



EUROPEAN COMMISSION
DG Competition

***Case M.10841 - FIRMENICH INTERNATIONAL /
KONINKLIJKE DSM***

Only the English text is available and authentic.

**REGULATION (EC) No 139/2004
MERGER PROCEDURE**

Article 6(1)(b) NON-OPPOSITION
Date: 22/02/2023

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EUROPEAN COMMISSION

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PUBLIC VERSION

In the published version of this decision, some information has been omitted pursuant to Article 17(2) of Council Regulation (EC) No 139/2004 concerning non-disclosure of business secrets and other confidential information. The omissions are shown thus [...]. Where possible the information omitted has been replaced by ranges of figures or a general description.

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**Subject: Case M.10841 - FIRMENICH INTERNATIONAL / KONINKLIJKE DSM
Commission decision pursuant to Article 6(1)(b) of Council Regulation
No 139/2004¹ and Article 57 of the Agreement on the European Economic
Area²**

Dear Sir or Madam,

- (1) On 18 January 2023, the European Commission received a notification of a proposed concentration pursuant to Article 4 of Council Regulation (EC) 139/2004 ('Merger Regulation') by which Firmenich International SA ('Firmenich', Switzerland) will enter into a full merger within the meaning of Article 3(1)(a) of the Merger Regulation with Koninklijke DSM N.V. ('DSM', the Netherlands) by way of purchase of shares ('the Transaction').³ DSM and Firmenich are designated hereinafter as the 'Notifying Parties'.

¹ OJ L 24, 29.1.2004, p. 1 (the 'Merger Regulation'). With effect from 1 December 2009, the Treaty on the Functioning of the European Union ('TFEU') has introduced certain changes, such as the replacement of 'Community' by 'Union' and 'common market' by 'internal market'. The terminology of the TFEU will be used throughout this decision.

² OJ L 1, 3.1.1994, p. 3 (the 'EEA Agreement').

³ Publication in the Official Journal of the European Union No C 30, 27.1.2023, p. 23.

1. THE PARTIES

- (2) DSM is a public limited liability company, headquartered in Heerlen, the Netherlands. DSM is listed on the Euronext Amsterdam Stock Exchange. It is active mainly in the production of aroma chemicals, flavours, savoury ingredients, cultures, enzymes, carotenoids, and vitamins.
- (3) Firmenich is a privately owned company, headquartered in Geneva, Switzerland. It specialises in the production and supply of fragrances, flavours, aroma chemicals, pine resin, pine turpentine oil, pine terpene, and systems.

2. THE TRANSACTION

- (4) Pursuant to a Business Combination Agreement, executed on 30 May 2022, the Transaction is to be effected through a public offer for DSM shares in exchange for DSM-Firmenich shares (on a 1:1 exchange ratio) and contribution of Firmenich shares to DSM-Firmenich in exchange for DSM-Firmenich shares and a contribution in cash. After completion of the merger, DSM-Firmenich will own 100% of the shares in both DSM and Firmenich.⁴
- (5) The Transaction therefore constitutes a concentration within the meaning of Article 3(1)(b) of the Merger Regulation.

3. UNION DIMENSION

- (6) DSM and Firmenich have a combined aggregate worldwide turnover of more than EUR 5 000 million (Firmenich EUR 3 936 million and DSM EUR 9 468 million).⁵ Each of them has a Union-wide turnover in excess of EUR 250 million, but each of them does not achieve more than two-thirds of their aggregate Union-wide turnover within one and the same Member State. The notified operation therefore has a Union dimension.

4. RELEVANT MARKETS

- (7) The Notifying Parties' activities overlap horizontally in the manufacture and supply of aroma chemicals and flavours. There are also a number of vertical links in relation to savoury ingredients, fragrances, carotenoids, enzymes and vitamins. In addition, the Transaction entails the conglomerate integration of closely related products, involving, in particular, the supply by DSM of carotenoids, vitamins, and cultures.

4.1. Flavours

- (8) Flavours are compounds of naturally occurring and/or synthetically manufactured ingredients to impart flavour, simulate the original flavour, maintain its character, or to enhance it, for materials designated for human consumption or animal feeding. Flavours are used in a wide range of products, including processed foods, drinks, chewing gum, pharmaceutical products, tobacco and fodder.

⁴ DSM-Firmenich will be listed on Euronext Amsterdam and no shareholder, including none of Firmenich's current shareholders, will be able to exercise de jure or de facto control over DSM-Firmenich post-closing.

⁵ Turnover calculated in accordance with Article 5 of the Merger Regulation.

- (9) The Notifying Parties' activities overlap in the supply of flavours. DSM is active in flavours that are mainly used in savoury and dairy applications. Firmenich produces both natural and synthetic flavours for a wide range of segments, covering savoury, confectionery, dairy, beverage, and dietary supplements. The activities of the Notifying Parties do not overlap in synthetic flavours, as DSM is not active in the production and sale of such flavours.⁶

4.1.1. Relevant Product Market

4.1.1.1. The Notifying Parties' views

- (10) The Notifying Parties submit that the relevant product market is the overall market for flavours, without further segmentation, although the exact product market definition can be left open, since no competition concerns arise under any plausible market definition.⁷

4.1.1.2. Commission's decisional practice

- (11) While leaving the exact product market definition open, the Commission has previously considered flavours (as a whole) as a relevant product market due to the high degree of supply-side substitutability.⁸
- (12) In more recent precedents, the Commission's market investigation suggested that the market for flavours could be defined on the basis of narrower segments according to the application (e.g. flavours for savoury, sweets, dairy, beverages, and pharmaceuticals). Further, the Commission considered a segmentation between the 'natural' or 'non-natural' (or synthetic) character of the flavour.⁹ However, the Commission concluded that there appeared to be a high degree of supply-side substitutability, and ultimately left the exact product market definition open.¹⁰

4.1.1.3. Commission's assessment

- (13) The market investigation was inconclusive as regards the appropriate product market definition for flavours. For example, a competitor points at different segments within the flavours market (such as savoury, beverage, culinary, sweeteners, pharmaceutical or dairy) and considers that suppliers usually specialise in certain categories.¹¹ At the same time, a customer submits that the market for flavours should not be further segmented, also in relation with 'natural' and 'non-natural' flavours.¹² This same customer indicates that '*suppliers can adapt their production lines rapidly [...] to produce and supply new flavours*' and that flavours recipes can be reverse-engineered without end-consumers spotting the differences.¹³

⁶ Form CO, footnote 139.

⁷ Form CO, paragraph 138.

⁸ Commission decision of 16 September 2002 in Case COMP/M. 2926 – *EQT/H&R/DRAGOCO*, paragraphs 19 and 20.

⁹ Commission decision of 21 February 2007 in Case COMP/M. 4507 – *Givaudan/Quest International*, paragraph 12.

¹⁰ Commission decision of 21 February 2007 in Case COMP/M. 4507 – *Givaudan/Quest International*, paragraphs 12 and 13.

¹¹ Non-confidential minutes of a call with a competitor of 21 October 2022, paragraphs 10 and 11.

¹² Non-confidential minutes of a call with a customer of 11 October 2022, paragraph 9.

¹³ Non-confidential minutes of a call with a customer of 11 October 2022, paragraph 8.

- (14) However, the exact product market definition can ultimately be left open in this case, since even if plausible narrower markets (e.g. on the basis of different applications or the natural v. synthetic character of the flavour) were defined, no competition concerns would arise, as will be further explained in the competitive assessment.

4.1.2. *Relevant Geographic Market*

4.1.2.1. Commission's decisional practice

- (15) While leaving the exact geographic market definition open, the Commission has previously considered that the market for the supply of flavours is at least EEA-wide in scope.¹⁴ The Commission noted that the general conditions for the production of flavours are homogeneous worldwide. For example, transport costs are low, there are no significant price differentials, cross-border supplies are commonplace, and there are no tariffs or other non-tariff barriers within the EEA or elsewhere.¹⁵

4.1.2.2. The Notifying Parties' views

- (16) The Notifying Parties submit that the appropriate geographic market is worldwide in scope, mainly due to the absence of tariffs or other non-tariff barriers within the EEA or elsewhere, the limited transport costs, the existence of homogeneous conditions worldwide for the production of flavours, the existence of imports into the EEA, and the existence of similar conditions outside and within the EEA.¹⁶

4.1.2.3. Commission's assessment

- (17) The market definition proposed by the Notifying Parties was to an extent confirmed by the results of the market investigation. For example, several customers indicated that they purchased flavours globally, and one indicated reasons of supply resilience.¹⁷ While a customer did indicate regulatory barriers (with differences between the US and the EU) and certain regional differences in the composition of some flavours, it also explained that all flavours could be sourced from the same group of global suppliers.¹⁸
- (18) However, the exact geographic market definition (EEA-wide or worldwide) can ultimately be left open in this case, since no competition concerns arise under either assumption.

¹⁴ Commission decision of 16 September 2002 in Case COMP/M. 2926 – *EQT/H&R/DRAGOCO*, paragraphs 33-38; Commission decision of 21 February 2007 in Case COMP/M. 4507 – *Givaudan/Quest International*, paragraph 24.

¹⁵ Commission decision of 16 September 2002 in Case COMP/M. 2926 – *EQT/H&R/DRAGOCO*, paragraphs 33-38; Commission decision of 21 February 2007 in Case COMP/M. 4507 – *Givaudan/Quest International*, paragraph 23.

¹⁶ Form CO, paragraph 142.

¹⁷ Non-confidential minutes of a call with a customer of 11 October 2022, paragraph 12; and non-confidential minutes of a call with a customer of 12 October 2022, paragraph 10.

¹⁸ Non-confidential minutes of a call with a customer of 11 October 2022, paragraph 11.

4.2. Carotenoids

- (19) Carotenoids are fat-soluble materials, mostly used as pigments for foods and cosmetics and to impact colour to animal flesh. There are various carotenoids, of which beta-carotene is an example.
- (20) Beta-carotene is a provitamin A that is converted into vitamin A when ingested by a living organism. Beta-carotene is, in large part, used in food applications (as dietary supplement and for food colouring), in particular, in beverages. Beta-carotene can be found in synthetic and natural form.
- (21) DSM is a manufacturer and supplier of both natural and synthetic beta-carotene. Firmenich purchases both natural and synthetic beta-carotene as an input for its Systems for food applications (as defined below in Section 4.5).

4.2.1. Relevant Product Market

4.2.1.1. Commission's decisional practice

- (22) While leaving the exact product market definition open, the Commission has previously considered the market for carotenoids as a separate market, distinct from vitamins and other type of nutrients.¹⁹ Within the carotenoids market, the Commission considered beta-carotene as separate from other carotenoids.²⁰ The Commission also envisaged a distinction between natural beta-carotene and synthetic beta-carotene, due to price differences and different production processes.²¹

4.2.1.2. The Notifying Parties' views

- (23) The Notifying Parties agree with the Commission's past approach to consider the market for beta-carotene as a separate market, distinct from other carotenoids, with a further distinction between natural and synthetic beta-carotene due to limited substitutability given the significant price difference.²² However, the Notifying Parties highlight that beta-carotene is primarily used for its colouring properties. Considering this intended use, the Notifying Parties claim that there are other colorants which can substitute beta-carotene.²³

4.2.1.3. Commission's assessment

- (24) With respect to the product market definition, the outcome of the market investigation is inconclusive. While the majority of customers expressing their opinion consider that beta-carotene should be a separate market, distinct from other carotenoids (due to different intended use and applications),²⁴ the majority of competitors expressing an opinion state the opposite. At the same time, the same competitors express the view that a segmentation could be envisaged based on the

¹⁹ Commission decision of 3 October 2011 in Case COMP/M. 6141 – *China National Agrochemical Corporation/ Koor Industries/ Makhteshim Agan Industries*, paragraph 40.

²⁰ Commission decision of 3 October 2011 in Case COMP/M. 6141 – *China National Agrochemical Corporation/ Koor Industries/ Makhteshim Agan Industries*, paragraph 40.

²¹ Commission decision of 30 November 2010 in Case COMP/M.5927 – *BASF/COGNIS*, paragraphs 143-145.

²² Form CO, paragraphs 407 and 408.

²³ Form CO, paragraph 411.

²⁴ Questionnaire Q1 to customers, questions F1 and F2.

intended use of carotenoids.²⁵ For instance, one competitor submits that *'[it] depends on the use [...]'*.²⁶ One other competitor explains that *'[...] Ability to substitute depends on specific applications'*.²⁷

- (25) The Notifying Parties' internal documents indicate a possible further segmentation of the market for beta-carotene into natural and synthetic.²⁸
- (26) In any event, the exact market definition for carotenoids can be left open for the purposes of this decision, since the Transaction does not raise any competition concerns irrespective of the precise product market definition.

4.2.2. Relevant Geographic Market

4.2.2.1. Commission's decisional practice

- (27) In previous decisions, the Commission found the geographic scope for the beta-carotene market to be at least EEA-wide, and indicated that it could be even worldwide.²⁹

4.2.2.2. The Notifying Parties' view

- (28) The Notifying Parties agree with the Commission's past practice to consider the market for beta-carotene at least EEA-wide, if not even worldwide in scope, as (i) customers source the majority of their beta-carotene requirements at a worldwide level; and (ii) the distribution of beta-carotene is organised at a worldwide level, with suppliers being active worldwide.³⁰

4.2.2.3. Commission's assessment

- (29) The majority of market participants expressing an opinion consider the market for beta-carotene as worldwide in scope,³¹ as suppliers deliver globally and customers enter into contracts that cover multiple countries.³² For instance, one customer submits that it enters into *'global contracts. [And] [...] suppliers have global presence or [are] able to deliver globally'*.³³
- (30) In any event, the precise geographic market definition of beta-carotene can be left open for the purposes of this decision since the Transaction does not give rise to competition concerns irrespective of the exact market definition.

²⁵ Questionnaire Q2 to competitors, questions F1, F2, F3, and F4.

²⁶ Questionnaire Q2 to competitors, question F2.

²⁷ Questionnaire Q2 to competitors, questions F2.

²⁸ The Notifying Parties' internal documents responsive to Section 5.4. of the Form CO.

²⁹ Commission decision of 3 October 2011 in Case COMP/M. 6141 – *China National Agrochemical Corporation/ Koor Industries/ Makhteshim Agan Industries*, paragraph 42; and Commission decision of 30 November 2010 in Case COMP/M. 5927 – *BASF/ Cognis*, paragraphs 146-150

³⁰ Form CO, paragraph 409.

³¹ Questionnaire Q1 to customers, questions D1, D2, D3, and D4; Questionnaire Q2 to competitors, questions D1, D2 and D3.

³² Questionnaire Q1 to customers, question D2; Questionnaire Q2 to competitors, questions D1, D2 and D3.

³³ Questionnaire Q1 to customers, question D2.

4.3. Cultures

- (31) Cultures are living microorganisms, such as bacteria, yeast, or mould, used in food and beverage manufacturing, animal and plant health, and animal feed. These provide a beneficial impact when used in a production process or are included in a final product. Cultures ferment sugars and hence lower the pH value to protect the food, *e.g.*, to extend shelf life and inhibit specific contaminating flora.
- (32) In food preparations, cultures are used as bacterial starters or adjuncts. Cultures are also used in food preparations for their protective properties and to achieve greater production efficiency and specific product characteristics (such as flavour, texture, consistency, colour, taste), and to preserve perishable foods.
- (33) DSM is a manufacturer and supplier of cultures for dairy products.³⁴ Such cultures can be used together with flavours and other ingredients to produce Systems for food applications (as defined below under Section 4.5).

4.3.1. *Relevant Product Market*

4.3.1.1. Commission's decisional practice

- (34) In its previous decisions, while ultimately leaving the market definition open, the Commission considered a possible further segmentation of the market for the manufacture and supply of cultures based on end-application. For instance, the possibility of a separate market for dairy cultures has been envisaged. However, a further segmentation of the market for dairy cultures has not been supported by the market investigation in past cases.³⁵

4.3.1.2. The Notifying Parties' views

- (35) The Notifying Parties submit that the market for the manufacture and supply of dairy cultures constitutes a separate market, which should not be further segmented based on functionality (*e.g.* acidifying, protective).³⁶ First, due to the complex interplay between dairy cultures, it is not possible to use them in isolation. For instance, a protective culture might lead to additional acidity. In this case, the acidifying culture would need to be adjusted by using an additional dairy culture with adjustment properties.³⁷ Second, the technology used to produce different types of dairy cultures is the same.³⁸ Third, there is a broad choice of suppliers active in all classes of cultures. Last, producers of dairy, either fresh dairy (such as yoghurt) or cheese will always multi-source different cultures, as the blend of cultures is of key importance to the taste and texture of the final product.³⁹

³⁴ The Notifying Parties submit under paragraph 544 of the Form CO that DSM has recently entered the market for cultures for plant-based food and does not currently have any sales on this market. In addition, the Notifying Parties submit that DSM is no longer active in the market for cultures for meat.

³⁵ Commission decision of 7 December 2020 in case COMP/M.9827 - *INTERNATIONAL FLAVORS & FRAGRANCES / NUTRITION & BIOSCIENCES*, paragraph 33.

³⁶ Form CO, paragraph 534.

³⁷ Form CO, paragraph 535.

³⁸ Form CO, paragraph 536.

³⁹ Form CO, paragraph 538.

4.3.1.3. Commission's assessment

- (36) The outcome of the market investigation provides indications that the market for cultures should be further segmented into cultures for meat, dairy cultures and cultures for plant-based food.⁴⁰ This is also supported by the Notifying Parties' internal documents.⁴¹
- (37) In any event, the exact market definition for cultures can be left open for the purposes of this decision, since the Transaction does not raise any competition concerns irrespective of the precise product market definition.

4.3.2. *Relevant Geographic Market*

4.3.2.1. Commission's decisional practice

- (38) In its previous decisional practice, the Commission assessed whether the market for cultures is EEA-or worldwide in scope. The outcome of the market investigation was inconclusive. The Commission ultimately left the exact scope of the geographic market open.⁴²

4.3.2.2. The Notifying Parties' view

- (39) The Notifying Parties submit that the geographic market definition in respect to cultures should be left open, as the Transaction does not give rise to competition concerns irrespective of the exact market definition. In any event, the Notifying Parties suggest that the market for cultures should be defined at least at the EEA level.⁴³

4.3.2.3. Commission's assessment

- (40) The results of the market investigation show that the market for cultures is worldwide in scope.⁴⁴ The market participants expressing their opinion submit that both the scope of procurement and of supply are worldwide.⁴⁵
- (41) In any event, the precise definition of the geographic market with regard to cultures can be left open for the purposes of this decision since under either market definition (EEA or worldwide), no competition concerns arise as a result of the Transaction.

4.4. **Vitamins**

- (42) Vitamins are a group of micronutrients of various types of organic compounds required in small amounts in human and animal diet for normal growth, development and maintenance of life. Their physiological function in the organism and mode of action are diverse. For instance, while certain vitamins are essential

⁴⁰ Questionnaire Q1 to customers, questions H1 and H2; and Questionnaire Q2 to competitors, questions H1 and H2.

⁴¹ The Notifying Parties' internal documents responsive to Section 5.4. of the Form CO.

⁴² Commission decision of Commission decision of 7 December 2020 in Case COMP/M.9827 - *INTERNATIONAL FLAVORS & FRAGRANCES / NUTRITION & BIOSCIENCES*, paragraphs 36 - 40.

⁴³ Form CO, paragraph 538.

⁴⁴ Questionnaire Q1 to customers, question D1; and Questionnaire Q2 to competitors, question D1.

⁴⁵ Questionnaire Q1 to customers, question D3; and Questionnaire Q2 to competitors, question D2.

sources of coenzymes necessary for metabolism, others are involved in the metabolism of other vitamins. All known vitamins can be synthesised chemically.

- (43) DSM is a manufacturer and supplier of various vitamins for human consumption, such as vitamin A, B1, B3, B5, B6, B12, and natural and synthetic vitamin E. Firmenich purchases vitamin B1, B3, B5, B6, B12 and synthetic vitamin E as input for its Systems for food applications (as defined below in Section 4.5).
- (44) Furthermore, vitamins A, B1, B3, B5, B6 and synthetic vitamin E produced by DSM can be used in combination with flavours.

4.4.1. *Relevant product market*

4.4.1.1. Commission's decisional practice

- (45) While leaving the exact market definition open, in its previous decisional practice, the Commission considered that each vitamin constitutes a separate product market.⁴⁶ With respect to vitamin E, the Commission has previously considered a further segmentation between natural vitamin E and synthetic vitamin E, leaving, however, the precise market definition open.⁴⁷

4.4.1.2. The Notifying Parties' view

- (46) The Notifying Parties' submit that vitamins A, B1, B3, B5, B6, B12, each constitutes a separate market.⁴⁸ With respect to vitamin E, the Notifying Parties submit that the market should be further segmented into natural vitamin E and synthetic vitamin E.⁴⁹

4.4.1.3. Commission's assessment

- (47) The outcome of the market investigation confirms the Notifying Parties' claim that each vitamin constitutes a separate market, as vitamins are not interchangeable with one another, because of both demand and supply side considerations.⁵⁰ A majority of customers expressing their opinion consider that vitamins are not interchangeable with each other due to their different sourcing, specific manufacturing process, price, and intended use.⁵¹ A majority of competitors expressing an opinion consider that it is not easy to switch production between different vitamins without incurring significant additional costs.⁵² This seems to be confirmed also by the Notifying Parties' internal documents.⁵³
- (48) With respect to the Notifying Parties' claim for a further segmentation of the market for vitamin E, the results of the market investigation confirm such claim, considering the differentiation in price and intended use, and limited ability to

⁴⁶ Commission decision of 28 October 2002 in Case COMP/M.2956 – CVC/ PAIEUROPE/PROVIMI, paragraph 14.

⁴⁷ Commission decision of 30 November 2010 in Case COMP/M.5927 – BASF/ COGNIS, paragraph 132.

⁴⁸ Form CO, paragraphs 428, 441, 454, 467, 481, 560, and 564.

⁴⁹ From CO, paragraphs 492 and 493.

⁵⁰ Questionnaire Q1 to customers, questions I1 and I2; and Questionnaire Q2 to competitors, questions I2, I3, I6, and I7.

⁵¹ Questionnaire Q1 to customers, questions I1 and I2.

⁵² Questionnaire Q2 to competitors, questions I6 and I7.

⁵³ The Notifying Parties' internal documents responsive to Section 5.4. of the Form CO.

switch production between natural and synthetic vitamin E.⁵⁴ This seems to be confirmed also by the Notifying Parties' internal documents.⁵⁵

- (49) In any event, for the purposes of this decision, the exact market definition for vitamins can be left open, since the Transaction does not raise any competition concerns irrespective of the exact product market definition.

4.4.2. *Relevant geographic market*

4.4.2.1. Commission's decisional practice

- (50) While leaving the exact geographic market definition open, in its previous decisional practice the Commission considered the geographic scope for the vitamins markets to be at worldwide.⁵⁶ Further, the Commission considered the geographic scope for synthetic and natural vitamin E as worldwide, leaving, however, the exact geographic market definitions open.⁵⁷

4.4.2.2. The Notifying Parties' view

- (51) The Notifying Parties argue that relevant geographic markets for vitamins are worldwide.⁵⁸ With respect to the further segmentation of vitamin E into natural vitamin E and synthetic vitamin E, the Notifying Parties submit that the geographic scopes are worldwide.⁵⁹

4.4.2.3. Commission's assessment

- (52) The results of the market investigation confirm the Notifying Parties' claim for worldwide markets for vitamins, as customers source vitamins at a worldwide level and vitamins are exported globally.⁶⁰

4.5. **Systems for food applications**

- (53) Firmenich produces and supplies products that consist of two or more ingredients that are blended together for food applications ('Systems for food applications'). The vast majority of the Systems for food applications offered by Firmenich are a combination between flavours and different ingredients, mixed together to provide extra performance to flavours.

⁵⁴ Questionnaire Q1 to customers, questions I3 and I4; and Questionnaire Q2 to competitors, questions I6, I7 and I8.

⁵⁵ The Notifying Parties' internal documents responsive to Section 5.4. of the Form CO.

⁵⁶ Commission decision of 28 October 2002 in Case COMP/M.2956 – CVC/ PAIEUROPE/PROVIMI, paragraph 21.

⁵⁷ Commission decision of 30 November 2010 in Case COMP/M.5927 – BASF/COGNIS, paragraphs 136 and 137.

⁵⁸ Form CO, paragraphs 429, 442, 455, 468, 481, and 563.

⁵⁹ Form CO, paragraph 494.

⁶⁰ Questionnaire Q1 to customers, questions D1, D2, D3, and D4; and Questionnaire Q2 to competitors, questions D1, D2, D3, and D4.

4.5.1. *Relevant Product Market*

4.5.1.1. Commission's decisional practice

(54) While leaving the exact product market definition open, in its previous decisional practice, the Commission considered a further segmentation of the market for Systems based on end-use application. Thus, a further segmentation of the systems market into systems for food application was considered.⁶¹

4.5.1.2. The Notifying Parties' views

(55) The Notifying Parties submit that the product market definition with respect to Systems should be left open, as the Transaction does not give rise to competition concerns irrespective of the exact market definition. In any event, the Notifying Parties suggest that a separate market for systems for food applications should be defined.⁶²

4.5.1.3. Commission's assessment

(56) Considering that, as mentioned above under paragraph (53), Firmenich is only active on the market for Systems for food applications and, since the Transaction does not raise any competition concerns irrespective of the precise product market definition, the exact product market definition can be left open.

4.5.2. *Relevant Geographic Market*

4.5.2.1. Commission's decisional practice

(57) In its previous decisions, while ultimately leaving the market definition open, the Commission considered the market for systems as worldwide in scope.⁶³

4.5.2.2. The Notifying Parties' view

(58) The Notifying Parties agree with the Commissions' past approach to consider the market for systems as worldwide in scope.⁶⁴

4.5.2.3. Commission's assessment

(59) For the purpose of this decision, the exact geographic market definition for Systems can be left open since no competition concerns arise as a result of the Transaction under either a worldwide geographic market or a narrower geographic scope, such as the EEA.

4.6. **Conclusion**

(60) As the outcome of the competitive assessment remains the same under any alternative relevant product market segmentation, for the purpose of this decision, the product and geographic (i.e. EEA or worldwide) market definition in respect to

⁶¹ Commission decision of 27 July 2017 in Case COMP/M.8440 - DUPONT / FMC (HEALTH AND NUTRITION BUSINESS), paragraphs 172-173.

⁶² Notifying Parties' reply to RFI 1, dated 2 February 2023, paragraph 5.

⁶³ Commission decision of 27 July 2017 in Case COMP/M.8440 - DUPONT / FMC (HEALTH AND NUTRITION BUSINESS), paragraphs 174 and 175.

⁶⁴ Notifying Parties' reply to RFI 1, dated 2 February 2023, paragraph 8.

the manufacture and supply of flavours, beta-carotene, cultures, vitamins, or systems can be left open.

5. COMPETITIVE ASSESSMENT

- (61) Considering a definition of the relevant product market on the basis of all plausible segments, the Transaction would give rise to one affected horizontal potential market between the Notifying Parties' activities: the manufacture and supply of flavours for savoury products.
- (62) In addition, if the potential markets for beta-carotene, vitamins and Systems would be defined on the basis of potential narrower segments, as discussed above under Sections 4.2, 4.4 and 4.5, the Transaction would give rise to vertically affected markets between:
- (a) DSM's activities in the production and sale of (i) natural and synthetic beta-carotene; and (ii) vitamins B1, B3, B5, B6, and synthetic vitamin E (both upstream); and
 - (b) Firmenich's activities in the production of Systems for food applications (downstream).
- (63) Furthermore, the Transaction gives rise to conglomerate relationships which arise from the Notifying Parties' activity in complementary product segments. On the one hand, DSM is active on the potential markets for natural and synthetic beta-carotene, dairy cultures and vitamins A, B1, B3, B5, B6, and synthetic vitamin E, where it holds a significant market position. On the other hand, Firmenich, and to a less extent, DSM, is active on the potential market for flavours for savoury products, which can be combined together with natural and synthetic beta-carotene, dairy cultures and vitamins A, B1, B3, B5, B6, and synthetic vitamin E by customers in food preparations.

5.1. Legal Framework

- (64) Pursuant to Article 2(2) and (3) of the Merger Regulation,⁶⁵ the Commission must assess whether a concentration would significantly impede effective competition in the internal market or in a substantial part of it, in particular through the creation or strengthening of a dominant position. In this respect, a merger can entail horizontal and/or non-horizontal effects.
- (65) Horizontal effects arise when the parties to a concentration are actual or potential competitors in one or more of the relevant markets concerned. The Commission appraises horizontal effects in accordance with the guidance set out in the Horizontal Merger Guidelines.⁶⁶
- (66) With particular regard to non-horizontal effects, a merger can entail such effects when it involves companies operating at different levels of the same value chain or in closely related markets.
- (67) In assessing potential vertical effects of a merger, the Commission analyses, among others, whether the merger results in foreclosure so that actual or potential rivals'

⁶⁵ Annex XIV of the EEA Agreement contains specific provisions as regards the EEA.

⁶⁶ Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings ("Horizontal Merger Guidelines"), OJ C 31, 05.02.2014

access to supplies or markets is hampered or eliminated as a result of the merger, thereby reducing those companies' ability and/or incentive to compete.⁶⁷ Such foreclosure may discourage entry or expansion of rivals or encourage their exit. Foreclosure can be found even if the foreclosed rivals are not forced to exit the market. It is sufficient that the rivals are disadvantaged and consequently led to compete less effectively. Such foreclosure is regarded as anti-competitive where the merging companies — and, possibly, some of their competitors as well — are as a result able to profitably increase the price charged to consumers.

- (68) The Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings ('Non-Horizontal Merger Guidelines') distinguish between two forms of foreclosure: (i) input foreclosure, when access of downstream rivals to supplies is hampered;⁶⁸ and (ii) customer foreclosure, when access of upstream rivals to a sufficient customer base is hampered.⁶⁹ Conglomerate mergers may also lead to the foreclosure of rivals, by allowing the merged entity to leverage a strong market position from one market to another by means of tying, bundling or other exclusionary practice.⁷⁰
- (69) In assessing the likelihood of such foreclosure scenarios, the Commission assesses whether the merged entity would have the (i) ability and (ii) the economic incentive to foreclose its rivals, as well as (iii) whether such foreclosure strategy would have a detrimental effect on competition, causing harm to consumers.⁷¹
- (70) The Commission will assess, under Article 6(1)(b) of the Merger Regulation and Article 57 of the EEA Agreement, whether the Transaction gives rise to serious doubts due to vertical non-coordinated effects or conglomerate effects on the markets examined in Section 5.

5.2. Horizontal non-coordinate effects

5.2.1. Flavours for savoury products

- (71) For the purpose of assessing whether the Transaction gives rise to any competition concerns, the plausible narrower market for flavours for savoury products has been considered. The Transaction gives rise to a horizontally affected potential market in the manufacture and supply of flavours for savoury products in the EEA. The Transaction does not give rise to horizontally affected markets under any other plausible market definitions (e.g. natural flavours, nor other applications that are not for savoury products, either at EEA-level or worldwide). Therefore, the Commission will conduct its competitive assessment on the basis of the only affected market, which is the manufacture and supply of flavours for savoury products at EEA-level.

⁶⁷ Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ C 265, 18.10.2008, p.6-25, paras. 20-29. ('Non-Horizontal Merger Guidelines')

⁶⁸ Non-Horizontal Merger Guidelines, para. 31.

⁶⁹ Non-Horizontal Merger Guidelines, para. 58.

⁷⁰ Non-Horizontal Merger Guidelines, para 93.

⁷¹ Non-Horizontal Merger Guidelines, paras 32 and 94.

5.2.1.1. The Notifying Parties' combined market share for flavours for savoury products exceeded the 20% threshold (amounting to [20-30]%) only at EEA-level and only in volume in 2021 (Firmenich [20-30]%, DSM [0-5]%). In value, it was [10-20]% (Firmenich [10-20]%, DSM <[0-5]%). The Notifying Parties' arguments

(72) The Notifying Parties argue that the Transaction will be unlikely to raise serious doubts because: (i) their portfolios are complementary as their products differ in character, concentration and final declaration;⁷² and (ii) the market share increment is negligible, and the total size of the market was calculated conservatively.

5.2.1.2. Commission's assessment

(73) The Commission considers that the Transaction is unlikely to raise serious doubts for the following reasons.

(74) **First**, the increment brought about with the Transaction (less than [0-5]%) is negligible, and the combined share of the Notifying Parties ([20-30]%) is moderate. The HHI delta is 2, which is well below the level for which the Commission would find horizontal competition concerns.⁷³

(75) **Second**, there are a number of competitors in the market who will continue to exert competitive pressure on the merged entity. These include Givaudan (IFF, Symrise, Mane, Robertet, Kao and Takasago).⁷⁴

(76) **Third**, the market investigation appears to support the Notifying Parties' argument about the complementarity of their products. In this line, a customer submits that '*the Parties' activities show little overlap*'.⁷⁵

5.3. Vertical non-coordinated effects

5.3.1. *Manufacturing and supply of natural and synthetic beta-carotene (upstream) / Manufacturing and supply of Systems for food applications (downstream)*

(77) As mentioned above under Section 4.2, DSM manufactures and supplies both natural and synthetic beta-carotene. Vertical links arise due to Firmenich's purchases of beta-carotene from DSM and from third parties for its downstream production of Systems for food applications.

(78) For the purpose of assessing whether the Transaction gives rise to any competition concerns, the plausible narrower market for beta-carotene has been considered, further segmented into synthetic and natural beta-carotene. As explained below under sub-Section 5.3.1.1. below, DSM's market share on the possible upstream market for the production and supply of beta-carotene exceeds 30% under any plausible product (i.e. overall beta-carotene, natural or synthetic beta-carotene) and geographic (i.e. worldwide or EEA-wide) market definition. Accordingly, this vertical relationship gives rise to affected potential markets in the manufacture and supply of (i) natural and (ii) synthetic beta-carotene (both upstream) and the manufacture and supply of Systems for food applications (downstream).

⁷² Form CO, paragraph 145.

⁷³ Horizontal Merger Guidelines, para. 20.

⁷⁴ Non-confidential minutes of a call with a customer of 11 October 2022, paragraphs 3 and 14; Non-confidential minutes of a call with a competitor of 13 October 2020, paragraph 11.

⁷⁵ Non-confidential minutes of a call with a customer of 11 October 2022, paragraph 16.

Furthermore, as shown below under Section 5.3.1.1., Firmenich has a market share below 20% (EEA-level or worldwide).

5.3.1.1. Market shares

(79) Table 1 compiles DSM's market shares in the manufacture and supply of beta-carotene and further segmented into synthetic and natural, EEA and worldwide in 2021:

Table 1 – DSM and its main competitors' market shares in the production and supply of beta-carotene overall, natural beta-carotene and synthetic beta-carotene, EEA-wide and worldwide (2021)⁷⁶

Beta-carotene (overall)				
Suppliers	EEA		Worldwide	
	value	volume	value	volume
DSM	[60-70]%	[50-60]%	[40-50]%	[40-50]%
BASF	[10-20]%	[10-20]%	[20-30]%	[20-30]%
Xinchang	[5-10]%	[10-20]%	[0-5]%	[5-10]%
Divis	[5-10]%	[5-10]%	[5-10]%	[5-10]%
Zhejiang	[0-5]%	[5-10]%	N/A	N/A
Natural beta-carotene				
Suppliers	EEA		Worldwide	
	value	volume	value	volume
DSM	[60-70]%	[60-70]%	[50-60]%	[50-60]%
Lycored	[10-20]%	[10-20]%	[10-20]%	[10-20]%
BASF	[5-10]%	[5-10]%	[5-10]%	[5-10]%
Xinchang	[5-10]%	[10-20]%	[5-10]%	[10-20]%
Synthetic beta-carotene				
Suppliers	EEA		Worldwide	
	value	volume	value	volume
DSM	[50-60]%	[50-60]%	[40-50]%	[40-50]%
BASF	[20-30]%	[10-20]%	[30-40]%	[30-40]%
Divis	[5-10]%	[10-20]%	[5-10]%	[5-10]%
Xinchang	[5-10]%	[5-10]%	[0-5]%	[5-10]%
Allied	[0-5]%	[0-5]%	[5-10]%	[5-10]%

Source: Commission, based on Form CO, Tables 67, 68, 69, 70, 71, and 72.

(80) Table 2 below compiles Firmenich and its main competitors' market shares in production of Systems for food applications, EEA and worldwide in 2021:

⁷⁶ Table 1 contains market share data of DSM's competitors holding a market share of minimum 5%.

Table 2 - Firmenich and its main competitors' market shares in Systems for food applications, EEA-wide and worldwide, 2021

Systems for food applications				
Suppliers	EEA (2021)		Worldwide (2021)	
	value	volume	value	volume
Firmenich	[10-20]%	[20-30]%	[10-20]%	[10-20]%
Givaudan	[30-40]%	[30-40]%	[30-40]%	[30-40]%
IFF	[30-40]%	[30-40]%	[30-40]%	[30-40]%
Symrise	[10-20]%	[10-20]%	[10-20]%	[10-20]%

Source: Notifying Parties' reply to RFI 1, dated 2 February 2023, Tables 1 and 2.

5.3.1.2. Notifying Parties' arguments

(81) The Notifying Parties submit for each affected market that the Transaction will not raise vertical concerns in relation to the manufacturing and supply of natural or synthetic beta-carotene upstream and the manufacturing and supply of Systems for food applications downstream for the following reasons:

- i. **First**, Firmenich's competitors in the downstream market for Systems for food applications are not among DSM's main customers of neither natural, nor synthetic beta-carotene;⁷⁷
- ii. **Second**, beta-carotene is not an important input in the production of Systems for food applications. Beta-carotene can be substituted with various other colorants. Furthermore, the purchases made by Firmenich of beta-carotene from DSM are minimal;⁷⁸
- iii. **Third**, Firmenich's total demand of beta-carotene to produce Systems for food applications is less than [0-5]% of the market for beta-carotene in the EEA and worldwide;⁷⁹
- iv. **Fourth**, a sufficient number of competitors will remain active on the market for the manufacture and supply of synthetic and natural beta-carotene, such as BASF, Xinchang Pharma (ZMC), Zhejiang NHU, Divis, and Allied;⁸⁰
- v. **Last**, barriers to enter the market for the manufacture and supply of beta-carotene are not significant. Companies such as Allied, Juyuan, and Divis have entered the market for beta-carotene in the past year.⁸¹

5.3.1.3. Input foreclosure

5.3.1.3.1. Commission's assessment

(82) The outcome of the market investigation indicates on balance that the merged entity would have no ability or incentive to engage in an input foreclosure strategy.

⁷⁷ Form CO, paragraph 418.

⁷⁸ Form CO, paragraph 413.

⁷⁹ Form CO, paragraph 413.

⁸⁰ Form CO, paragraph 421.

⁸¹ Form CO, paragraph 421.

- (83) Based on the results of the market investigation, the Commission considers that the merged entity does not have the ability to engage in an input foreclosure strategy, because there are several alternative suppliers active in the manufacture and supply of both natural and synthetic beta-carotene to which customers can turn if the merged entity decides to limit the availability of natural or synthetic beta-carotene.⁸² The existence of several alternative suppliers also mitigates the inconclusive results of the market investigation as regards the presence of barriers to entry. In this respect, while the majority of customers do not consider barriers to be high, competitors are of the opposite opinion.⁸³ One competitor submits that *‘capital requirements and know-how of product specifications [are] likely the biggest entry barrier[s]’*. One other competitor adds that the *‘manufacturing of beta-carotene is complex’*.⁸⁴ However, as mentioned above several suppliers will remain on the market post-Transaction.
- (84) Based on the market investigation, The Commission also considers that the merged entity does not have the incentive to foreclose because Firmenich has a low share of demand for beta-carotene (less than [0-5]%, EEA-wide or worldwide) and various alternative suppliers of natural and synthetic beta-carotene remain available for downstream rival producers of Systems for food applications.⁸⁵ Therefore, should DSM restrict supply to Firmenich’s competitors, it would lose revenue that would not be compensated otherwise through Firmenich’s downstream sales.
- (85) In this light, a majority of customers that have expressed their opinion consider that the merged entity would not have the ability nor the incentive to deteriorate supply conditions of either synthetic or natural beta-carotene.⁸⁶
- (86) In addition, market participants expressing their opinion in the market investigation consider that the Transaction will not have an impact on their company nor across the EEA with respect to the procurement of natural or synthetic beta-carotene.⁸⁷
- (87) In light of the above, the Commission considers that, notwithstanding DSM’s significant market share in the upstream market for the manufacture and supply of beta-carotene, the merged entity is not likely to have the ability to engage in an input foreclosure strategy. Furthermore, there is no likely risk of this materialising due to a lack of incentives for the merged entity. This is due to Firmenich’s low share of demand for beta-carotene, and the existence of several alternative suppliers of beta-carotene for Firmenich’s competitors downstream.

5.3.1.4. Customer foreclosure

5.3.1.4.1. Commission’s assessment

- (88) The Commission considers that the merged entity would not have the ability to restrict access to a significant customer base due to the limited size of Firmenich’s

⁸² Questionnaire Q1 to customers, questions F10, F13 and F14; and Questionnaire Q2 to competitors, questions F10, F17 and F18.

⁸³ Questionnaire Q1 to customers, questions F6 and F7; and Questionnaire Q2 to competitors, questions F6 and F7.

⁸⁴ Questionnaire Q2 to competitors, question F7.

⁸⁵ Form CO, paragraph 420.

⁸⁶ Questionnaire to customers, questions F11 and F12. At the same time, competitors did consider barriers to entry more significant (see Questionnaire Q2 to competitors, questions F15 and F16).

⁸⁷ Questionnaire Q2 to competitors, question J1; and Questionnaire Q1 to customers, question J1.

purchases. Even if Firmenich were to purchase all of its demand for beta-carotene from DSM, rival suppliers of beta-carotene would not be foreclosed from accessing the market, as a sufficient base of customers will still remain available, such as other downstream manufacturers of Systems for food applications, downstream food manufacturers, and manufacturers in other industries. A customer foreclosure strategy is therefore not likely.

5.3.1.5. Conclusion

(89) In light of the considerations in paragraphs (82) to (88) above, as well as the evidence available to it, the Commission concludes that the Transaction does not give rise to serious doubts as to its compatibility with the internal market due to the vertical non-coordinated effects arising from the Transaction in connection with the upstream markets for the supply of natural and synthetic beta-carotene, at EEA-level or worldwide and the manufacturing and supply of Systems for food application, at EEA-level or worldwide.

5.3.2. Manufacturing and supply of vitamin B1 (upstream) / Manufacturing and supply of Systems for food applications (downstream)

(90) As mentioned above, DSM manufactures and supplies vitamin B1. Vertical links arise due to Firmenich's purchase of vitamin B1 from third parties for its downstream production of Systems for food applications.

(91) DSM's market share on the upstream market for the manufacture and supply of vitamin B1 exceeds 30%, based on value, under any plausible market definition. Thus, this vertical relationship gives rise to affected markets in the upstream market for the manufacture and supply of vitamin B1 and the downstream market for the manufacture and supply of Systems for food applications.

5.3.2.1. Market shares

(92) Table 3 below compiles DSM and its main competitors' market shares in the manufacture and supply of vitamin B1, EEA-wide and worldwide (2021).

Table 3 - DSM and its main competitors' value-based market shares in the manufacturing and supply of vitamin B1, EEA-and worldwide (2021)⁸⁸

Product	EEA					Worldwide				
	DSM	Jiangxi Tianxin	Hubei Huazhong	Zhejiang Brother Enterprise	Shandong Xinfu	DSM	Jiangxi Tianxin	Hubei Huazhong	Shandong Xinfu	Zhejiang Brother Enterprise
Vitamin B1	[30-40]%	[20-30]%	[5-10]%	[5-10]%	[5-10]%	[30-40]%	[30-40]%	[10-20]%	[5-10]%	[5-10]%

Source: Form CO, Tables 82, 83, 84, and 85.

(93) Table 4 below compiles Firmenich and its main competitors' market shares in the manufacture and supply of Systems for food applications.

⁸⁸ Table 3 contains market share data of DSM's competitors holding a market share of minimum 5%.

Table 4 – Firmenich’ and its main competitors’ market shares in Systems for food applications, EEA-wide and worldwide, 2021

Systems for food applications				
Suppliers	EEA (2021)		Worldwide (2021)	
	value	volume	value	volume
Firmenich	[10-20]%	[20-30]%	[10-20]%	[10-20]%
Givaudan	[30-40]%	[30-40]%	[30-40]%	[30-40]%
IFF	[30-40]%	[30-40]%	[30-40]%	[30-40]%
Symrise	[10-20]%	[10-20]%	[10-20]%	[10-20]%

Source: Notifying Parties’ reply to RFI 1, dated 2 February 2023, Tables 1 and 2.

5.3.2.2. The Notifying Parties’ arguments

(94) The Notifying Parties submit that the Transaction will not raise vertical concerns in relation to the manufacturing and supply of vitamin B1 (upstream) and the manufacturing and supply of Systems for food applications (downstream).

- i. **First**, Firmenich’s demand of vitamin B1 to produce Systems for food applications is less than [0-5]% of the market for vitamin B1 both in the EEA and worldwide. Rival suppliers will still be able to supply vitamin B1 to other downstream manufacturers of Systems for food applications or to downstream food / or other industries manufacturers;⁸⁹
- ii. **Second**, there are several alternative suppliers of vitamin B1, such as Hubei Huazhong, Jiangxi Tianxin and Shandong Xinfu;⁹⁰
- iii. **Third**, barriers to enter the market for vitamin B1 are not significant. The market for vitamin B1 is based on well-established technology that has already existed for a long time and well-known sales channels;⁹¹

5.3.2.3. Input foreclosure

5.3.2.3.1. Commission’s assessment

(95) The outcome of the market investigation indicates that the merged entity would have no ability or incentive to engage in an input foreclosure strategy.

(96) **First**, it is unlikely that the merged entity would be able to engage in an input foreclosure strategy, as the results of the market investigation indicate that there is a sufficient number of suppliers active in the manufacture and supply of vitamin B1 to which customers can turn in case the merged entity decides to limit the availability of vitamin B1. Market participants indicated that, post-Transaction, suppliers such as Jiangxi Tianxin, Hubei Huazhong, Zhejiang Brother Enterprise will still be able to supply vitamin B1.⁹²

⁸⁹ From CO, paragraphs 436 and 438.

⁹⁰ Form CO, paragraph 437.

⁹¹ Form CO, paragraph 437.

⁹² Questionnaire Q1 to customers, question I5(2); and Questionnaire Q2 to competitors, question I10(2).

- (97) Further, the majority of customers expressing their opinion submit that DSM' product portfolio (including vitamin B1) is not unique and alternative suppliers will remain on the market post-Transaction capable of supplying the same products.⁹³
- (98) **Second**, it is unlikely that the merged entity would have the incentive to engage in an input foreclosure strategy, as (i) Firmenich has a low share of demand for vitamin B1 (less than [0-5]%, EEA-wide or worldwide),⁹⁴ and (ii) various alternative suppliers of vitamin B1 remain available for downstream rival producers of Systems for food applications, as well as for other customers, such as food manufacturers or manufacturers in other industries.⁹⁵ Therefore, should DSM restrict supply to Firmenich's competitors, it will lose revenue that would not be compensated otherwise through Firmenich's downstream sales.
- (99) **Third**, the majority of market participants expressing their opinion consider that the merged entity will not have the ability nor the incentive to deteriorate supply conditions of vitamin B1, as alternative suppliers will remain on the market.⁹⁶ Furthermore, the majority of the market participants who expressed their opinion state that vitamin B1 sourcing amounts to less than 5% of the total costs incurred when producing Systems for food applications. This indicates that vitamin B1 is not a significant input for the downstream product, considering it does not represent a significant cost factor for the downstream production of Systems for food applications.⁹⁷
- (100) In addition, market participants expressing their opinion in the market investigation consider that the Transaction will not have an impact on their company nor across the EEA with respect to the procurement of vitamin B1.⁹⁸
- (101) In view of the above, the Commission concludes that the merged entity would not have the ability nor the incentive to engage in an input foreclosure strategy regarding the upstream market for the manufacture and supply of vitamin B1 at EEA-level and the downstream market for the supply of Systems for food applications at EEA-level.

5.3.2.4. Customer foreclosure

5.3.2.4.1. Commission's assessment

- (102) The Commission considers that the merged entity would not have the ability to restrict access to a significant customer base due to the limited size of Firmenich's purchases. Even if Firmenich were to purchase all of its demand for vitamin B1 from DSM, rival suppliers would not be foreclosed from supplying these ingredients to other downstream manufacturers of Systems for food applications, nor to downstream food manufacturers or manufacturers in other industries. A customer foreclosure strategy is therefore not likely.

⁹³ Questionnaire Q1 to customers, questions K6 and K7.

⁹⁴ From CO, paragraphs 436 and 438.

⁹⁵ Questionnaire Q1 to customers, question I5(2); and Questionnaire Q2 to competitors, question I10(2).

⁹⁶ Questionnaire Q1 to customers, question I19; and Questionnaire Q2 to competitors, question I.20.

⁹⁷ Questionnaire Q2 to competitors, question I17.

⁹⁸ Questionnaire Q2 to competitors, question J1; and Questionnaire Q1 to customers, question J1.

5.3.2.5. Conclusion

(103) In light of the considerations in paragraphs (95) to (102) above, as well as the evidence available to it, the Commission concludes that the Transaction does not give rise to serious doubts as to its compatibility with the internal market due to the vertical non-coordinated effects arising from the Transaction in connection with the upstream market for the supply of vitamin B1 at, EEA-level or worldwide, and the downstream market for the manufacturing and supply of Systems for food applications, at EEA-level or worldwide.

5.3.3. Manufacturing and supply of vitamin B3 (upstream) / Manufacturing and supply of Systems for food applications (downstream)

(104) As mentioned above, DSM manufactures and supplies vitamin B3. Vertical links arise due to Firmenich's purchase of vitamin B3 from DSM for its downstream production of Systems for food applications.

(105) As explained below, DSM's value-based market share on the upstream market for the manufacture and supply of vitamin B3 exceeds 30% at the worldwide level.⁹⁹ Thus, this vertical relationship gives rise to affected markets in the upstream manufacturing and supply of vitamin B3 and the downstream market for the manufacturing and supply of Systems for food applications.

5.3.3.1. Market shares

(106) Table 5 below compiles DSM and its main competitors' value-based market shares in the manufacture and supply of vitamin B3, worldwide (2021).

Table 5 – DSM and its main competitors' market shares in the manufacturing and supply of vitamin B3, value-based, (2021)¹⁰⁰

Product	Worldwide (value, 2021)			
	DSM	Lonza/Arxada	Western Drugs India	Jubilant
Vitamin B3	[30-40]%	[10-20]%	[10-20]%	[10-20]%

Source: Form CO, Tables 86 and 88.

(107) Table 6 below compiles Firmenich and its main competitors' market shares in the manufacture and supply of Systems for food applications

Table 6 – Firmenich's and its main competitors' market shares in Systems for food applications, EEA-wide and worldwide, 2021

Suppliers	Systems for food applications			
	EEA (2021)		Worldwide (2021)	
	value	volume	value	volume
Firmenich	[10-20]%	[20-30]%	[10-20]%	[10-20]%
Givaudan	[30-40]%	[30-40]%	[30-40]%	[30-40]%
IFF	[30-40]%	[30-40]%	[30-40]%	[30-40]%
Symrise	[10-20]%	[10-20]%	[10-20]%	[10-20]%

Source: Notifying Parties' reply to RFI 1, dated 2 February 2023, Tables 1 and 2.

⁹⁹ In the EEA, DSM's value-based market shares on the market for vitamin B3 are [20-30]%, in 2021.

¹⁰⁰ Table 5 contains market share data of DSM's competitors holding a market share of minimum 5%.

5.3.3.2. The Notifying Parties' arguments

- (108) The Notifying Parties submit that the Transaction will not raise vertical concerns in relation to the manufacturing and supply of vitamin B3 (upstream) and the manufacturing and supply of Systems for food applications (downstream).
- i. **First**, Firmenich's demand of vitamin B3 to produce Systems for food applications is less than [0-5]% of the market for vitamin B3 both in the EEA and worldwide. Furthermore, Firmenich's purchases from DSM are minimal (i.e. [...], in 2021). Thus, engaging in a refusal to deal will not be profitable;¹⁰¹
 - ii. **Second**, customers will have sufficient sourcing alternatives available, as strong competitors such as Jubilant, Lonza/Arxada and Western Drugs India will still remain on the market;¹⁰²
 - iii. **Third**, considering Firmenich's minimal purchase of vitamin B3, it is an insignificant customer of vitamin B3. Even if Firmenich sourced its entire need of vitamin B3 from DSM, other suppliers of vitamin B3 would still be able to supply rival downstream manufacturers of Systems for food applications, food manufacturers and manufacturers in other industries.¹⁰³

5.3.3.3. Input foreclosure

5.3.3.3.1. Commission's assessment

- (109) The outcome of the market investigation indicates that the merged entity would have no ability or incentive to engage in an input foreclosure strategy.
- (110) **First**, it is unlikely that the merged entity would be able to engage in an input foreclosure strategy, as the results of the market investigation indicate that there is a sufficient number of suppliers active in the manufacture and supply of vitamin B3 to which customers can turn in case the merged entity decides to limit the availability of vitamin B3, such as Arxada and Jubilant.¹⁰⁴
- (111) Further, the majority of customers expressing their opinion submit that DSM's product portfolio (including vitamin B3) is not unique and alternative suppliers will remain on the market post-Transaction capable of supplying the same products.¹⁰⁵
- (112) **Second**, it is unlikely that the merged entity would have the incentive to engage in an input foreclosure strategy as (i) Firmenich has a low share of demand for vitamin B3 (less than [0-5]%, EEA-wide or worldwide,¹⁰⁶ and (ii) various alternative suppliers of vitamin B3 will remain available for downstream producers of Systems for food applications, as well as for other customers, such as food manufacturers or manufacturers in other industries.¹⁰⁷ Therefore, should DSM

¹⁰¹ Form CO, paragraphs 445 and 449.

¹⁰² Form CO, paragraph 450.

¹⁰³ Form CO, paragraph 451.

¹⁰⁴ Questionnaire Q1 to customers, question I5(3); and Questionnaire Q2 to competitors, question I10(3).

¹⁰⁵ Questionnaire Q1 to customers, questions K6 and K7.

¹⁰⁶ Form CO, paragraphs 445 and 449.

¹⁰⁷ Questionnaire Q1 to customers, question I5(3); and Questionnaire Q2 to competitors, question I10(3).

restrict supply to Firmenich's competitors, it would lose revenue that would not be compensated otherwise through Firmenich's downstream sales.

- (113) **Third**, the majority of market participants expressing their opinion consider that the merged entity will not have the ability nor the incentive to deteriorate supply conditions of vitamin B3.¹⁰⁸ Furthermore, the majority of respondents who expressed their opinion state that the cost incurred with sourcing vitamin B3 is less than 5% of the total cost to produce Systems for food applications. This indicates that vitamin B is not a significant input for the downstream product, considering it does not represent a significant cost factor for the downstream production of Systems for food applications.¹⁰⁹
- (114) In addition, market participants expressing their opinion in the market investigation consider that the Transaction will not have an impact on their company nor across the EEA with respect to the procurement of vitamin B3.¹¹⁰
- (115) In view of the above, the Commission concludes that the merged entity would not have the ability nor the incentive to engage in an input foreclosure strategy regarding the upstream market for the manufacture and supply of vitamin B3 at EEA-level and the downstream market for the supply of Systems for food applications at EEA-level.

5.3.3.4. Customer foreclosure

5.3.3.4.1. Commission's assessment

- (116) The Commission considers that the merged entity would not have the ability to restrict access to a significant customer base due to the limited size of Firmenich's purchases. Even if Firmenich were to purchase all of its demand for vitamin B3 from DSM, rival suppliers would not be foreclosed from supplying these ingredients to other downstream manufacturers of Systems, nor to downstream food manufacturers or manufacturers in other industries. A customer foreclosure strategy is therefore not likely.

5.3.3.5. Conclusion

- (117) In light of the considerations in paragraphs (109) to (116) above, as well as the evidence available to it, the Commission concludes that the Transaction does not give rise to serious doubts as to its compatibility with the internal market due to the vertical non-coordinated effects arising from the Transaction in connection with the upstream markets for the supply of vitamin B3 at EEA-level or worldwide and the manufacturing and supply of Systems for food applications at EEA-level or worldwide.

5.3.4. *Manufacturing and supply of vitamin B5 (upstream) / Manufacturing and supply of Systems for food applications (downstream)*

- (118) As mentioned above, DSM manufactures and supplies vitamin B5. As seen from Table 7 below, DSM' market shares exceed the 30% threshold in vitamin B5, both at the EEA and worldwide level. Vertically affected markets arise due to

¹⁰⁸ Questionnaire Q1 to customers, question I19; and Questionnaire Q2 to competitors, question I20.

¹⁰⁹ Questionnaire Q2 to competitors, question I17.

¹¹⁰ Questionnaire Q2 to competitors, question J1; and Questionnaire Q1 to customers, question J1.

Firmenich’s purchase of vitamin B5 from DSM for its downstream production of Systems for food applications.

5.3.4.1. Market shares

(119) Table 7 below compiles DSM and its main competitors’ value and volume based market shares in the manufacture and supply of vitamin B5, EEA and worldwide (2021).

Table 7 – DSM and its main competitors’ market shares in the manufacturing and supply of vitamin B5, value and volume based, (2021)¹¹¹

Vitamin B5				
Suppliers	EEA		Worldwide	
	value	volume	value	volume
DSM	[60-70]%	[50-60]%	[40-50]%	[30-40]%
Yifan Xinfu	[10-20]%	[20-30]%	[10-20]%	[20-30]%
BASF	[5-10]%	[5-10]%	[10-20]%	[10-20]%
Shandong Xinfa	[5-10]%	[5-10]%	[10-20]%	[10-20]%

Source: Form CO, Tables 90, 91, 92 and 93.

(120) Table 8 below compiles Firmenich and its main competitors’ market shares in the manufacture and supply of Systems for food applications, EEA-wide and worldwide by value in 2021.

Table 8 – Firmenich’s and its main competitors’ market shares in the manufacturing and supply of Systems for food applications, EEA-wide and worldwide, 2021:

Systems for food applications				
Suppliers	EEA		Worldwide	
	value	volume	value	volume
Firmenich	[10-20]%	[20-30]%	[10-20]%	[10-20]%
Givaudan	[30-40]%	[30-40]%	[30-40]%	[30-40]%
IFF	[30-40]%	[30-40]%	[30-40]%	[30-40]%
Symrise	[10-20]%	[10-20]%	[10-20]%	[10-20]%

Source: Notifying Parties’ reply to RFI 1, dated 2 February 2023, Tables 1 and 2.

5.3.4.2. The Notifying Parties’ arguments

(121) The Notifying Parties submit that the Transaction will not raise vertical concerns in relation to the manufacturing and supply of vitamin B5 (upstream) and the manufacturing and supply of Systems for food applications (downstream) for the following reasons:

- i. **First**, DSM’s main customers of vitamin B5 are not Firmenich’s rivals in the downstream market for Systems for food applications. DSM’s main customers are food manufacturers and manufacturers in other industries. Thus, vitamin B5 is not a key input for the downstream production of Systems for food applications;¹¹²

¹¹¹ Table 7 contains market share data of DSM’s competitors holding a market share of minimum 5%.

¹¹² Form CO, paragraph 462.

- ii. **Second**, Firmenich's demand of vitamin B5 to produce Systems for food applications is less than [0-5]% of the market for vitamin B5 both in the EEA and worldwide;¹¹³
- iii. **Third**, customers will have sufficient sourcing alternatives available, as strong competitors such as BASF, Shandong Xinfra and Yifan Xinfra Pharmaceutical Co. Ltd. Will remain on the market.¹¹⁴

5.3.4.3. Input foreclosure

5.3.4.3.1. Commission's assessment

- (122) The outcome of the market investigation is inconclusive as regards the merged entity's ability to engage in an input foreclosure strategy.
- (123) **First**, the results of the market investigation indicate that there is a sufficient number of suppliers active in the manufacture and supply of vitamin B5 to which customers can turn in case the merged entity decides to limit the availability of vitamin B5, such as BASF, Yifan Xinfra Pharmaceutical and Shandong Xinfra.¹¹⁵ At the same time, the merged entity's upstream market shares are significant, which is indicative of a certain degree of market power.
- (124) **Second**, the market investigation is not conclusive as regards the level of barriers to entry. While the majority of customers consider barriers to be significant, competitors are of the opinion that barriers to entry are moderate.¹¹⁶ Both the majority of customers and competitors who expressed their opinion ground their claim on high investment costs.¹¹⁷ However, as mentioned above under paragraph (123), various alternative suppliers will remain on the market post-Transaction.
- (125) **Second**, the majority of customers expressing their opinion submit that DSM's product portfolio (including vitamin B5) is not unique and alternative suppliers capable of supplying the same products will remain on the market post-Transaction.¹¹⁸
- (126) Even if the merged entity had the ability to engage in an input foreclosure strategy, the outcome of the market investigation indicates that it would have no incentive to do so.
- (127) Firmenich has a low share of demand for vitamin B5 (less than [0-5]%, EEA wide or worldwide),¹¹⁹ and various alternative suppliers of natural and synthetic beta-carotene remain available for downstream rival producers of Systems for food applications, as well as for other customers, such as food producers.¹²⁰ Therefore,

¹¹³ Form CO, paragraphs 463 and 465.

¹¹⁴ Form CO, paragraph 464.

¹¹⁵ Questionnaire Q1 to customers, question I5(4); and Questionnaire Q2 to competitors, questions I10(4).

¹¹⁶ Questionnaire Q1 to customers, questions I14 and I15; and Questionnaire Q2 to competitors, questions I11 and I12.

¹¹⁷ Questionnaire Q1 to customers, question I15; and Questionnaire Q2 to competitors, question I12.

¹¹⁸ Questionnaire Q1 to customers, questions K6 and K7.

¹¹⁹ Form CO, paragraphs 463 and 465.

¹²⁰ Questionnaire Q1 to customers, question I5(4); and Questionnaire Q2 to competitors, questions I10(4).

should DSM restrict supply to Firmenich's competitors, it would lose revenue that would not be compensated otherwise through Firmenich's downstream sales.

- (128) **Third**, majority of market participants expressing their opinion consider that the merged entity will not have the ability nor the incentive to deteriorate supply conditions of vitamin B5, as alternative suppliers would remain on the market from which they can source vitamin B5.¹²¹ Furthermore, the majority of respondents who expressed their opinion state that the cost incurred with sourcing vitamin B5 is less than 5% of the total cost to produce Systems for food applications. This indicates that vitamin B 5 is not a significant input for the downstream product, considering it does not represent a significant cost factor for the downstream production of Systems for food applications.¹²²
- (129) In addition, market participants expressing their opinion in the market investigation consider that the Transaction will not have an impact on their company nor across the EEA with respect to the procurement of vitamin B5.¹²³
- (130) In light of the above, the Commission considers that, while the merged entity may have the ability to engage in an input foreclosure strategy (due to DSM's significant market share in the upstream market for the manufacture and supply of vitamin B5) there is no likely risk of this materialising due to lack of incentives for the merged entity. This is due to Firmenich's low share of demand for vitamin B5, and the existence of several alternative suppliers of vitamin B5 for Firmenich's competitors downstream.

5.3.4.4. Customer foreclosure

5.3.4.4.1. Commission's assessment

- (131) The Commission considers that the merged entity would not have the ability to restrict access to a significant customer base due to the limited size of Firmenich's purchases. Even if Firmenich were to purchase all of its demand for vitamin B5 from DSM, rival suppliers would not be foreclosed from supplying these ingredients to other downstream manufacturers of Systems for food applications, nor to downstream food manufacturers or manufacturers in other industries. A customer foreclosure strategy is therefore not likely.

5.3.4.5. Conclusion

- (132) In light of the considerations in paragraphs (122) to (131) above, as well as the evidence available to it, the Commission concludes that the Transaction does not give rise to serious doubts as to its compatibility with the internal market due to the vertical non-coordinated effects arising from the Transaction in connection with the upstream markets for the supply of vitamin B5 at EEA-level or worldwide and the manufacturing and supply of Systems for food applications at EEA-level or worldwide.

¹²¹ Questionnaire Q1 to customers, question I19; and Questionnaire Q2 to competitors, question I.20.

¹²² Questionnaire Q2 to competitors, question I17.

¹²³ Questionnaire Q2 to competitors, question J1; and Questionnaire Q1 to customers, question J1.

5.3.5. *Manufacturing and supply of vitamin B6 (upstream) / Manufacturing and supply of Systems for food applications (downstream)*

(133) DSM manufactures and supplies vitamin B6. As seen from Table 9 below, DSM's market shares exceed the 30% threshold both at EEA-and worldwide level. Vertical affected markets arise due to Firmenich's purchase of vitamin B6 from third parties for its downstream production of Systems for food applications.

5.3.5.1. Market shares

(134) Table 9 below compiles DSM and its main competitors' value and volume-based market shares in the manufacture and supply of vitamin B6, EEA and worldwide (2021).

Table 9 - DSM and its main competitors' market shares in the manufacturing and supply of vitamin B6, value and volume based, (2021)¹²⁴

Vitamin B6				
Suppliers	EEA (2021)		Worldwide (2021)	
	value	volume	value	volume
DSM	[50-60]%	[40-50]%	[40-50]%	[30-40]%
Jiangxi Tianxin	[30-40]%	[40-50]%	[30-40]%	[40-50]%
Shandong Xinfu	N/A	N/A	[0-5]%	[5-10]%

Source: Form CO, Tables 94, 95 and 96.

(135) Table 10 below compiles Firmenich and its main competitors' market shares in the manufacture and supply of Systems for food applications, EEA-wide and worldwide by value in 2021.

Table 10 – Firmenich's and its main competitors' market shares in the manufacturing and supply of Systems for food applications, EEA-wide and worldwide, 2021:

Systems for food applications				
Suppliers	EEA (2021)		Worldwide (2021)	
	value	volume	value	volume
Firmenich	[10-20]%	[20-30]%	[10-20]%	[10-20]%
Givaudan	[30-40]%	[30-40]%	[30-40]%	[30-40]%
IFF	[30-40]%	[30-40]%	[30-40]%	[30-40]%
Symrise	[10-20]%	[10-20]%	[10-20]%	[10-20]%

Source: Notifying Parties' reply to RFI 1, dated 2 February 2023, Tables 1 and 2.

5.3.5.2. The Notifying Parties' arguments

(136) The Notifying Parties submit that the Transaction will not raise vertical concerns in relation to the manufacturing and supply of vitamin B6 (upstream) and the manufacturing and supply of Systems for food applications (downstream) for the following reasons:

- i. **First**, DSM's main customers of vitamin B6 are not Firmenich's rivals in the downstream market for Systems for food applications. DSM's main customers are food manufacturers and manufacturers in other industries.

¹²⁴ Table 9 contains market share data of DSM's competitors holding a market share of minimum 5%.

Thus, vitamin B6 is not a key input for the downstream production of Systems for food applications;¹²⁵

- ii. **Second**, Firmenich's demand of vitamin B6 to produce Systems for food applications is less than [0-5]% of the market for vitamin B6 both in the EEA and worldwide;¹²⁶
- iii. **Third**, customers will have sufficient sourcing alternatives available, as strong competitors such as Shandong Xinfra and Jianxi Tianxin.¹²⁷

5.3.5.3. Input foreclosure

5.3.5.3.1. Commission's assessment

- (137) The outcome of the market investigation is inconclusive as regards the merged entity's ability to engage in an input foreclosure strategy.
- (138) **First**, the results of the market investigation indicate that there is a sufficient number of suppliers active in the manufacture and supply of vitamin B6 to which customers can turn in case the merged entity decides to limit the availability of vitamin B6, such as Yifan Xinfra Pharmaceutical, Jianxi Tianxin, Zhejiang NHU, and Shandong Xinfra.^{128 129} On the other hand, the merged entity's upstream market share is significant, which is indicative of a certain degree of market power.
- (139) **Second**, the majority of customers expressing their opinion submit that DSM's product portfolio (including vitamin B6) is not unique and alternative suppliers capable of supplying the same products will remain on the market post-Transaction.¹³⁰
- (140) Even if the merged entity were to have the ability to engage in an input foreclosure strategy, the outcome of the market investigation indicates that it would have no incentive to do so.
- (141) Firmenich has a low share of demand for vitamin B6 (less than [0-5]%, EEA wide or worldwide),¹³¹ And several alternative suppliers remain available, post-Transaction.¹³² Therefore, should DSM restrict supply to Firmenich's competitors, it would lose revenue that would not be compensated otherwise through Firmenich's downstream sales. Moreover, even if DSM engaged in an input foreclosure strategy, Firmenich's competitors downstream could turn to other manufacturers for their vitamin B6 needs.
- (142) **Third**, the majority of market participants expressing their opinion consider that the merged entity will not have the ability nor the incentive to deteriorate supply

¹²⁵ Form CO, paragraph 475.

¹²⁶ Form CO, paragraph 476.

¹²⁷ Form CO, paragraph 477.

¹²⁸ Questionnaire Q1 to customers, questions I5(5) and I20; and Questionnaire Q2 to competitors, questions I10(5) and I20.

¹²⁹ Questionnaire Q1 to customers, question I5(4); and Questionnaire Q2 to competitors, questions I10(4).

¹³⁰ Questionnaire Q1 to customers, questions K6 and K7.

¹³¹ Form CO, paragraph 476.

¹³² Questionnaire Q1 to customers, questions I5(5) and I20; and Questionnaire Q2 to competitors, questions I10(5) and I20.

conditions of vitamin B6,¹³³ As sufficient alternative suppliers will remain available on the market.¹³⁴ Furthermore, the majority of the market participants who expressed their opinion state that sourcing vitamin B6 represents less than 5% of the total costs incurred when producing Systems for food applications. This indicates that vitamin B6 is not a significant input for the downstream product, considering it does not represent a significant cost factor for the downstream production of Systems for food applications.¹³⁵

- (143) In addition, market participants expressing their opinion in the market investigation consider that the Transaction will not have an impact on their company nor across the EEA with respect to the procurement of vitamin B6.¹³⁶
- (144) In light of the above, the Commission considers that, while the merged entity may have the ability to engage in an input foreclosure strategy (due to DSM's significant market share in the upstream market for the manufacture and supply of vitamin B6) there is no likely risk of this materialising due to lack of incentives for the merged entity. This is due to Firmenich's low share of demand for vitamin B6, and the existence of several alternative suppliers of vitamin B6 for Firmenich's competitors downstream.

5.3.5.4. Customer foreclosure

5.3.5.4.1. Commission's assessment

- (145) The Commission considers that the merged entity would not have the ability to restrict access to a significant customer base due to the limited size of Firmenich's purchases. Even if Firmenich were to purchase all of its demand for vitamin B6 from DSM, rival suppliers would not be foreclosed from supplying these ingredients to other downstream manufacturers of Systems for food applications, nor to downstream food manufacturers or manufacturers in other industries. A customer foreclosure strategy is therefore not likely.

5.3.5.5. Conclusion

- (146) In light of the considerations in paragraphs (137) to (145) above, as well as the evidence available to it, the Commission concludes that the Transaction does not give rise to serious doubts as to its compatibility with the internal market due to the vertical non-coordinated effects arising from the Transaction in connection with the upstream markets for the supply of vitamin B6 at EEA-level or worldwide and the manufacturing and supply of Systems for food applications at EEA-level or worldwide.

5.3.6. *Manufacturing and supply of synthetic vitamin E (upstream) / Manufacturing and supply of Systems for food applications (downstream)*

- (147) DSM manufactures and supplies synthetic and natural Vitamin E. DSM is mainly active in synthetic vitamin E, where its market shares exceed 30% both at the EEA- and worldwide level. Vertical affected markets arise due to Firmenich's purchase

¹³³ Questionnaire Q1 to customers, question I19; and Questionnaire Q2 to competitors, question I.20.

¹³⁴ Questionnaire Q1 to customers, question I20; and Questionnaire Q2 to competitors, question I.22.

¹³⁵ Questionnaire Q2 to competitors, question I17.

¹³⁶ Questionnaire Q2 to competitors, question J1; and Questionnaire Q1 to customers, question J1.

of synthetic vitamin E from DSM for its downstream production of Systems for food applications.

5.3.6.1. Market shares

(148) Table 11 below compiles DSM and its main competitors' value and volume-based market shares in the manufacture and supply of synthetic Vitamin E, EEA and worldwide (2021).

Table 11 – DSM and its main competitors' market shares in the manufacturing and supply of synthetic vitamin E, value and volume based, (2021):¹³⁷

Synthetic vitamin E				
Suppliers	EEA (2021)		Worldwide (2021)	
	value	volume	value	volume
DSM	[30-40]%	[30-40]%	[40-50]%	[30-40]%
BASF	[20-30]%	[10-20]%	[20-30]%	[10-20]%
Xinchang Pharma (ZMC)	[10-20]%	[20-30]%	[10-20]%	[10-20]%
Zhejiang NHU	[20-30]%	[20-30]%	[10-20]%	[10-20]%

Source: Form CO, Tables 102, 103, 106, and 107.

(149) Table 12 below compiles Firmenich's and its main competitors' market shares in the manufacture and supply of Systems for food applications, EEA-wide and worldwide by value in 2021.

Table 12 – Firmenich's and its main competitors' market shares in the manufacturing and supply of Systems for food applications, EEA-wide and worldwide, 2021:

Systems for food applications				
Suppliers	EEA (2021)		Worldwide (2021)	
	value	volume	value	volume
Firmenich	[10-20]%	[20-30]%	[10-20]%	[10-20]%
Givaudan	[30-40]%	[30-40]%	[30-40]%	[30-40]%
IFF	[30-40]%	[30-40]%	[30-40]%	[30-40]%
Symrise	[10-20]%	[10-20]%	[10-20]%	[10-20]%

Source: Notifying Parties' reply to RFI 1, dated 2 February 2023, Tables 1 and 2.

5.3.6.2. The Notifying Parties' arguments

(150) The Notifying Parties submit that the Transaction will not raise vertical concerns in relation to the manufacturing and supply of synthetic vitamin E (upstream) and the manufacturing and supply of Systems for food applications (downstream) for the following reasons:

- i. **First**, Firmenich's demand of synthetic vitamin E to produce Systems for food applications is less than [0-5]% of the overall EEA market for synthetic vitamin E and less than [0-5]% of the worldwide market for synthetic vitamin E;¹³⁸

¹³⁷ Table 11 contains market share data of DSM's competitors holding a market share of minimum 5%.
¹³⁸ Form CO, paragraphs 497 and 501.

- ii. **Second**, customers have sufficient sourcing alternatives available, as strong competitors such BASF, ZMC and NHU will remain on the market;¹³⁹
- iii. **Third**, barriers to entry are not significant. This is shown by the sufficient number of alternative suppliers and the well-established technology and well-known sales channel on which the manufacture and supply of synthetic vitamin E is based.¹⁴⁰

5.3.6.3. Input foreclosure

5.3.6.3.1. Commission's assessment

- (151) The outcome of the market investigation indicates that the merged entity would have no ability or incentive to engage in an input foreclosure strategy.
- (152) **First**, it is unlikely that the merged entity will be able to engage in an input foreclosure strategy, as the results of the market investigation indicate that there is a sufficient number of suppliers active in the manufacture and supply of synthetic vitamin E to which customers can turn in case the merged entity decides to limit the availability of synthetic vitamin E such as BASF, Xinchang Pharma (ZMC) and Zhejiang NHU.¹⁴¹
- (153) Further, the majority of customers expressing their opinion submit that DSM' product portfolio (including synthetic vitamin E) is not unique and alternative suppliers will remain on the market post-Transaction capable of supplying the same products.¹⁴² **Second**, it is unlikely that the merged entity would have the incentive to engage in an input foreclosure strategy, as (i) Firmenich has a low share of demand for synthetic vitamin E (less than [0-5]%, EEA-wide or less than [0-5]% worldwide),¹⁴³ and various alternative suppliers will remain available.¹⁴⁴ Therefore, should DSM restrict supply to Firmenich's competitors, it will lose revenue that would not be compensated otherwise through Firmenich's downstream sales.
- (154) **Third**, the majority of market participants expressing their opinion consider that the merged entity will not have the ability nor the incentive to deteriorate supply conditions of synthetic vitamin E, as sufficient alternative suppliers will still remain on the market.¹⁴⁵ Furthermore, the majority of the market participants who expressed their opinion state that sourcing synthetic vitamin E represents less than 5% of the total costs incurred when producing Systems for food applications. This indicates that synthetic vitamin E is not a significant input for the downstream product, considering it does not represent a significant cost factor for the downstream production of Systems for food applications.¹⁴⁶

¹³⁹ Form CO, paragraph 502.

¹⁴⁰ Form CO, paragraph 502.

¹⁴¹ Questionnaire Q1 to customers, questions I5(8) and I20; and Questionnaire Q2 to competitors, questions I10(7) and I22.

¹⁴² Questionnaire Q1 to customers, questions K6 and K7.

¹⁴³ Form CO, paragraphs 497 and 501.

¹⁴⁴ Questionnaire Q1 to customers, questions I5(8) and I20; and Questionnaire Q2 to competitors, questions I10(7) and I22.

¹⁴⁵ Questionnaire Q1 to customers, questions I19 and I20; and Questionnaire Q2 to competitors, questions I.20 and I20.

¹⁴⁶ Questionnaire Q2 to competitors, question I17(1).

- (155) In addition, market participants expressing their opinion in the market investigation consider that the Transaction will not have an impact on their company nor across the EEA with respect to the procurement of synthetic vitamin E.¹⁴⁷
- (156) In view of the above, the Commission concludes that the merged entity would not have the ability nor the incentive to engage in an input foreclosure strategy regarding the upstream market for the manufacture and supply of synthetic vitamin E at EEA-level and the downstream market for the supply of Systems for food applications at EEA-level.

5.3.6.4. Customer foreclosure

5.3.6.4.1. Commission's assessment

- (157) The Commission considers that the merged entity would not have the ability to restrict access to a significant customer base due to the limited size of Firmenich's purchases. Even if Firmenich were to purchase all of its demand for synthetic vitamin E from DSM, rival suppliers would not be foreclosed from supplying these ingredients to other downstream manufacturers of Systems for food applications, nor to downstream food manufacturers or manufacturers in other industries. A customer foreclosure strategy is therefore not likely.

5.3.6.5. Conclusion

- (158) In light of the considerations in paragraphs (151) to (157) above, as well as the evidence available to it, the Commission concludes that the Transaction does not give rise to serious doubts as to its compatibility with the internal market due to the vertical non-coordinated effects arising from the Transaction in connection with the upstream markets for the supply of synthetic vitamin E at EEA-level or worldwide and the manufacturing and supply of Systems for food applications, at EEA-level or worldwide.

5.4. Conglomerate effects

- (159) The Transaction entails the integration of closely related products, involving, in particular, the supply by DSM of carotenoids (including beta-carotene), vitamins and cultures and the supply by Firmenich, and to a lesser extent by DSM, of flavours, which can be combined together with cultures, beta-carotene or vitamins in food preparations.

5.4.1. *Beta-carotene and flavours*

- (160) In the present case, the possibility of conglomerate effects arises from DSM's activity in beta-carotene and Firmenich's activity in flavours.¹⁴⁸ Beta-carotene can be used in combination with flavours by producers of Systems for food applications and by food manufacturers.

¹⁴⁷ Questionnaire Q2 to competitors, question J1; and Questionnaire Q1 to customers, question J1.

¹⁴⁸ The Notifying Parties note that, while beta-carotene can also be technically sold together with another products (aroma chemicals), in practice this is highly unlikely, given that aroma chemicals are not directly used by food and beverage producers, and aroma chemicals will only be included indirectly in end-products, e.g. through flavours.

5.4.1.1. Market shares

(161) As mentioned above under Section 5.3.1, DSM has a significant market position on the markets for natural and synthetic beta-carotene. However, as mentioned above under Section 5.2.1, the Notifying Parties' combined market shares on any plausible market definition of the flavours market do not exceed the 30% threshold.

5.4.1.2. Notifying Parties' Arguments

(162) The Notifying Parties submit that the merged entity will not have the ability nor the incentive to engage in anticompetitive foreclosure of rivals for the following reasons:

- i. **First**, the merged entity will face significant competitive pressure from well-established competitors in synthetic and natural beta-carotene, such as BASF, ZMC, NHU, Divis and Allied;¹⁴⁹
- ii. **Second**, customers tend to multi-source and prefer to procure single ingredients and combine different ingredients themselves;¹⁵⁰
- iii. **Last**, Firmenich and DSM do not have a large common pool of customers that tend to purchase both products.¹⁵¹

5.4.1.3. Commission's assessment

(163) The results of the market investigation seem to support the Notifying Parties' claim that the merged entity would not have the ability nor the incentive to engage in a foreclosure strategy.

(164) **First**, it is unlikely that the merged entity will have the ability to engage in a foreclosure strategy, as its products are not viewed by many customers as particularly important and there are a several relevant alternative suppliers remaining on the market.

- (a) In the first place, the majority of customers expressing their opinion consider that there are several alternative sources of supply of a combination of beta-carotene (either synthetic or natural) and flavours.¹⁵²
- (b) In the second place, the outcome of the market investigation suggests that customers multi-source, and can turn to other players (even if with less complete portfolios) if the offer is better.¹⁵³
- (c) In the third place, the Notifying Parties' have very few common customers. Therefore, even if the merged entity would have the ability and the incentive to engage in a foreclosure strategy, its effects would be limited, as its customers could turn to the alternative suppliers.

¹⁴⁹ Form CO, paragraph 610.

¹⁵⁰ Form CO, paragraph 611.

¹⁵¹ Form CO, paragraph 616.

¹⁵² Questionnaire Q1 to customers, questions F17, F18, K5, K6, K7, and K8; and Questionnaire to competitors, questions K5, K6, K7, and K8.

¹⁵³ Questionnaire Q1 to customers, questions K5, K6, K7, and K8; and Questionnaire to competitors, questions K5, K6, K7, and K8.

- (165) **Second**, is unlikely that the merged entity would have the incentive to engage in a foreclosure strategy, as customers usually have the option to purchase individual ingredients.¹⁵⁴ Thus, engaging in a tying or bundling strategy may be detrimental to the merged entity, as its customers may start sourcing all needed ingredients from other suppliers.¹⁵⁵
- (166) **Third**, the majority of respondents that expressed their opinion consider that the merged entity will not have the ability nor the incentive to leverage a unique strong position on the market to force customers to purchase other ingredients from its wide portfolio.¹⁵⁶
- (167) On the basis of the information available, the Commission concludes that, notwithstanding DSM's significant market position in the market for synthetic and natural beta-carotene, the possibility of conglomerate effects arising from the Transaction does not result in serious doubts as to its compatibility with the internal market.

5.4.2. Dairy cultures and flavours

- (168) In the present case, the possibility of conglomerate effects arises from DSM's activity in dairy cultures and Firmenich's activity in flavours.¹⁵⁷ Dairy cultures can be used in combination with flavours by food manufacturers.

5.4.2.1. Market shares

- (169) DSM's market shares on the market for dairy cultures remain moderate, reaching [30-40]% at the EEA level.¹⁵⁸ As mentioned above under Section 5.2.1, the Notifying Parties' combined market shares under any plausible market definition of the flavours market do not exceed the 30% threshold.

5.4.2.2. The Notifying Parties' arguments

- (170) The Notifying Parties submit that the merged entity will not have the ability nor the incentive to engage in anticompetitive foreclosure of rivals for the following reasons:
- i. **First**, the majority of DSM's dairy cultures are used in cheese ([...])% and selling these cultures in combination with Firmenich's flavours does not make sense from a commercial standpoint. This is because, according to the Notifying Parties, producers of cheese are not allowed to add flavours to the products marketed as 'cheese';¹⁵⁹

¹⁵⁴ Questionnaire Q1 to customers, questions K5, K6, K7, and K8; and Questionnaire to competitors, questions K5, K6, K7, and K8.

¹⁵⁵ Questionnaire Q1 to customers, questions K5, K6, K7, and K8; and Questionnaire to competitors, questions K5, K6, K7, and K8.

¹⁵⁶ Questionnaire Q1 to customers, questions K5, K6, K7, and K8; and Questionnaire to competitors, questions K5, K6, K7, and K8.

¹⁵⁷ The Notifying Parties note that, while cultures can also be technically sold together with another products (aroma chemicals), in practice this is highly unlikely, given that aroma chemicals are not directly used by food and beverage producers, and aroma chemicals will only be included indirectly in end-products, e.g. through flavours.

¹⁵⁸ Form CO, paragraph 541. DSM's share on the potential segment for meat cultures and for plant-based food cultures does not exceed 30% and therefore will not be further assessed.

¹⁵⁹ Form CO, paragraph 546.

- ii. **Second**, for the rest of DSM's dairy cultures, which are used in yoghurt ([...]), the Notifying Parties submit that, (i) the merged entity will not have a sufficient degree of market power to allow it to engage in a foreclosure strategy; (ii) there is a sufficient number of alternative suppliers of dairy cultures, such as Chr. Hansen, IFF, Sacco and Bioprox;¹⁶⁰ (iii) customers tend to multi-source from two or three suppliers;¹⁶¹ and (iv) the Notifying Parties do not have a large common pool of customers that tend to buy both products.

5.4.2.3. Commission's assessment

- (171) The results of the market investigation seem to support the Notifying Parties' claim that the merged entity would not have the ability nor the incentive to engage in a foreclosure strategy.
- (172) **First**, the outcome of the market investigation seems to confirm the lack of market power of the merged entity, and thus the lack of ability to engage in a foreclosure strategy. The merged entity's market shares remain moderate, even regarding the narrowest plausible market definition ([30-40]% for dairy cultures at EEA-level, and [5-10]% in flavours for dairy products at EEA level, both in value).
- (173) **Second**, it is unlikely that the merged entity will have the ability to engage in a foreclosure strategy, as the merged entity's products are not viewed by many customers as particularly important with few relevant alternatives.
- (a) In the first place, the majority of customers expressing their opinion consider that there are several alternative sources of supply of a combination of dairy cultures and flavours.¹⁶² In this line, market participants indicate that the new entity will not have a unique product portfolio, as there are other suppliers that can offer the same or similar product portfolio.¹⁶³ Therefore, it seems unlikely that the merged entity will be able to force customers to source from its portfolio.
- (b) In the second place, the outcome of the market investigation suggests that customers multi-source, and can turn to other players (even if with less complete portfolios) if the offer is better.¹⁶⁴
- (c) In the third place, the Notifying Parties' have very few common customers. Therefore, even if the merged entity would have the ability and the incentive to engage in a foreclosure strategy, its effects would be limited. Further, their customers could turn to the alternative suppliers.
- (d) In the fourth place, the outcome of the market investigation indicates that customers, in general, do not use cultures together with other ingredients.¹⁶⁵
- (174) In this line, the majority of respondents which expressed their opinion consider that the merged entity will not have the ability nor the incentive to leverage a unique

¹⁶⁰ Form CO, paragraph 547.

¹⁶¹ Form CO, paragraph 548.

¹⁶² Questionnaire Q1 to customers, questions H17 and H18.

¹⁶³ Questionnaire Q1 to customers, questions K5, K6, K7, and K8; and Questionnaire to competitors, questions K5, K6, K7, and K8.

¹⁶⁴ Questionnaire Q1 to customers, questions K5, K6, K7, and K8; and Questionnaire to competitors, questions K5, K6, K7, and K8.

¹⁶⁵ Questionnaire Q1 to customers, question H11; and Questionnaire Q2 to competitors, question H19.

strong position on the market to force customers to purchase other ingredients from its wide portfolio.

- (175) On the basis of the information available, the Commission considers that the possibility of conglomerate effects arising from the Transaction does not result in serious doubts as to its compatibility with the internal market.

5.4.3. *Vitamins and flavours for pharmaceuticals, beverages and confectionary*^{166 167}

- (176) In the present case, the possibility of conglomerate effects arises from DSM's activity in vitamins A, B1, B3, B5, B6, and synthetic vitamin E, and Firmenich's activity in flavours. The aforementioned vitamins can be used in combination with flavours by producers of Systems for food applications and by food manufacturers.

5.4.3.1. Market shares

- (177) As mentioned above under Sections 5.3.2, 5.3.3, 5.3.4, 5.3.5, and 5.3.6, DSM's market shares (all in value, for 2021) remain moderate on the markets for vitamin B1 ([30-40]% EEA, [30-40]% worldwide), B3 ([20-30]% EEA, [30-40]% worldwide) and synthetic vitamin E ([30-40]% EEA, [40-50]% worldwide), while it holds a stronger position on the markets for vitamins B5 ([60-70]% EEA, [40-50]% worldwide) and B6 ([50-60]% EEA, [40-50]% worldwide).
- (178) In addition, DSM manufactures and supplies vitamin A, which can be combined with flavours by food manufacturers. DSM's market shares on the market for vitamin A remain moderate ([30-40]% at the EEA level).¹⁶⁸
- (179) As mentioned above under Section 5.2.1, the Notifying Parties' combined market shares under any plausible market definition of the flavours market do not exceed the 30% threshold.

5.4.3.2. The Notifying Parties' arguments

- (180) The Notifying Parties submit that the merged entity will not have the ability nor the incentive to engage in anticompetitive foreclosure of rivals for the following reasons:
- i. **First**, a substantial part of DSM's vitamins are mixed into nutritional premixes. Such nutritional premixes are dry commodity products. Firmenich's flavours are predominantly sold in a liquid form. Thus, it is difficult to combine DSM's vitamins with Firmenich's flavours, due to the different forms in which these are sold;¹⁶⁹

¹⁶⁶ Firmenich (but not DSM) is active, within flavours, in flavours for beverages, confectionery and pharmaceuticals.

¹⁶⁷ According to the Notifying Parties, in addition to flavours for dairy products and savoury products, vitamins can be used in combination with flavours for beverages (where Firmenich has a value-based market share of [10-20]% EEA and [5-10]% worldwide, in 2021), flavours for confectionary (where Firmenich has a value-based market share of [10-20]% EEA and [5-10] worldwide, 2021), and flavours for pharmaceuticals (where Firmenich has a value-based market share of [10-20]% EEA and [5-10]% worldwide, in 2021).

¹⁶⁸ From CO, paragraph 564.

¹⁶⁹ Form CO, paragraphs 555 and 556.

- ii. **Second**, vitamin customers are sophisticated multinational companies, such as Nestle, Danone, Coca-Cola, and Cargill, which enjoy a high degree of bargaining power;¹⁷⁰
- iii. **Third**, customers tend to multi-source from three or four suppliers and conclude separate contracts for each ingredient they source.¹⁷¹
- iv. **Last**, the Notifying Parties do not have a large common pool of customers that tend to purchase both flavours and vitamins.¹⁷²

5.4.3.3. Commission's assessment

- (181) The results of the market investigation seem to support the Notifying Parties' claim that the merged entity would not have the ability nor the incentive to engage in a foreclosure strategy.
- (182) **First**, the outcome of the market investigation seems to confirm the lack of market power of the merged entity, and thus the lack of ability to engage in a foreclosure strategy. As mentioned above under paragraph (177), the merged entity's market shares remain moderate on the narrowest market segment for vitamin B1, B3 and synthetic vitamin E, while having a more established position on the market vitamin B5 and B6. The merged entity's market shares remain moderate regarding the narrowest plausible market definition for flavours ([10-20]%, value-based, at EEA level, in flavours for pharmaceuticals).
- (183) Therefore, it appears that the merged entity would not have market power in vitamins B1, B3 and synthetic vitamin E. Despite its position in vitamins B5 and B6, which could be indicative of market power, the merged entity would lack incentive to engage in a foreclosure strategy for the arguments that follow in paragraphs (184)-(187) below.
- (184) **Second**, it is unlikely that the merged entity will have the ability to engage in a foreclosure strategy, as the merged entity's products are not viewed by many customers as particularly important with few relevant alternatives.
- (a) In the first place the majority of customers expressing their opinion consider that there are several alternative sources of supply of a combination of vitamins and flavours.¹⁷³ In this line, market participants indicate that the new entity will not have a unique product portfolio, as there are other suppliers that can offer the same or similar product portfolio.¹⁷⁴ Therefore, it seems unlikely that the merged entity will be able to force customers to source from its portfolio.
 - (b) In the second place, the outcome of the market investigation suggests that customers multi-source, and can turn to other players (even if with less complete portfolios) if the offer is better.¹⁷⁵

¹⁷⁰ Form CO, paragraph 557.

¹⁷¹ Form CO, paragraph 558.

¹⁷² Form CO, paragraphs 581, 585, 586, 590, 594, and 599.

¹⁷³ Questionnaire Q1 to customers, question I27.

¹⁷⁴ Questionnaire Q1 to customers, questions K5, K6, K7, and K8; and Questionnaire to competitors, questions K5, K6, K7, and K8.

¹⁷⁵ Questionnaire Q1 to customers, questions K5, K6, K7, and K8; and Questionnaire to competitors, questions K5, K6, K7, and K8.

- (c) In the third place, the Notifying Parties' have very few common customers. Therefore, even if the merged entity would have the ability and the incentive to engage in a foreclosure strategy, its effects would be limited, as its customers could turn to the alternative suppliers.
- (185) **Third**, customers usually have the option to purchase individual ingredients.¹⁷⁶ Therefore, engaging in a tying or bundling strategy may be detrimental to the merged entity, as it could see its customers turn to other suppliers altogether.
- (186) In this line, the majority of respondents who expressed their opinion consider that the merged entity will not have the ability nor the incentive to leverage a unique strong position on the market to force customers to purchase other ingredients from its wide portfolio.¹⁷⁷
- (187) On the basis of the information available, the Commission considers that the possibility of conglomerate effects arising from the Transaction does not result in serious doubts as to its compatibility with the internal market.

6. CONCLUSION

- (188) For the above reasons, the European Commission has decided not to oppose the notified operation and to declare it compatible with the internal market and with the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of the Merger Regulation and Article 57 of the EEA Agreement.

For the Commission

(Signed)
Margrethe VESTAGER
Executive Vice-President

¹⁷⁶ Questionnaire Q1 to customers, questions K5, K6, K7, and K8; and Questionnaire to competitors, questions K5, K6, K7, and K8.

¹⁷⁷ Questionnaire Q1 to customers, questions K5 and K6; and Questionnaire Q2 to competitors, questions K5 and K6.