
COGS: Ammonia costs	▼(15.3)	▼(12.8)	▼(2.9)	▲9.1
COGS: Fermentation media costs	▼(8.4)	▼(22.7)	▲18.6	▲9.2
COGS: All raw material costs	▼(31.5)	▼(6.5)	▼(26.7)	▲6.9
COGS: Raw materials	▼(19.6)	▼(11.9)	▼(8.8)	▲3.7
COGS: Direct labor	▲0.7	▲2.5	▼(1.8)	▼(4.6)
COGS: Other factory	▲30.2	▲5.0	▲23.9	▲13.6
COGS less: Byproduct revenue	▼(49.4)	▼(18.8)	▼(37.7)	▼(47.4)
COGS: Total	▼(6.2)	▼(6.8)	▲0.6	▲6.5

Table continued.

Table 6.2 (Continued) Lysine: Changes in AUVs between comparison periods

Changes in dollars per short ton HCl equivalent

Item	2023–25	2023–24	2024–25	Interim 2025–26
Total net sales	▼(100)	▼(66)	▼(34)	▼(95)
COGS: Dextrose costs	▼(139)	▼(75)	▼(64)	▲6
COGS: Ammonia costs	▼(22)	▼(18)	▼(4)	▲10
COGS: Fermentation media costs	▼(10)	▼(27)	▲17	▲9
COGS: Other material inputs costs	▼(42)	▼(9)	▼(34)	▲7
COGS: All raw material costs	▼(214)	▼(129)	▼(84)	▲32
COGS: Direct labor	▲1	▲3	▼(2)	▼(5)
COGS: Other factory	▲107	▲18	▲89	▲51
COGS less: Byproduct revenue	▼(10)	▼(4)	▼(6)	▼(8)
COGS: Total	▼(96)	▼(105)	▲9	▲86
Gross profit or (loss)	▼(4)	▲38	▼(43)	▼(181)
SG&A expense	▼(22)	▼(6)	▼(16)	▼(11)
Operating income or (loss)	▲18	▲44	▼(26)	▼(170)
Net income or (loss)	▲***	▲***	▼***	▼***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Period changes preceded by a “▲” represent an increase, while period changes preceded by a “▼” represent a decrease.

Table 6.3 Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period**Net sales quantity**

Quantity in short tons HCl equivalents; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period**Net sales value**

Value in 1,000 dollars; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period**COGS**

Value in 1,000 dollars; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period**Gross profit or (loss)**

Value in 1,000 dollars; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

SG&A expenses

Value in 1,000 dollars; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss)

Value in 1,000 dollars; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net income or (loss)

Value in 1,000 dollars; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

COGS to net sales ratio

Ratio in percent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	96.7	94.1	96.8	86.2	97.9

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Gross profit or (loss) to net sales ratio

Ratio in percent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	3.3	5.9	3.2	13.8	2.1

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

SG&A expenses to net sales ratio

Ratio in percent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	5.9	5.8	4.8	5.1	4.7

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss) to net sales ratio

Ratio in percent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	(2.7)	0.1	(1.6)	8.6	(2.6)

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net income or (loss) to net sales ratio

Ratio in percent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit net sales value

Unit values in dollars per short ton HCl equivalent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	1,592	1,525	1,491	1,529	1,434

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit raw material costs

Unit values in dollars per short ton HCl equivalent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	1,089	959	875	855	887

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit direct labor costs

Unit values in dollars per short ton HCl equivalent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	115	118	116	109	104

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit other factory costs

Unit values in dollars per short ton HCl equivalent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	356	374	463	372	423

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit COGS

Unit values in dollars per short ton HCl equivalent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	1,540	1,435	1,444	1,319	1,405

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit gross profit or (loss)

Unit values in dollars per short ton HCl equivalent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	52	90	48	210	30

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit SG&A expenses

Unit values in dollars per short ton HCl equivalent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	94	89	72	78	68

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit operating income or (loss)

Unit values in dollars per short ton HCl equivalent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	(42)	2	(24)	132	(38)

Table continued.

Table 6.3 (Continued) Lysine: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit net income or (loss)

Unit values in dollars per short ton HCl equivalent; interim is January through March

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Shares represent the share of COGS.

Net sales

As shown in table 6.1, the industry's total net sales quantity irregularly decreased, and value decreased each year between 2023 and 2025 and both were lower in January to March 2026 ("interim 2026") than in January to March 2025 ("interim 2025"). Net sales quantity and value decreased by *** percent and *** percent, respectively, between 2023 and 2025, and were *** percent lower in quantity and *** percent lower in value in interim 2026 than in interim 2025. Firms differed in their individual trends.⁶

The industry's total net sales AUVs decreased from \$*** per short ton HCl equivalent in 2023 to \$*** per short ton HCl equivalent in 2025, and were lower in interim 2026, at \$*** per short ton equivalent, than in interim 2025, at \$*** per short ton equivalent.⁷

⁶ ***.

⁷ ***.

Cost of goods sold and gross profit or loss

Table 6.1 shows that total raw material costs were the largest component of COGS from 2023 to 2025 and the interim periods, ranging from *** percent in 2025 to *** percent in 2023. On both a per-short ton HCl equivalent basis and as a ratio to total net sales, raw material costs decreased from 2023 to 2025 and were higher in interim 2026 than interim 2025.⁸

Dextrose accounted for the majority of total raw material costs, ranging from *** percent in interim 2026 to *** percent in 2024. Additional raw material items included lower cost items than dextrose such as ammonia and fermentation media.^{9 10}

During the process of making lysine, a biomass is produced that is included in the end product (co-product).¹¹ There is a small amount of byproducts of liquid fertilizer or ammonium sulfate sold to the fertilizer market.¹² Over the POI, the byproducts represented around *** percent of sales values.¹³

⁸ ***.

⁹ ***. *** U.S. producer questionnaire responses, section 3.6.

¹⁰ ***. Email from *** June 15, 2026. ***. Email from *** , June 15, 2026. ***. Email from *** , June 15, 2026.

¹¹ Conference transcript, pp. 13, 57, 73 (Benson). ***. *** U.S. producer questionnaire response, section 3.8.

¹² Conference transcript, p. 58 (Choi); pp. 58, 74 (Benson). ***. U.S. producer questionnaire responses, section 3.8.

¹³ Table 6.1.

The second largest component of COGS, other factory costs, ranged from *** to *** percent of total COGS from 2023 to interim 2026. On a per-short ton HCl equivalent basis and as a ratio to total net sales, other factory costs increased from 2023 to 2025 and were higher in interim 2026 than in interim 2025. Per unit other factory costs varied among U.S. producers.¹⁴
15 16

The smallest component of COGS, direct labor, ranged from *** to *** percent of total COGS from 2023 to interim 2026. As a ratio to total net sales, direct labor increased consistently from 2023 to 2025 and was higher in interim 2026 than in interim 2025. On a per-short ton HCl equivalent basis, direct labor costs increased irregularly from 2023 to 2025 but were lower in interim 2026 than in interim 2025.¹⁷

¹⁴ ***.

¹⁵ ***. *** U.S. producer questionnaire response, section 3.10.

¹⁶ ***. Email from ***, June 15, 2026. ***. Email from ***, June 15, 2026. ***. Email from ***, June 18, 2026. ***. Email from ***, June 15 and July 25, 2026.

¹⁷ ***.

Total COGS decreased consistently from 2023 to 2025 but was higher in interim 2026 than in interim 2025.¹⁸ Total unit COGS decreased overall from 2023 to 2025 but was higher in interim 2026 than in interim 2025. As a ratio to net sales, COGS irregularly increased in 2023 to 2025 and was higher in interim 2026 than in interim 2025.

As shown in table 6.1, the industry reported an irregular decline in gross profit from 2023 to 2025. Gross profit was lower in interim 2026 than in interim 2025. As a ratio to net sales, gross profit irregularly decreased from 2023 to 2025 and was lower in interim 2026 than in interim 2025.¹⁹

SG&A expenses and operating income or loss

Table 6.1 shows that U.S. producers' SG&A expenses decreased consistently from 2023 to 2025 and were lower in interim 2026 than in interim 2025. In absolute values, *** SG&A expenses decreased from 2023 to 2025 while *** increased. *** reported lower SG&A expenses in interim 2026 than in interim 2025 while *** were higher. The industry's SG&A expense ratio (SG&A expenses as a ratio to net sales) decreased from 2023 to 2025 and was lower in interim 2026 than in interim 2025.²⁰

¹⁸ ***.

¹⁹ ***.

²⁰ ***. Email from ***, June 15, 2026. ***. Email from ***, June 15, 2026.

Operating income of the industry improved irregularly from 2023 to 2025 but was lower in interim 2026 than in interim 2025. *** operating income decreased consistently from 2023 to 2025, while *** decreased irregularly. *** operating income increased irregularly from 2023 to 2025. In the interim periods, *** operating income was lower in interim 2026 than in interim 2025, while *** was higher. U.S. producers' operating margin (operating income as a ratio to net sales) improved irregularly from 2023 to 2025 but was lower in interim 2026 than in interim 2025.

All other expenses and net income or loss

Classified below the total market operating income level are interest expense, other expense, and other income, which are listed in table 6.1. Interest expenses increased irregularly from 2023 to 2025 and were higher in interim 2026 than in interim 2025. All other expenses decreased irregularly from 2023 to 2025 and were lower in interim 2026 than in interim 2025. All other income increased from 2023 to 2025 and was higher in interim 2026 than in interim 2025.

Net income improved overall from *** in 2023 to *** in 2025 but was lower in interim 2026 (***) than in interim 2025 (\$***).²¹

Capital expenditures and research and development expenses

Table 6.4 presents capital expenditures, by firm, and table 6.6 presents R&D expenses, by firm. Tables 6.5 and 6.7 present the firms' narrative explanations of the nature, focus, and significance of their capital expenditures and R&D expenses, respectively. For capital expenditures, there was an irregular increase from 2023 to 2025, but they were lower in interim 2026 than in interim 2025. For R&D expenses, there was an irregular increase from 2023 to 2025, but they were lower in interim 2026 than in interim 2025.

²¹ A variance analysis is not presented due to ***.

Table 6.4 Lysine: U.S. producers' capital expenditures, by firm and period

Value in 1,000 dollars

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	8,287	18,771	13,451	2,540	1,951

Source: Compiled from data submitted in response to Commission questionnaires.

Table 6.5 Lysine: U.S. producers' narrative descriptions of their capital expenditures, by firm

Firm	Narrative on capital expenditures
ADM	***
Ajinomoto	***
CJ Bio	***
Evonik	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table 6.6 Lysine: U.S. producers' R&D expenses, by firm and period

Value in 1,000 dollars

Firm	2023	2024	2025	Interim 2025	Interim 2026
ADM	***	***	***	***	***
Ajinomoto	***	***	***	***	***
CJ Bio	***	***	***	***	***
Evonik	***	***	***	***	***
All firms	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table 6.7 Lysine: U.S. producers' narrative descriptions of their R&D expenses, by firm

Firm	Narrative on R&D expenses
ADM	***
Ajinomoto	***
CJ Bio	***
Evonik	***

Source: Compiled from data submitted in response to Commission questionnaires.

Assets and return on assets

Table 6.8 presents data on the U.S. producers' total assets while table 6.9 presents their operating ROA.²² Table 6.10 presents U.S. producers' narrative responses explaining their major asset categories and any significant changes in asset levels over time. For assets in the industry, there was a decrease from 2023 to 2025. U.S. producers' average operating ROA improved irregularly from 2023 to 2025.

Table 6.8 Lysine: U.S. producers' assets, by firm and period

Value in 1,000 dollars

Firm	2023	2024	2025
ADM	***	***	***
Ajinomoto	***	***	***
CJ Bio	***	***	***
Evonik	***	***	***
All firms	395,850	385,912	358,884

Source: Compiled from data submitted in response to Commission questionnaires.

Table 6.9 Lysine: U.S. producers' ROA, by firm and period

Ratio in percent

Firm	2023	2024	2025
ADM	***	***	***
Ajinomoto	***	***	***
CJ Bio	***	***	***
Evonik	***	***	***
All firms	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table 6.10 Lysine: U.S. producers' narrative descriptions of their total net assets, by firm

Firm	Narrative on assets
ADM	***
Ajinomoto	***
CJ Bio	***
Evonik	***

Source: Compiled from data submitted in response to Commission questionnaires.

²² The operating ROA is calculated as operating income divided by total assets. With respect to a firm's overall operations, the total asset value reflects an aggregation of a number of assets which are generally not product specific. Thus, high-level allocations are generally required in order to report a total asset value on a product-specific basis.

Capital and investment

The Commission requested U.S. producers of lysine to describe any actual or potential negative effects of imports of lysine from China on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table 6.11 presents the number of firms reporting an impact in each category and table 6.12 provides the U.S. producers' narrative responses.

Table 6.11 Lysine: Count of firms indicating actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2023, by effect

Number of firms reporting

Effect	Category	Count
Cancellation, postponement, or rejection of expansion projects	Investment	1
Denial or rejection of investment proposal	Investment	1
Reduction in the size of capital investments	Investment	3
Return on specific investments negatively impacted	Investment	2
Other investment effects	Investment	1
Any negative effects on investment	Investment	4
Rejection of bank loans	Growth	0
Lowering of credit rating	Growth	0
Problem related to the issue of stocks or bonds	Growth	0
Ability to service debt	Growth	0
Other growth and development effects	Growth	3
Any negative effects on growth and development	Growth	3
Anticipated negative effects of imports	Future	4

Source: Compiled from data submitted in response to Commission questionnaires.

Table 6.12 Lysine: U.S. producers' narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2023, by firm and effect

Item	Firm name and narrative on impact of imports
Cancellation, postponement, or rejection of expansion projects	***
Denial or rejection of investment proposal	***
Reduction in the size of capital investments	***
Reduction in the size of capital investments	***
Reduction in the size of capital investments	***
Return on specific investments negatively impacted	***
Return on specific investments negatively impacted	***
Other negative effects on investments	***
Other effects on growth and development	***
Other effects on growth and development	***
Other effects on growth and development	***
Anticipated effects of imports	***

Table continued.

Table 6.12 (Continued) Lysine: U.S. producers' narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2023, by firm and effect

Item	Firm name and narrative on impact of imports
Anticipated effects of imports	***
Anticipated effects of imports	***

Source: Compiled from data submitted in response to Commission questionnaires.

Part 7: Threat considerations and information on nonsubject countries

Section 771(7)(F)(i) of the Act (19 U.S.C. § 1677(7)(F)(i)) provides that—

In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors¹--

- (I) if a countervailable subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement), and whether imports of the subject merchandise are likely to increase,
- (II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,
- (III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,
- (IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports,
- (V) inventories of the subject merchandise,

¹ Section 771(7)(F)(ii) of the Act (19 U.S.C. § 1677(7)(F)(ii)) provides that “The Commission shall consider {these factors} . . . as a whole in making a determination of whether further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted under this title. The presence or absence of any factor which the Commission is required to consider . . . shall not necessarily give decisive guidance with respect to the determination. Such a determination may not be made on the basis of mere conjecture or supposition.”

- (VI) the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products,
- (VII) in any investigation under this title which involves imports of both a raw agricultural product (within the meaning of paragraph (4)(E)(iv)) and any product processed from such raw agricultural product, the likelihood that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural product or the processed agricultural product (but not both),
- (VIII) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and
- (IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).²

Information on the nature of the subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in Parts 4 and 5; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in Part 6. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

² Section 771(7)(F)(iii) of the Act (19 U.S.C. § 1677(7)(F)(iii)) further provides that, in antidumping investigations, "... the Commission shall consider whether dumping in the markets of foreign countries (as evidenced by dumping findings or antidumping remedies in other WTO member markets against the same class or kind of merchandise manufactured or exported by the same party as under investigation) suggests a threat of material injury to the domestic industry."

The industry in China

The Commission issued foreign producers' or exporters' questionnaires to 95 firms believed to produce and/or export lysine from China.³ Usable responses to the Commission's questionnaire were received from one firm: Qiqihar Longjiang Fufeng Biotechnologies Co. ("Qiqihar").

Table 7.1 presents the number of producers/exporters in China that responded to the Commission's questionnaire, its exports to the United States as a share of U.S. imports from China in 2025, and its estimated share of total production of lysine in China during 2025.⁴

Table 7.1 Lysine: Number of responding producers/exporters, approximate share of production, and exports to the United States as a share of U.S. imports from China, 2025

Number of responding firms	Approximate share of production (percent)	Exports as a share of U.S. imports from subject country (percent)
1	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: "Approximate share of production" reflects the responding firms' estimates of their production as a share of total Chinese production of lysine in 2025. Since not all firms have perfect knowledge of the industry in their home market, different firms might use different denominators in estimating their firm's share of the total requested.

Note: "Exports as a share of U.S. imports" reflects a comparison of export data reported by firms in response to the Commission's foreign producer/exporter questionnaire with official Commerce import statistics using HTS statistical reporting numbers 2922.41.0090, accessed July 9, 2026., Official U.S. import statistics were adjusted to: (1) remove out-of-scope imports under the primary HTS number using proprietary, Census-edited Customs records for firms that certified they do not import Lysine; (2) add in imports of Lysine entered in under other HTS numbers using responses to Commission questionnaires; (3) remove imports of out-of-scope products imported under the primary HTS numbers using responses to Commission questionnaires.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

³ These firms were identified through a review of information submitted in the petition and presented in third-party sources.

⁴ While Hebei Huayang Biological Technology Co., Ltd. provided a response in the preliminary phase investigation, during the final phase investigation, it provided a certified response that it ***. The following firms also provided certified responses to the Commission that they do not produce or export lysine from China: ***.

Table 7.2 presents information on the lysine operations of the responding producer and exporter in China.

Table 7.2 Lysine: Summary data for responding producer in China in 2025

Producer name	Production (short tons HCl equivalent)	Share of reported production (percent)	Exports to the United States (short tons HCl equivalent)	Share of reported exports to the United States (percent)	Total shipments (short tons HCl equivalent)	Share of firm's total shipments exported to the United States (percent)
Longjiang Fufeng	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table 7.3 presents events in the industry in China since January 1, 2023.

Table 7.3 Lysine: Important industry events in China since January 1, 2023

Item	Event
Other	Fufeng Group Ltd.: In 2024, Fufeng Group Ltd. reported that its lysine production reached full production capacity (380,000 tons).
Other	Daesang Corp: On March 8, 2024, Daesang Corp. (South Korea) announced that it was retracting its bid to acquire a controlling stake in Heilongjiang Chengfu Food Group Co. (a Chinese lysine manufacturer).
Production curtailments	Meihua Group: In December 2024, Meihua Group reportedly halted its production of 100,000 tons of 98 percent lysine, switching to other amino acids.
Other	CJ CheilJedang Corp.: On April 30, 2025, CJ CheilJedang Corp. pivoted from selling its global bio business, including Chinese and U.S. lysine production, to expanding it due to rising geopolitical uncertainty.
Plant openings	Meihua Group: In September 2025, Jilin Meihua began producing 80 percent lysine at its newly constructed 600,000-ton/year production line in Baicheng, China.

Source: BBKA Biochemical, "Who We Are," accessed May 8, 2025, <https://en.bbcabiotech.com/who-we-are>; The Korea Economic Daily, "CJ CheilJedang Scraps \$3.5 Bn Green Bio Sale, Shifts Gears to Expansion," April 30, 2025, <https://www.kedglobal.com/mergers-acquisitions/newsView/ked202504300005>; The Korea Economic Daily, "South Korea's Daesang Retracts Bid to Acquire China's Chengfu Food," March 8, 2024, <https://www.kedglobal.com/mergers-acquisitions/newsView/ked202403080016>; CCM Data & Business Intelligence, "Progress on Two Lysine-Related Projects," October 30, 2025, https://www.cnchemicals.com/databases/single-report/progress-on-two-lysine-related-projects_13225_227672?mainProductCategoryCode=A&srsId=AfmBOopCqMZqHS_9RsCTugQ0XLqQdtwINwjADN2foeRaaPjsHC9yEgh_&mode=read; Petition, vol. 1, exh. Gen—11, p. 11; Fufeng Group, "Fufeng Group Limited Annual Report 2024," May 6, 2025, <http://www.fufeng-group.com/uploadfile/2025/0507/20250507084858255.pdf>; Vega Pharma, "Amino Acid Monthly Report of Dec 2024 Vega Group," January 24, 2025, <https://www.vegapharma.com/uploads/20250124/Amino%20Acid%20monthly%20report%20of%20Dec%202024%20Vega%20group.pdf>.

Changes in operations

Producers in China were asked to report any change in the character of their operations or organization relating to the production of lysine since January 1, 2023. Longjiang Fufeng reported an expansion in its lysine production technologies in 2024.⁵

Table 7.4 Lysine: Reported changes in operations in industry in China since January 1, 2023, by reported change category and firm

Item	Firm name, and accompanying narrative response regarding changes in operations
Expansions	***

Source: Compiled from data submitted in response to Commission questionnaires.

Installed and practical overall capacity

Table 7.5 presents data on Longjiang Fufeng's installed capacity, practical overall capacity, and practical lysine capacity and production on the same equipment in China. Longjiang Fufeng *** report producing any other products on the same machinery. Its installed and practical overall capacity remained *** from 2023 to 2024 and as Longjiang Fufeng expanded its ***, its capacity increased from 2024 to 2025 and then remained constant between interim 2026 and interim 2025.⁶ As production steadily increased, Longjiang Fufeng's installed and practical overall capacity utilization increased annually from 2023 to 2025 and were higher in interim 2026 compared to interim 2025.

⁵ NM Market Research, "Corn Deep-processing China News October 2024," accessed June 21, 2026, <http://nkmarketresearch.com/corn-deep-processing-china-news-october-2024/>.

⁶ Longjiang Fufeng's foreign producer questionnaire, II-2a.

Table 7.5 Lysine: Producer's installed and practical capacity and production on the same equipment as in-scope production in China, by period

Capacity and production in short tons HCl equivalent; utilization in percent; Interim period is January through March

Item	Measure	2023	2024	2025	Interim 2025	Interim 2026
Installed overall	Capacity	***	***	***	***	***
Installed overall	Production	***	***	***	***	***
Installed overall	Utilization	***	***	***	***	***
Practical overall	Capacity	***	***	***	***	***
Practical overall	Production	***	***	***	***	***
Practical overall	Utilization	***	***	***	***	***
Practical L-lysine	Capacity	***	***	***	***	***
Practical L-lysine	Production	***	***	***	***	***
Practical L-lysine	Utilization	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Constraints on capacity

Longjiang Fufeng *** report any capacity constraints since January 1, 2023.

Operations on lysine

Table 7.6 presents information on the lysine operations of the responding producer and exporter in China. Longjiang Fufeng's practical capacity remained constant from 2023 to 2024, and increased from 2024 to 2025, overall ending 2025 higher than in 2023. Practical capacity remained constant between interim 2025 and interim 2026 and is projected to remain steady through 2026 and 2027. Production increased annually from 2023 to 2025 and was higher in interim 2026 than in interim 2025 and is projected to remain constant in 2026 and 2027. Longjiang Fufeng's capacity utilization similarly increased annually from 2023 to 2025 and was higher in interim 2026 compared to interim 2025. It is projected to remain constant at *** percent in 2026 and 2027.

From 2023 to 2025, Longjiang Fufeng's export shipments ranged between *** percent of total shipments. Export shipments accounted for an increasingly larger share of total shipments in each year and interim period, with the exception of 2023, when the share of commercial home market shipments slightly exceeded that of export shipments. Throughout the period examined, commercial home market shipments comprised the vast majority of home market shipments, and the vast majority of export shipments were destined for markets outside the United States.

The quantity of total export shipments increased annually from 2023 to 2025 and was higher in interim 2026 compared to interim 2025 but is projected to decrease from 2025 to 2026 and remain constant from 2026 to 2027. Export shipments to the United States, by

quantity, decreased from 2023 to 2024, increased from 2024 to 2025, increasing overall from 2023 to 2025. Longjiang Fufeng reported *** export shipments to the United States in interim 2026 and projects it *** to the United States in 2026 and 2027.

The quantity of commercial home market shipments decreased from 2023 to 2024 and increased from 2024 to 2025, ending 2025 lower than in 2023. It was lower in interim 2026 compared to interim 2025 and is projected to remain constant from 2025 through 2027.

Ending inventories fluctuated, increasing from 2023 to 2024, and decreasing from 2024 to 2025, decreasing overall from 2023 to 2025 and was lower in interim 2026 compared to interim 2025. Ending inventories are projected to increase sharply from 2025 to 2026 and continue to increase from 2026 to 2027.

Table 7.6 Lysine: Data on industry in China, by period

Quantity in short tons HCl equivalent; interim period is January through March

Item	2023	2024	2025	Interim 2025	Interim 2026	Projection 2026	Projection 2027
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Internal consumption	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Home market shipments	***	***	***	***	***	***	***
Exports to the United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Export shipments	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Table continued.

Table 7.6 (Continued) Lysine: Data on industry in China, by period

Ratio and share in percent; interim period is January through March

Item	2023	2024	2025	Interim 2025	Interim 2026	Projection 2026	Projection 2027
Capacity utilization ratio	***	***	***	***	***	***	***
Inventory ratio to production	***	***	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***	***	***
Internal consumption share	***	***	***	***	***	***	***
Commercial home market shipments share	***	***	***	***	***	***	***
Home market shipments share	***	***	***	***	***	***	***
Exports to the United States share	***	***	***	***	***	***	***
Exports to all other markets share	***	***	***	***	***	***	***
Export shipments share	***	***	***	***	***	***	***
Total shipments share	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "—".

Alternative products

The responding producer in China *** report any production of alternative products using the same equipment and/or labor as those used to produce lysine during the period of investigation.

Exports

According to GTA, the leading export markets for lysine and its esters (salts thereof) from China by quantity and value are India, Thailand, and the United States (table 7.7). During 2025, the United States was the third largest export market for lysine and its esters (salts thereof) from China, by quantity, accounting for 6.6 percent of total exports, while the top export market accounted for 7.3 percent.

Table 7.7 Lysine and its esters; salts thereof: Exports from China, by destination market and by period

Quantity in short tons; value in 1,000 dollars

Destination market	Measure	2023	2024	2025
United States	Quantity	71,015	79,219	75,088
India	Quantity	70,733	64,857	83,729
Thailand	Quantity	63,065	79,683	75,287
Vietnam	Quantity	46,721	54,512	63,938
Netherlands	Quantity	110,137	156,611	58,490
Russia	Quantity	28,688	19,162	45,756
Canada	Quantity	44,998	54,459	45,720
Brazil	Quantity	53,105	38,860	37,754
All other destination markets	Quantity	571,098	686,389	658,634
Non-U.S. destination markets	Quantity	988,545	1,154,533	1,069,308
All destination markets	Quantity	1,059,560	1,233,752	1,144,396
United States	Value	78,093	91,159	79,172
India	Value	74,235	74,783	78,999
Thailand	Value	66,922	91,852	69,826
Vietnam	Value	48,070	62,311	58,422
Netherlands	Value	114,994	179,418	56,969
Russia	Value	29,822	21,995	48,262
Canada	Value	48,283	62,538	43,826
Brazil	Value	55,733	43,966	34,084
All other destination markets	Value	613,612	794,582	625,391
Non-U.S. destination markets	Value	1,051,672	1,331,445	1,015,779
All destination markets	Value	1,129,765	1,422,604	1,094,950

Table continued.

Table 7.7 (Continued) Lysine and its esters; salts thereof: Exports from China, by destination market and by period

Unit values in dollars per short ton; Shares in percent

Destination market	Measure	2023	2024	2025
United States	Unit value	1,100	1,151	1,054
India	Unit value	1,050	1,153	944
Thailand	Unit value	1,061	1,153	927
Vietnam	Unit value	1,029	1,143	914
Netherlands	Unit value	1,044	1,146	974
Russia	Unit value	1,040	1,148	1,055
Canada	Unit value	1,073	1,148	959
Brazil	Unit value	1,049	1,131	903
All other destination markets	Unit value	1,074	1,158	950
Non-U.S. destination markets	Unit value	1,064	1,153	950
All destination markets	Unit value	1,066	1,153	957
United States	Share of quantity	6.7	6.4	6.6
India	Share of quantity	6.7	5.3	7.3
Thailand	Share of quantity	6.0	6.5	6.6
Vietnam	Share of quantity	4.4	4.4	5.6
Netherlands	Share of quantity	10.4	12.7	5.1
Russia	Share of quantity	2.7	1.6	4.0
Canada	Share of quantity	4.2	4.4	4.0
Brazil	Share of quantity	5.0	3.1	3.3
All other destination markets	Share of quantity	53.9	55.6	57.6
Non-U.S. destination markets	Share of quantity	93.3	93.6	93.4
All destination markets	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 2922.41 as reported by China Customs in the Global Trade Atlas Suite database, accessed April 28, 2026.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---". The United States is shown at the top followed by the top destination markets in descending order of 2025 data.

U.S. inventories of imported merchandise

Table 7.8 presents data on U.S. importers' reported inventories of lysine. U.S. importers' end-of-period inventories of imports from China fluctuated, decreasing from 2023 to 2024 and increasing from 2024 to 2025, ending 2025 lower than in 2023.⁷ End-of-period inventories of imports from China were lower in interim 2026 than in interim 2025. There were no inventories from nonsubject sources reported during 2023 to 2025 until a sharp increase in interim 2026.⁸ The ratios of end-of-period inventories, U.S. shipments and total shipments, to imports from China all decreased from 2023 to 2025 but were higher in interim 2026 than in interim 2025. The ratio of end-of-period inventories to imports from nonsubject sources was higher in interim 2026 than in interim 2025, as there were no shipments of imports from nonsubject sources in interim 2025.

⁷ The largest importer in 2025, ***. Email from ***, May 19, 2026. The increase from 2024 to 2025 and in the interim periods was driven largely by ***.

⁸ The increase in end of period inventories from nonsubject sources in interim 2026 was entirely accounted for by ***.

Table 7.8 Lysine: U.S. importers' inventories and their ratio to select items, by source and period

Quantity in short tons HCl equivalent; ratio in percent; interim period is January through March

Measure	Source	2023	2024	2025	Interim 2025	Interim 2026
Inventories quantity	China	***	***	***	***	***
Ratio to imports	China	***	***	***	***	***
Ratio to U.S. shipments of imports	China	***	***	***	***	***
Ratio to total shipments of imports	China	***	***	***	***	***
Inventories quantity	Nonsubject sources	***	***	***	***	***
Ratio to imports	Nonsubject sources	***	***	***	***	***
Ratio to U.S. shipments of imports	Nonsubject sources	***	***	***	***	***
Ratio to total shipments of imports	Nonsubject sources	***	***	***	***	***
Inventories quantity	All import sources	***	***	***	***	***
Ratio to imports	All import sources	***	***	***	***	***
Ratio to U.S. shipments of imports	All import sources	***	***	***	***	***
Ratio to total shipments of imports	All import sources	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of lysine from China after March 31, 2026. Their reported data are presented in table 7.9. Five of the 25 importers responding to the Commission's questionnaire reported that they had imported or arranged such imports, of which two reported arranging imports from China. The vast majority of arranged imports are for the second and third quarters of 2026.

Table 7.9 Lysine: U.S. importers' arranged imports, by source and period

Quantity in short tons HCl equivalent

Source	Q2 2026	Q3 2026	Q4 2026	Q1 2027	Total
China	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Third-country trade actions

Lysine exported from China is the subject of trade actions in three third-country markets: Brazil, the EU, and Indonesia.

On June 25, 2026, Brazil instituted definitive antidumping duties on imports of lysine for animal feed from China. The duty rates applied are listed in table 7.10.⁹

Table 7.10 Lysine: Definitive antidumping duties instituted in Brazil

Company	Definitive antidumping duty (percent ad valorem)
Jilin Meihua Amino Acid Co., Ltd.	78.0
Ningxia Eppen Biotech Co., Ltd.	26.0
Qiqihar Longjiang Fufeng Biotechnologies Co., Ltd.	41.3
Shouguang Golden Corn Biotechnological Co., Ltd.	54.5
Anhui BBKA Biochemical Co., Ltd.	110.0
Changchun Dahe Bio Technology Development Co., Ltd.;	110.0
Dongxiao Biotechnology Co., Ltd.	110.0
Hebei Changhao Biotechnology Co., Ltd.	110.0
Hebei Huaheng Biological Technology Co., Ltd.	110.0
Heilongjiang Wanlirunda Biotechnology Co., Ltd.	110.0
Ningdu Huike Technology Co., Ltd.	110.0
Shandong Shouguang Juneng Golden Corn Co., Ltd.	110.0
Shanghai Ajinomoto Amino Acid Co., Ltd.	110.0
Wuxi Jinghai Amino Acid Co., Ltd.	110.0
Xinjiang Meihua Amino Acid Co., Ltd.	110.0
Zhangjiagang Specom Biochemical Co., Ltd.	110.0
Zhucheng Dongxiao Biotechnology Co., Ltd.	110.0
Other Chinese companies	132.6

Source: Government of Brazil, Official Gazette of the Union, "GECEX Resolution No. 923, of June 24, 2026," <https://www.in.gov.br/en/web/dou/-/resolucao-gecex-n-923-de-24-de-junho-de-2026-714462994>.

⁹ Government of Brazil, Official Gazette of the Union, "GECEX Resolution No. 923, of June 24, 2026," <https://www.in.gov.br/en/web/dou/-/resolucao-gecex-n-923-de-24-de-junho-de-2026-714462994>. eFeedLink, "Brazil imposes five-year anti-dumping duties of up to 132.6% on Chinese feed-grade lysine," July 9, 2026, <https://www.efeedlink.com/contents/07-09-2026/0aa79297-d0d1-4bd1-942c-079782e45ce2-0001.html>.

On July 10, 2025, the EU instituted the definitive antidumping duties on lysine from China listed in table 7.11.¹⁰

Table 7.11 Lysine: Definitive antidumping duties instituted in the European Union

Company	Definitive antidumping duty (percent ad valorem)
Meihua Group: —Jilin Meihua Amino Acid Co., Ltd. —Xinjiang Meihua Amino Acid Co., Ltd.	47.7
Heilongjiang Eppen Biotech Co., Ltd.	58.2
Other cooperating companies listed in the Annex	53.1
All other imports originating in the People's Republic of China	58.2

Source: European Union, "Commission Implementing Regulation (EU) 2025/1330 of 10 July 2025 imposing a definitive anti-dumping duty and definitively collecting the provisional duty imposed on imports of lysine originating in the People's Republic of China," July 11, 2025, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32025R1330&qid=1781032019784>.

On March 30, 2022, Indonesia imposed the definitive antidumping duty rates listed in table 7.12.¹¹

Table 7.12 Lysine: Definitive antidumping duties instituted in Indonesia

Company	Definitive antidumping duty (percent ad valorem)
Changchun Dahe Bio Technology Development Co., Ltd. Changchun Dacheng Industrial Group Huicheng International Co., Ltd.	24.61
Inner Mongolia Eppen Biotech Co., Ltd.	14.65
Meihua Group: —Meihua Group International Trading (Hong Kong) Ltd. —Xinjiang Meihua Amino Acid Co., Ltd. —Jilin Meihua Amino Acid Co., Ltd.	6.02
All other companies	33.20

Source: Komite Anti Dumping Indonesia, "Lysine, Esters and Salts for Animal Feed (Feed Grade)," March 30, 2022, <https://kadi.kemendag.go.id/pengenaan-bmad/lisin>; WTO Trade Remedies Portal, <https://trade-remedies.wto.org/en/antidumping/investigations/measures/idn-ad-02-2020chn-2>, accessed June 15, 2026.

¹⁰ European Union, "Commission Implementing Regulation (EU) 2025/1330 of 10 July 2025 imposing a definitive anti-dumping duty and definitively collecting the provisional duty imposed on imports of lysine originating in the People's Republic of China," July 11, 2025, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32025R1330&qid=1781032019784>; Conference transcript, p. 32 (Rosenthal).

¹¹ Komite Anti Dumping Indonesia, "Lysine, Esters and Salts for Animal Feed (Feed Grade)," April 20, 2022, <https://kadi.kemendag.go.id/pengenaan-bmad/lisin>; WTO Trade Remedies Portal, <https://trade-remedies.wto.org/en/antidumping/investigations/measures/idn-ad-02-2020chn-2>, accessed June 15, 2026. Conference transcript, p. 32 (Rosenthal).

Information on nonsubject countries

Global export data for lysine and its esters, salts thereof (HS 2922.41) are presented in table 7.13. These data are likely to contain nonsubject products as well. China accounted for 66.4 to 72.9 percent of global exports in each year. The three largest nonsubject countries in 2025 (Indonesia, South Korea, and the Netherlands) accounted for 5.5 to 6.6 percent of global exports.

Table 7.13 Lysine and its esters, salts thereof: Global exports by exporter and period

Quantity in short tons; Value in 1,000 dollars

Exporting country	Measure	2023	2024	2025
United States	Quantity	96,965	70,331	116,250
China	Quantity	1,059,560	1,233,752	1,144,396
Indonesia	Quantity	67,499	24,050	113,880
South Korea	Quantity	55,672	83,639	97,427
Netherlands	Quantity	116,450	126,951	94,070
France	Quantity	9,053	18,790	55,595
Brazil	Quantity	31,212	31,789	24,996
Canada	Quantity	2,947	7,669	11,243
Poland	Quantity	10,234	9,353	11,197
Germany	Quantity	16,090	18,274	10,584
Lithuania	Quantity	25,604	24,116	7,761
Belgium	Quantity	13,410	9,708	6,112
All other exporters	Quantity	23,490	33,790	29,135
All reporting exporters	Quantity	1,528,186	1,692,212	1,722,646
United States	Value	97,033	87,183	119,692
China	Value	1,129,765	1,422,604	1,094,950
Indonesia	Value	61,174	24,910	106,584
South Korea	Value	57,614	86,088	120,414
Netherlands	Value	153,565	170,868	163,470
France	Value	29,704	40,966	90,247
Brazil	Value	30,554	32,641	29,083
Canada	Value	4,380	9,872	11,974
Poland	Value	14,502	14,691	20,880
Germany	Value	32,794	35,854	28,974
Lithuania	Value	34,337	35,756	14,432
Belgium	Value	20,218	15,013	12,010
All other exporters	Value	42,539	61,874	58,334
All reporting exporters	Value	1,708,180	2,038,319	1,871,045

Table continued.

Table 7.13 Lysine and its esters, salts thereof (continued): Global exports by exporter and period

Unit values in dollars per short ton; Shares in percent

Exporting country	Measure	2023	2024	2025
United States	Unit value	1,001	1,240	1,030
China	Unit value	1,066	1,153	957
Indonesia	Unit value	906	1,036	936
South Korea	Unit value	1,035	1,029	1,236
Netherlands	Unit value	1,319	1,346	1,738
France	Unit value	3,281	2,180	1,623
Brazil	Unit value	979	1,027	1,164
Canada	Unit value	1,486	1,287	1,065
Poland	Unit value	1,417	1,571	1,865
Germany	Unit value	2,038	1,962	2,738
Lithuania	Unit value	1,341	1,483	1,860
Belgium	Unit value	1,508	1,546	1,965
All other exporters	Unit value	1,811	1,831	2,002
All reporting exporters	Unit value	1,118	1,205	1,086
United States	Share of quantity	6.3	4.2	6.7
China	Share of quantity	69.3	72.9	66.4
Indonesia	Share of quantity	4.4	1.4	6.6
South Korea	Share of quantity	3.6	4.9	5.7
Netherlands	Share of quantity	7.6	7.5	5.5
France	Share of quantity	0.6	1.1	3.2
Brazil	Share of quantity	2.0	1.9	1.5
Canada	Share of quantity	0.2	0.5	0.7
Poland	Share of quantity	0.7	0.6	0.6
Germany	Share of quantity	1.1	1.1	0.6
Lithuania	Share of quantity	1.7	1.4	0.5
Belgium	Share of quantity	0.9	0.6	0.4
All other exporters	Share of quantity	1.5	2.0	1.7
All reporting exporters	Share of quantity	100.0	100.0	100.0

Source: Official export statistics under HS subheading 2922.41 as reported by various national statistical authorities in the Global Trade Atlas Suite database, accessed April 28, 2026.

Note: United States is shown at the top followed by the top destination markets in descending order of 2025 data.

APPENDIX A

FEDERAL REGISTER NOTICES

The Commission makes available notices relevant to its investigations and reviews on its website, www.usitc.gov. In addition, the following tabulation presents, in chronological order, Federal Register notices issued by the Commission and Commerce during the current proceeding.

Citation	Title	Link
90 FR 23565, June 3, 2025	L-lysine from China; Institution of Antidumping and Countervailing Duty Investigations; Scheduling of Preliminary Phase Investigations	https://www.govinfo.gov/content/pkg/FR-2025-06-03/pdf/2025-10047.pdf
90 FR 26782, June 24, 2025	L-Lysine from the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation	https://www.govinfo.gov/content/pkg/FR-2025-06-24/pdf/2025-11536.pdf
90 FR 26799, June 24, 2025	L-Lysine from the People's Republic of China: Initiation of Countervailing Duty Investigation	https://www.govinfo.gov/content/pkg/FR-2025-06-24/pdf/2025-11537.pdf
90 FR 33394, July 17, 2025	L-lysine From China	https://www.govinfo.gov/content/pkg/FR-2025-07-17/pdf/2025-13359.pdf
90 FR 36136, August 1, 2025	L-Lysine From the People's Republic of China: Postponement of Preliminary Determination in the Countervailing Duty Investigation	https://www.govinfo.gov/content/pkg/FR-2025-08-01/pdf/2025-14632.pdf
90 FR 61368, December 31, 2025	L-Lysine From the People's Republic of China: Postponement of Preliminary Determination in the Less-Than-Fair Value Investigation	https://www.govinfo.gov/content/pkg/FR-2025-12-31/pdf/2025-24036.pdf
91 FR 2745, January 22, 2026	L-Lysine From the People's Republic of China: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination	https://www.govinfo.gov/content/pkg/FR-2026-01-22/pdf/2026-01193.pdf
91 FR 11030, March 6, 2026	L-Lysine From the People's Republic of China: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures	https://www.govinfo.gov/content/pkg/FR-2026-03-06/pdf/2026-04412.pdf
91 FR 16967, April 3, 2026	L-Lysine From China; Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations	https://www.govinfo.gov/content/pkg/FR-2026-04-03/pdf/2026-06529.pdf
91 FR 43667, July 16, 2026	L-Lysine from China; Cancellation of Hearing for Antidumping and Countervailing Duty Investigations	https://www.govinfo.gov/content/pkg/FR-2026-07-16/pdf/2026-14277.pdf

Citation	Title	Link
91 FR 46399, July 23, 2026	L-Lysine From the People's Republic of China: Final Affirmative Countervailing Duty Determination	https://www.govinfo.gov/content/pkg/FR-2026-07-23/pdf/2026-14952.pdf
91 FR 46406, July 23, 2026	L-Lysine From the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value	https://www.govinfo.gov/content/pkg/FR-2026-07-23/pdf/2026-14951.pdf

APPENDIX B

HEARING CANCELLATION

INTERNATIONAL TRADE COMMISSION

[Investigation Nos. 701–TA–767 and 731–TA–1750 (Final)]

L-Lysine from China; Cancellation of Hearing for Antidumping and Countervailing Duty Investigations

AGENCY: United States International Trade Commission.

ACTION: Notice.

DATES: July 10, 2026.

FOR FURTHER INFORMATION CONTACT: Caitlyn Costello (202–205–2058), Office of Investigations, U.S. International Trade Commission, 500 E Street SW, Washington, DC 20436. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202–205–1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202–205–2000. General information concerning the Commission may also be obtained by accessing its internet server (<https://www.usitc.gov>). The public record for these investigations may be viewed on the Commission's electronic docket (EDIS) at <https://edis.usitc.gov>.

SUPPLEMENTARY INFORMATION: On March 6, 2026, the Commission established a schedule for the final phase of the subject antidumping and countervailing duty investigations (91 FR 16967, April 3, 2026). On May 29, 2025, counsel for Lysine Fair Trade Coalition and its individual members (collectively, "Petitioners") filed a request to appear at the hearing. No other parties submitted a request to appear at the hearing. On July 9, 2026, counsel for the Petitioners withdrew their request to appear at the hearing, filed a request that the Commission cancel the scheduled hearing for this proceeding and indicated a willingness to respond to any Commission questions in lieu of

an actual hearing. The Commission considers Petitioners' letter to be a request under 19 CFR 201.12 to take action with respect to these investigations, and that cancellation is appropriate because a public hearing is not necessary to address the legal and factual issues these investigations present. Consequently, the Commission has cancelled the public hearing in connection with this proceeding, scheduled to begin at 9:30 a.m. on July 14, 2026. Parties to this proceeding should respond to any written questions posed by the Commission in their posthearing briefs, which are due to be filed on July 22, 2026.

For further information concerning this proceeding, see the Commission's notice cited above and the Commission's Rules of Practice and Procedure, part 201, subparts A and B (19 CFR part 201), and part 207, subparts A and C (19 CFR part 207).

Authority: This proceeding is being conducted under authority of title VII of the Tariff Act of 1930; this notice is published pursuant to § 207.21 of the Commission's rules.

By order of the Commission.

Issued: July 13, 2026.

Lisa Barton,

Secretary to the Commission.

[FR Doc. 2026–14277 Filed 7–15–26; 8:45 am]

BILLING CODE 7020–02–P

DEPARTMENT OF JUSTICE**Drug Enforcement Administration**

[Docket No. DEA–1741]

Importer of Controlled Substances Application: Catalent Greenville, Inc.

AGENCY: Drug Enforcement Administration, Justice.

ACTION: Notice of application.

SUMMARY: Catalent Greenville, Inc. has applied to be registered as an importer of basic class(es) of controlled substance(s). Refer to **SUPPLEMENTARY**

INFORMATION listed below for further drug information.

DATES: Registered bulk manufacturers of the affected basic class(es), and applicants, therefore, may submit electronic comments on or objections to the issuance of the proposed registration on or before August 17, 2026. Such persons may also file a written request for a hearing on the application on or before August 17, 2026.

ADDRESSES: The Drug Enforcement Administration requires that all comments be submitted electronically through the Federal eRulemaking Portal, which provides the ability to type short comments directly into the comment field on the web page or attach a file for lengthier comments. Please go to <https://www.regulations.gov> and follow the online instructions at that site for submitting comments. Upon submission of your comment, you will receive a Comment Tracking Number. Please be aware that submitted comments are not instantaneously available for public view on <https://www.regulations.gov>. If you have received a Comment Tracking Number, your comment has been successfully submitted and there is no need to resubmit the same comment. All requests for a hearing must be sent to: (1) Drug Enforcement Administration, Attn: Hearing Clerk/OALJ, 8701 Morrisette Drive, Springfield, Virginia 22152; and (2) Drug Enforcement Administration, Attn: DEA Federal Register Representative/DPW, 8701 Morrisette Drive, Springfield, Virginia 22152. All requests for a hearing should also be sent to: Drug Enforcement Administration, Attn: Administrator, 8701 Morrisette Drive, Springfield, Virginia 22152.

SUPPLEMENTARY INFORMATION: In accordance with 21 CFR 1301.34(a), this is notice that on June 4, 2026, Catalent Greenville, Inc., 1240 Sugg Parkway, Greenville, North Carolina 27834–9006, applied to be registered as an importer of the following basic class(es) of controlled substance(s):

Controlled substance	Drug code	Schedule
Lysergic acid diethylamide	7315	I
3,4-Methylenedioxymethamphetamine	7405	I
Psilocybin	7437	I

The company plans to import the listed controlled substances for dosage formulations development for research, clinical trial studies and analytical purposes. No other activities for these drug codes are authorized for this registration.

Approval of permit applications will occur only when the registrant's business activity is consistent with what is authorized under 21 U.S.C. 952(a)(2). Authorization will not extend to the import of Food and Drug Administration-approved or non-

approved finished dosage forms for commercial sale.

Thomas Prevoznik,

Deputy Assistant Administrator.

[FR Doc. 2026–14286 Filed 7–15–26; 8:45 am]

BILLING CODE 4410–09–P

APPENDIX C

SUMMARY DATA

Table C.1

Lysine: Summary data concerning the U.S. market, by item and period

Quantity=short tons HCl equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton HCl equivalent; Period changes=percent--exceptions noted; Interim period is January through March

Item	Reported data					Period change comparisons			
	2023	Calendar year 2024	2025	Interim 2025	2026	2023-25	Calendar year 2023-24	2024-25	Interim 2025-26
U.S. consumption quantity:									
Amount.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers' share (fn1).....	***	***	***	***	***	▼***	▼***	▼***	▲***
Importers' share (fn1):									
China.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources.....	***	***	***	***	***	▲***	▲***	▼***	▲***
All import sources.....	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. consumption value:									
Amount.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Producers' share (fn1).....	***	***	***	***	***	▼***	▼***	▼***	▲***
Importers' share (fn1):									
China.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources.....	***	***	***	***	***	▲***	▲***	▲***	▲***
All import sources.....	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. imports from:									
China:									
Quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Value.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value.....	***	***	***	***	***	▲***	▼***	▲***	▼***
Ending inventory quantity.....	***	***	***	***	***	▼***	▼***	▲***	▼***
Nonsubject sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▲***
Value.....	***	***	***	***	***	▲***	▲***	▲***	▲***
Unit value.....	***	***	***	***	***	▼***	▼***	▲***	▼***
Ending inventory quantity.....	***	***	***	***	***	***	***	***	▲***
All import sources:									
Quantity.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Value.....	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit value.....	***	***	***	***	***	▲***	▼***	▲***	▼***
Ending inventory quantity.....	***	***	***	***	***	▼***	▼***	▲***	▼***
U.S. producers':									
Practical capacity quantity.....	485,620	488,928	480,928	123,032	121,756	▼(1.0)	▲0.7	▼(1.6)	▼(1.0)
Production quantity.....	390,855	399,256	375,673	94,259	93,089	▼(3.9)	▲2.1	▼(5.9)	▼(1.2)
Capacity utilization (fn1).....	80.5	81.7	78.1	76.6	76.5	▼(2.4)	▲1.2	▼(3.5)	▼(0.2)
U.S. shipments:									
Quantity.....	306,011	299,694	276,441	69,194	75,041	▼(9.7)	▼(2.1)	▼(7.8)	▲8.5
Value.....	533,306	481,122	447,611	111,653	115,977	▼(16.1)	▼(9.8)	▼(7.0)	▲3.9
Unit value.....	\$1,743	\$1,605	\$1,619	\$1,614	\$1,546	▼(7.1)	▼(7.9)	▲0.9	▼(4.2)

Table continued.

Table C.1 Continued

Lysine: Summary data concerning the U.S. market, by item and period

Quantity=short tons HCl equivalent; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short ton HCl equivalent; Period changes=percent—exceptions noted; Interim period is January through March

Item	Reported data					Period change comparisons			
	Calendar year		2025	Interim		Calendar year		Interim	
	2023	2024		2025	2026	2023–25	2023–24		2024–25
U.S. producers' continued:									
Export shipments:									
Quantity.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value.....	***	***	***	***	***	▲***	▲***	▼***	▼***
Ending inventory quantity.....	27,784	28,559	33,509	24,193	32,913	▲20.6	▲2.8	▲17.3	▲36.0
Inventories/total shipments (fn1).....	***	***	***	***	***	▲***	▲***	▲***	▲***
Production workers.....	665	575	537	531	513	▼(19.2)	▼(13.5)	▼(6.6)	▼(3.4)
Hours worked (1,000s).....	1,101	960	1,014	256	240	▼(7.9)	▼(12.8)	▲5.6	▼(6.3)
Wages paid (\$1,000).....	43,182	40,597	41,326	10,637	10,702	▼(4.3)	▼(6.0)	▲1.8	▲0.6
Hourly wages (dollars per hour).....	\$39.22	\$42.29	\$40.76	\$41.55	\$44.59	▲3.9	▲7.8	▼(3.6)	▲7.3
Productivity (short tons per 1,000 hours).....	355.0	415.9	370.5	368.2	387.9	▲4.4	▲17.2	▼(10.9)	▲5.3
Unit labor costs.....	\$110	\$102	\$110	\$113	\$115	▼(0.4)	▼(8.0)	▲8.2	▲1.9
Net sales:									
Quantity.....	***	***	***	***	***	▼***	▲***	▼***	▼***
Value.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Unit value.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Cost of goods sold (COGS).....	***	***	***	***	***	▼***	▼***	▼***	▲***
Gross profit or (loss) (fn2).....	***	***	***	***	***	▼***	▲***	▼***	▼***
SG&A expenses.....	***	***	***	***	***	▼***	▼***	▼***	▼***
Operating income or (loss) (fn2).....	***	***	***	***	***	▲***	▲***	▼***	▼***
Net income or (loss) (fn2).....	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit COGS.....	\$1,540	\$1,435	\$1,444	\$1,319	\$1,405	▼(6.2)	▼(6.8)	▲0.6	▲6.5
Unit SG&A expenses.....	\$94	\$89	\$72	\$78	\$68	▼(23.5)	▼(6.0)	▼(18.6)	▼(13.4)
Unit operating income or (loss) (fn2).....	\$(42)	\$2	\$(24)	\$132	\$(38)	▲—	▲—	▲—	▲—
Unit net income or (loss) (fn2).....	***	***	***	***	***	▲***	▲***	▼***	▼***
COGS/sales (fn1).....	96.7	94.1	96.8	86.2	97.9	▲0.1	▼(2.7)	▲2.7	▲11.7
Operating income or (loss)/sales (fn1).....	(2.7)	0.1	(1.6)	8.6	(2.6)	▲1.0	▲2.8	▼(1.8)	▼(11.3)
Net income or (loss)/sales (fn1).....	***	***	***	***	***	▲***	▲***	▼***	▼***
Capital expenditures.....	8,287	18,771	13,451	2,540	1,951	▲62.3	▲126.5	▼(28.3)	▼(23.2)
Research and development expenses.....	***	***	***	***	***	▲***	▼***	▲***	▼***
Total assets.....	395,850	385,912	358,884	NA	NA	▼(9.3)	▼(2.5)	▼(7.0)	NA

Source: Compiled from data submitted in response to Commission questionnaires and from adjusted official U.S. imports statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 2922.41.0090, accessed July 9, 2026. Official U.S. import statistics were adjusted to: (1) remove out-of-scope imports under the primary HTS number using proprietary, Census-edited Customs records for firms that certified they do not import Lysine; (2) add in imports of Lysine entered in under other HTS numbers using responses to Commission questionnaires; (3) remove imports of out-of-scope products imported under the primary HTS numbers using responses to Commission questionnaires; (4) remove certain imports under the primary HTS number whose average unit value were anomalously high (>7,250 dollars per short ton), many of those entries were reported by importers whose firm names indicated that the merchandise was likely related to pharmaceutical or nutraceutical grade lysine. Imports are based on the imports for consumption data series. Import value data reflect landed duty-paid values. 508-compliant tables for these data are contained in parts 3, 4, 6, and 7 of this report.

fn1.--Reported data are in percent and period changes are in percentage points.

fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "—". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

