

**Nutrition and dietary habits**

# Nutrient Content in Soup

**Semi-prepared and ready-made soups available  
in Danish supermarkets**



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Ernæring og kostvaner

**Næringsstofindhold i suppe**

Færdiglavede supper i danske supermarkeder

June 2026

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## Preface

On behalf of the Danish Veterinary Food, Agriculture and Fisheries Agency, the DTU Food Institute conducted a study on the nutrient content of semi-prepared or ready-made soups available in Danish supermarkets in March 2023.

The analytical data from this project are included in the Danish Food Composition Database ([www.fcdb.fooddata.dk](http://www.fcdb.fooddata.dk)).

The project was planned by Marija Langwagen, Anders Poulsen, and Jette Jakobsen, together with Ophelia Pedersen and Sarah Gibbons, who also carried out the sampling plan, as well as the collection of samples. The sample analyses were performed by Eurofins Steins Laboratorium A/S in Vejen, Denmark.

The report was produced through a collaboration between Marija Langwagen, Anders Poulsen, and Jette Jakobsen.

Kongens Lyngby, May 2026

Marija Langwagen

Project Manager

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## Summary

This report presents updated, market-representative nutrient data for semi-prepared and ready-made soups available in Danish supermarkets. The study was conducted to strengthen the coverage of soups in the Danish Food Composition Database and to support dietary assessment and population intake analyses.

A market analysis and product survey were used to identify the most widely available soup types on the Danish retail market. In total, 36 individual soup products were collected and combined into ten samples representing different soup types. All samples were analysed under accredited laboratory conditions for energy, macronutrients and selected vitamins and minerals.

The results show differences in energy density across analysed soups. Low energy density was observed for soups based primarily on water and stock, such as frozen chicken and beef soups, as well as for tomato soup prepared from dry mixes due to dilution with water prior to consumption. Higher energy density was observed for soups containing dairy products such as milk, cream or cheese, reflecting the contribution of fat. Differences in energy density were therefore related to soup composition rather than to flavour or product category alone.

Protein content was generally low across the analysed supermarket soups, with higher values observed mainly for soups containing meat or poultry. Carbohydrate content was influenced using starches and sugars added for thickening and flavour, particularly in dry soups and some creamy products. Comparison with declared nutrient values showed variation between individual products within several categories, indicating that the composite samples represent market-level averages rather than nutritionally homogeneous foods.

Most vitamins and minerals were present at low concentrations, and for several micronutrients, values were at or below analytical limits of quantification, limiting quantitative interpretation. Sodium was an important exception, with salt levels that may contribute meaningfully to dietary sodium intake when soups are consumed in typical portion sizes.

Overall, the results describe the nutritional contribution of semi-prepared and ready-made soups available in Danish supermarkets. The data are suitable for use in food composition databases and population-level dietary assessment but should not be extrapolated to soups prepared from scratch at home or consumed outside the retail context.

## Resumé (Danish)

Denne undersøgelse har til formål at opdatere næringsstofdata for delvist tilberedte og færdiglavede supper på det danske marked, da de eksisterende data i fødevaredatabasen ikke i tilstrækkelig grad afspejlede det aktuelle produktsortiment.

Baseret på en markedsanalyse og en vareundersøgelse blev prøverne udvalgt, så de repræsenterede de mest udbredte suppetyper i danske supermarkeder. I alt blev 36 individuelle suppeprodukter indsamlet og sammenlagt til ti prøver, der repræsenterer forskellige suppevarianter. Alle analyser blev udført som akkrediterede analyser for energi, makronæringsstoffer samt udvalgte vitaminer og mineraler.

Analyserne viste variation i energitæthed mellem de undersøgte supper. Lav energitæthed blev observeret i supper baseret primært på vand og fond, herunder frosne hønse- og oksekødssupper, samt i tomatsuppe, der er tilberedt fra tørret pulver som anvist på pakken. Højere energitæthed blev observeret i supper, der indeholder mejeriprodukter som mælk, fløde eller ost, hvilket afspejler fedtindholdet. Variationerne i energitæthed var således relateret til produkternes sammensætning.

Proteinindholdet var generelt lavt i de analyserede supper, med højere værdier i produkter, der indeholder kød eller fjerkræ. Kulhydratindholdet var påvirket af tilsætning af stivelse og sukker, som anvendes til konsistens og smag, særligt i tørprodukter og visse cremede supper. En sammenligning med de deklarerede næringsværdier viste variation mellem produkter inden for flere kategorier, hvilket afspejler forskelle i produktformuleringer. De sammensatte prøver repræsenterer gennemsnitlige værdier på markedsniveau og afspejler ikke variationen mellem individuelle produkter.

Indholdet af vitaminer og mineraler var generelt lavt, og for flere mikronæringsstoffer lå værdierne ved eller under de analytiske detektionsgrænser. Natriumindholdet var en undtagelse, idet en typisk portion af suppe indeholdt mængder af salt, der bidrager væsentligt til det samlede saltindtag.

De analytiske data beskriver næringsstofindholdet i delvist tilberedte og færdiglavede supper tilgængelige i danske supermarkeder. Dataene er egnede til brug i fødevaredatabasen og til kostvurderinger på populationsniveau, men afspejler ikke hjemmelavede supper eller produkter uden for detailmarkedet.

# 1. Introduction

This report presents the results of a project conducted in 2023, aiming to update and expand nutrient data for the most consumed semi-prepared or ready-made soups available in Danish supermarkets. According to The Danish Dictionary, soup is defined as a dish consisting of water cooked together with vegetables, herbs and meat or bones, and which may be puréed or thickened (DDO, u.d.).

A study published by the Danish Agriculture and Food Council in May 2025 found that soup is the eighth most popular dinner dish in Denmark. The analysis showed that soup is consumed slightly more frequently by women and is more often described as an inexpensive meal. Soup typically contains vegetables and is perceived as healthier than the average dinner dish. It is more frequently described as either completely homemade or as a ready-made meal that only requires heating (Landbrug & Fødevarer, 2025).

A survey conducted by Coop Analysis in 2019 reported that 5% of Danes consume soup for one or more meals on an average day, most commonly for dinner. This proportion increases to 8% during the winter months (Coop Analyse, 2019).

Sales of ready-made meals continue to increase (Euromonitor, 2025). Prepared soup is part of this trend, with total sales increasing by 9% over the past five years, while sales of frozen soup increased by 12% and sales of dry mix soup decreased by 4% over the same period (Euromonitor, 2025).

Euromonitor International (2025) reports that Danish households purchased an average of 3.3 kg of soup per household from retail stores in 2025, corresponding to approximately 9,400 tonnes in total. Frozen soup accounted for 59% of this volume.

The previous version of the Danish Food Composition Database (version 5.5) contained nutrient data for only one type of ready-to-eat soup. The nutrient content of this tomato soup was based on data borrowed from the United States Department of Agriculture (USDA). This does not adequately reflect the nutrient composition of soups available on the Danish market.

This report describes the sampling strategy, analytical methods and resulting analytical nutrient data for ten soup samples purchased from supermarkets in the Greater Copenhagen area in March 2023. All samples were analysed in duplicate for macro- and micronutrients under ISO 17025 accredited laboratory conditions.

The analytical results are included in the Danish Food Composition Database ([www.fcdb.fooddata.dk](http://www.fcdb.fooddata.dk)).

## 2. Sample Materials

### 2.1 Market Analysis and Sampling Plan

To ensure a representative selection of the best-selling and most widely available soups on the Danish market, samples were selected based on market size data from Euromonitor International (2022a), supplemented by product surveys conducted in supermarkets in the Capital Region of Denmark in January 2023. All grocery retailers in Denmark with a market share above 4%, including supermarkets, discount stores and hypermarkets, were included to ensure broad market coverage.

The product survey was conducted using both online store listings and physical visits to supermarkets and covered all semi-prepared and ready-made soups available at the time of the survey. For all products meeting the predefined criteria, information was recorded on product name, brand, store availability, nutrition declaration and ingredient list. The survey included retailers representing all major grocery chains in Zealand, namely Salling Group, Coop, Rema 1000, Dagrofa and Lidl, which together accounted for 94% of total supermarket<sup>1</sup> sales in Denmark in 2022 (Euromonitor, 2022b). This approach ensured coverage of both market-leading brands and a wide range of product formulations.

Euromonitor sales data were used to rank soup flavour variants for 2022 (Euromonitor, 2022c) and to describe the distribution of soup sales by product format, including dry, shelf-stable, chilled and frozen soups (Euromonitor, 2022a). These data were supplemented by the product survey conducted in January 2023. The survey identified more than 100 different varieties of semi-prepared soups in powdered form, requiring mixing with water and, in some cases, milk prior to heating, as well as ready-made soups requiring only heating.

According to Euromonitor (2022c), the best-selling soup flavour variants in Denmark are tomato, asparagus and goulash, in that order. This ranking was supported by product availability observed in the market survey, where tomato soup had the largest assortment, with more than 20 different variants identified, while other flavour variants were represented by nine types or fewer.

Product format can influence nutritional composition due to heat treatment and other processing steps and was therefore considered alongside flavour when defining the sampling strata. According to Euromonitor (2022a), frozen soups account for 57% of total retail soup sales volume, while shelf-stable soups represent 35%. A similar pattern was observed in the product survey, where frozen and shelf-stable soups together accounted for 72% of the soup products available in retail in Denmark.

To examine variation in nutritional composition across product formats within a single flavour category, tomato soup, as the most widely available and best-selling flavour, was selected for analysis in all four formats: frozen, chilled, shelf-stable and dry mix. As frozen soup is the most common

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<sup>1</sup> In this report, the term *supermarkets* are used to refer to the three modern grocery retail formats defined by Euromonitor, namely supermarkets, discounters and hypermarkets.

product format on the Danish market, a larger proportion of frozen soup samples was included. All soup flavours were included in their frozen format, except for asparagus soup, which was analysed only as a shelf-stable product. Curry soup was analysed in both frozen and shelf-stable formats.

Together, market sales data and product availability formed the basis of the sampling plan and resulted in ten soup samples, as presented in Table 1. These samples represent the most popular flavour variants and the most widely available product formats on the Danish retail market.

Table 1. Soup types included in the study with corresponding Sample ID and English and Danish product descriptions.

Sample ID	Soup type	Suppe variant (Danish)
2302-POOL-04	Asparagus soup, shelf-stable	Aspargessuppe, langtidsholdbar
2302-POOL-01	Beef soup, frozen	Oksekødssuppe, dybfrost
2302-POOL-02	Chicken soup, frozen	Hønseskødssuppe, dybfrost
2302-POOL-10	Curry soup, frozen	Karrysuppe, dybfrost
2302-POOL-03	Curry soup, shelf-stable	Karrysuppe, langtidsholdbar
2302-09-01	Goulash soup, frozen	Gullasch suppe, dybfrost
2302-POOL-06	Tomato soup, chilled	Tomat suppe, køl
2302-10-01	Tomato soup, frozen	Tomat suppe, dybfrost
2302-POOL-08	Tomato soup, reconstituted (from dry mix)	Tomat suppe, tilberedt (fra tørret pulver)
2302-POOL-07	Tomato soup, shelf-stable	Tomat suppe, konserver

## 2.2 Collection of Samples

In March 2023, a total of 36 individual samples (referred to as *single samples* in the Danish Food Composition Database) were collected from supermarkets in the Greater Copenhagen area. Ten samples were prepared, each comprising all products available on the market at the time of sampling that met the defined inclusion criteria.

Eight composite samples (referred to as *pool samples* in the Danish Food Composition Database) consisted of two to eight different products. For frozen goulash soup and frozen curry soup, only one product was available for each soup type; in these cases, the sample consisted of three units. Each sample had a total weight of at least 2,200 g, ensuring sufficient material for analysis. Figures 1 and 2 illustrate the documentation of a composite sample and an independent (single brand) sample, respectively.

Each individual sample was documented both individually and as part of the corresponding composite sample, including information on the weight contribution of each product. All sampling details were recorded during sample collection. Key product and sampling information is summarised in Appendix A.

For each soup type, the weight contribution of each product included in the composite samples was determined based on brand-level market share data from Euromonitor (Euromonitor, 2022b). When

brand-specific market share data were not available for a given soup type, such as for chilled soups, all available products were included with equal weight contributions.

Table 2 provides an overview of each individual sample included in the eight composite samples, including manufacturer, brand name, product name, and the weight contribution of each sample. Two soup types (frozen goulash soup and frozen curry soup) each consisted of three units from a single brand (Mou).

*Table 2. Individual samples included in the composite samples and their respective weight contributions.*

Type	Manufacturer	Brand Name	Product Name	Weight in Composite Sample (g)	Percentage of Composite Sample
<b>Asparagus soup, shelf-stable (2302-POOL-04)</b>				<b>2205</b>	<b>100%</b>
	Larco Foods BV	Coop	Aspargessuppe	315	14%
	Unilever	Knorr	Creamy Asparagus Soup	630	29%
	Unilever	Knorr	Creamy Asparagus Soup, white and green	630	29%
	Langbein	Jürgen Langebein	Aspargessuppe	315	14%
	Lidl Stiftung & Co.	Kania	Asparagus Soup	315	14%
<b>Beef soup, frozen (2302-POOL-01)</b>				<b>2205</b>	<b>100%</b>
	Danish Crown A/S	Mou	Oksekødssuppe, klar og klassisk	1225	56%
	Danish Crown A/S	Coop	Oksekødssuppe m. urter	245	11%
	Danish Crown A/S	Salling	Oksekødssuppe	245	11%
	Normeal A/S	Rema1000	Oksekødssuppe	245	11%
	Danish Crown A/S	Culinea	Oksekødssuppe	245	11%
<b>Chicken soup, frozen (2302-POOL-02)</b>				<b>2205</b>	<b>100%</b>
	Danish Crown A/S	Mou	Hønsekødssuppe	1225	56%
	Danish Crown A/S	Salling	Hønsekødssuppe	245	11%
	Normeal A/S	Rema1000	Hønsekødssuppe	245	11%
	Danish Crown A/S	Coop	Hønsekødssuppe	245	11%
	Danish Crown A/S	Culinea	Hønsekødssuppe	245	11%
<b>Curry soup, shelf-stable (2302-POOL-03)</b>				<b>2200</b>	<b>100%</b>
	Arla Foods amba	Karolines Køkken	Pikant karrysuppe	1650	75%
	Larco Foods BV	Coop	Karrysuppe	275	13%
	Scandic Food A/S	Svansø	Karrysuppe	275	13%
<b>Tomato soup, chilled (2302-POOL-06)</b>				<b>2220</b>	<b>100%</b>
	Meyers	Meyers	Klassisk tomatssuppe	740	33%
	Bodebjerg ApS	Salling	Cremet tomatssuppe	740	33%
	Naturens Køkken A/S	Delikatessen	Tomatssuppe	740	33%
<b>Tomato soup, frozen (2302-POOL-05)</b>				<b>2200</b>	<b>100%</b>
	Danish Crown A/S	Mou	Tomatssuppe m. basilikum ø	1760	80%
	Slagter Lund Aps	Slagter Lund	Tomatssuppe	440	20%
<b>Tomato soup, reconstituted (from dry mix) (2302-POOL-08)</b>				<b>2200</b>	<b>100%</b>
	Unilever	Knorr	Tomatssuppe	880	40%
	Unilever	Knorr	Tomatssuppe - Cup a Soup	880	40%
	Liodry Foods Srl	Coop	Tomatssuppe	440	20%
<b>Tomato soup, shelf-stable (2302-POOL-07)</b>				<b>2200</b>	<b>100%</b>
	Arla Foods amba	Karolines Køkken	Tomatssuppe m. timian	800	36%
	Scandic Food A/S	Svansø	Tomatssuppe	200	9%
	Larco Foods BV	Coop	Cremet tomatssuppe	200	9%
	Larco Foods BV	Coop	Chunky Tomato Soup	200	9%
	Unilever	Knorr	Tomato Soup w. mascarpone	200	9%
	Unilever	Knorr	Tomato Soup w. mascarpone	200	9%
	H.J. Heinz B.V.	Heinz	Cream of Tomato Soup	200	9%
	Lidl Stiftung & Co.	Kania	Creamy Tomato Soup	200	9%



Figure 1 & 2. Documentation of a composite sample, curry soup, shelf-stable (2302-POOL-03), and an independent sample, goulash soup, frozen (2302-09-01), consisting of three units from one brand (Mou).

## 2.3 Sample Preparation

After collection, all samples were stored at approximately 4°C. At DTU National Food Institute, the individual samples for each composite sample were packed in plastic bags while remaining in their original packaging. Each package was labelled with information on the weight of each sample included in the composite sample.

The samples were subsequently transported to Eurofins Steins Laboratorium A/S in Vejen, Denmark. Within 72 hours of collection, the sample material was prepared. All soups (except from dry-mix Tomato soup) were analysed in their state prior to heating. Frozen soups were thawed before analysis, while powdered (dry-mix) tomato soup was prepared according to the instructions on the packaging. To ensure standardised preparation, a detailed step-by-step protocol was provided to the laboratory. The preparation protocol is included in Appendix H (in Danish).

Following preparation, all samples were homogenised by blending for 15 seconds at maximum speed using a Robot Coupe blender. The homogenised material was then portioned into 100 ml plastic containers and stored at -18°C or lower until analysis.

### 3. Analytical Methods

The analytical programme covered, for all ten samples, a comprehensive range of macronutrients, including nitrogen, amino acids, fat, fatty acids, dietary fibre, sugars, starch, ash and dry matter, as well as 13 vitamins and 13 nutritionally relevant minerals.

The vitamins analysed were retinol,  $\beta$ -carotene, vitamin D (four vitamers),  $\alpha$ -tocopherol, vitamin K (phylloquinone and seven menaquinones), thiamine, riboflavin, niacin, pantothenic acid, pyridoxine, biotin, folates, cobalamin and ascorbic acid.

The minerals analysed included sodium, potassium, calcium, magnesium, phosphorus, iron, copper, zinc, iodine, manganese, chromium, selenium and molybdenum.

A brief overview of the analytical methods applied is provided in Appendix B. The ten samples were analysed as composite samples, and each analysis was performed in duplicate to ensure analytical reliability. All analyses were conducted as accredited tests in accordance with ISO 17025:2017 at Eurofins Steins Laboratorium A/S (DANAK TEST Reg. No. 222).

### 4. Results

The analytical results are presented in Appendices C–G. When interpreting the results, it should be noted that for several nutrients, particularly vitamins, fatty acids and trace elements, concentrations were below the respective limits of quantification (LOQ). In these cases, the reported values represent method-specific limits of quantification rather than confirmed absence of the nutrient. Results below the LOQ should therefore be interpreted qualitatively and with caution, especially when comparing samples.

For some dietary fibre fractions, methodological constraints required the use of alternative analytical methods that do not allow quantification of all fibre components. Consequently, some values are reported as n.a. These methodological limitations are described in the relevant appendices.

The analytical results are presented in the following appendices:

- Appendix C: Macronutrients including dietary fiber, sugars, and starch.
- Appendix D: Vitamins
- Appendix E: Minerals
- Appendix F: Amino acids
- Appendix G: Fatty acids

In addition, Table 3 presents the total energy content and the proportion of energy derived from saturated fat, as well as sugar and salt content.

Table 3. Energy, total sugars and salt content in each of the ten samples.

Sample Type	Nutrient Content (g/100g)							Energy (kJ/100g)	Energy <sup>1</sup> (%)			
	Fat	SFA <sup>4</sup>	Carbohydrate <sup>3</sup>	Sugars <sup>5</sup>	Dietary fiber	Protein <sup>2</sup>	Salt <sup>6</sup>	Total	Fat	Carbohydrate	Dietary Fiber	Protein
Asparagus soup, shelf stable	2.1	0.3	4.4	0.7	0.0	0.6	0.8	163	48	46	0	6
Beef soup, frozen	0.9	0.3	2.7	<0.2	0.0	0.4	0.7	86	39	53	0	9
Chicken soup, frozen	0.6	0.1	0.9	<0.2	0.0	0.4	0.7	44	50	36	0	14
Curry soup, frozen	6.6	3.0	5.1	0.5	0.6	2.4	0.9	375	65	23	1	11
Curry soup, shelf stable	3.9	2.0	5.6	3.0	1.1	1.4	1.0	271	53	35	3	9
Goulash soup, frozen	0.4	<0.1	3.9	1.3	1.1	3.1	1.0	143	10	47	6	36
Tomato soup, chilled	2.3	0.9	4.7	1.1	1.7	1.1	1.2	197	43	41	7	9
Tomato soup, frozen	3.3	1.7	5.7	3.6	0.8	1.4	0.9	249	49	39	3	10
Tomato soup, reconstituted	0.7	<0.1	5.5	3.0	0.6	0.9	0.8	139	19	67	3	11
Tomato soup, shelf stable	2.6	0.8	5.2	3.9	1.2	1.1	0.8	213	45	41	5	9

<sup>1</sup> Energy from protein and carbohydrate contributes 17 kJ/g, fat contributes 37 kJ/g, and dietary fibre contributes 8 kJ/g.

<sup>2</sup> Protein calculated as nitrogen × 6.25. Nitrogen data are reported in Appendix C.

<sup>3</sup> Carbohydrate calculated as available carbohydrate: dry matter – (nitrogen × 6.25) – fat – ash – dietary fibre. All data are reported in Appendix C.

<sup>4</sup> Saturated fats (SFA) calculated as the sum of saturated fatty acids reported in Appendix G.

<sup>5</sup> Sugars calculated as the sum of sugars reported in Appendix C.

<sup>6</sup> Salt calculated as sodium × 2.5. Sodium data are reported in Appendix E.

## 5. Discussion

### 5.1 Sampling Strategy and Representativeness

The sampling strategy was designed to generate market-representative nutrient data for semi-prepared and ready-made soups available on the Danish retail market. Products were selected based on market share data and supermarket surveys, and samples were constructed from all relevant products within each selected soup category, weighted according to brand-level market share where available. This approach ensures that the analysed samples reflect average nutrient composition at population level and is appropriate for inclusion in food composition databases and dietary intake assessment.

The use of composite samples limits the ability to describe variability between individual products within each category. Comparison of declared macronutrient values for the individual products included in the composite samples showed that several soup categories, including frozen and chilled tomato, shelf-stable asparagus soup and in some degree shelf-stable curry soups, comprised products with differing formulations and nutrient profiles. Differences in ingredient composition, such as the use of dairy products, added fats and thickening agents, resulted in variation in energy density and macronutrient composition across products. Consequently, the analysed composite samples represent weighted market averages rather than nutritionally homogeneous foods and should not be interpreted as representative of a single, well-defined product.

Sampling was limited to products sold in supermarkets and does not include soups consumed in food service settings or soups prepared from scratch at home. Nutritional composition in these contexts may differ and is not captured by the present data.

## 5.2 Energy and Macronutrient Composition

The analysed soups showed variation in energy density across products. Energy density ranged from 44 kJ/100 g in clear, broth-based soups to 375 kJ/100 g in frozen curry soup containing 11% cream.

The lowest energy densities were observed for frozen chicken and beef soups. These products were composed of relatively homogeneous soups based primarily on water and stock, with limited contribution from fat-containing ingredients. Ingredient lists and declared nutrient values indicated only minor differences between chicken and beef soups, which was reflected in similar energy and macronutrient profiles in the analysed composite samples.

Low energy density was also observed for reconstituted tomato soup prepared from dry mixes, consistent with the high proportion of added water during preparation and limited fat content. In contrast, soups containing dairy products such as milk, cream or cheese showed higher energy density, reflecting the contribution of fat. Vegetable oils may also contribute to energy density, although their specific impact was not evaluated separately in the present study.

Product formats were analysed separately to account for differences in processing and preparation prior to consumption. Chilled, frozen and shelf-stable soups were analysed without heating, whereas dry soups were analysed after preparation according to manufacturer instructions. This distinction is relevant when interpreting nutrient values in relation to the soup as consumed, although the present results do not isolate the effect of heating itself.

Overall, the results indicate that differences in energy density are primarily related to soup composition, particularly the balance between water- and stock-based components and the presence of dairy products and other fat sources. The observed differences reflect formulation choices across commercially available products rather than the nutritional profile of a defined soup type. Consequently, the analysed composite samples represent market-level averages and capture the range of products available within each category, rather than nutritionally uniform foods.

## 5.3 Sodium and Salt Content

All analysed soups contained sodium, reflecting the use of salt in semi-prepared and ready-made soups for flavour and preservation. Sodium content ranged from approximately 260 mg to 460 mg per 100 g, corresponding to around 0.7–1.2 g salt per 100 g.

In contrast to energy and macronutrient composition, sodium content showed limited variation across soup categories and products. Salt levels were relatively similar across the analysed soups, regardless of ingredient composition.

When typical portion sizes are considered, soup can contribute substantially to overall dietary salt intake. A portion of approximately 250 g soup may provide around 1.9–2.9 g salt, corresponding to a considerable share of the recommended maximum daily intake of 5–6 g for adults (FVST, 2026). This highlights that ready-made soups can be a significant source of dietary sodium and may contribute to intakes above recommended levels at both individual and population level.

## 6. Nutritional Perspective

From a nutritional perspective, the present results describe the contribution of semi-prepared and ready-made soups available in Danish supermarkets when consumed as intended. While soups are often perceived as a healthy meal option, the analysed products generally provided modest amounts of most nutrients relative to typical portion sizes.

Across product types, soups primarily contributed energy and sodium, while their contribution to protein and micronutrient intake was limited. Vegetable-based soups did contain measurable amounts of selected micronutrients; however, concentrations were generally low and, for several nutrients, close to analytical limits of quantification, restricting their nutritional relevance at the level of usual consumption.

Sodium content was a consistent and nutritionally relevant feature across all analysed soups and represents the main nutritional consideration when evaluating the role of ready-made soups in the diet. Depending on portion size, soup consumption may contribute substantially to daily salt intake and should therefore be considered in dietary assessments at both individual and population level.

Overall, the analysed samples reflect variation in product formulation on the Danish retail market rather than the nutrient composition of a single, well-defined soup type. The results are suitable for use in food composition databases and dietary intake calculations but should not be extrapolated to homemade soups or to food service settings. Future work could further differentiate soups based on formulation characteristics and explore the impact of preparation and heating on nutrient retention.

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## Appendix A – Sample Information

Name	Brand	Barcode	Ingredienser (Danish)	Ingredients	BBD	Sample Date
<b>Asparagus soup, shelf-stable (2302-POOL-04)</b>						
Aspargessuppe	Coop	5700382088898	Vand, hvide asparges 9%, grønne asparges 3%, palmeolie, modificeret majsstivelse, hvedemel, salt, aroma (indeholder sennep og selleri), laktose, mælkeprotein, sukker, emulgator (E 451), krydderier, rapsolie. Steriliseret.	Water, white asparagus 9%, green asparagus 3%, palm oil, modified maize starch, wheat flour, salt, flavouring (contains mustard and celery), lactose, milk protein, sugar, emulsifier (E451), spices, rapeseed oil. Sterilised.	aug-24	14-03-2023
Creamy Asparges Soup	Knorr	8722700169758	Vand, asparges 8,6% (hvide og grønne), modificeret stivelse, rapsolie, hvedemel, kærnemælkspulver, salt, gærekstrakt, stabilisatorer (E 451, E 452), grøntsagssaftkoncentrat (selleri, gulerødder, porrer, løg), hvidløg, aroma (med kylling), rosmarin.	Water, asparagus 8.6% (white and green), modified starch, rapeseed oil, wheat flour, buttermilk powder, salt, yeast extract, stabilisers (E451, E452), vegetable juice concentrate (celery, carrots, leeks, onion), garlic, flavouring (with chicken), rosemary.	okt-23	14-03-2023
Creamy Asparges Soup, white and green	Knorr	8722700169758	Vand, asparges 8% (hvid og grøn), kærnemælk, modificeret stivelse, hvedemel, rapsolie, aroma, joderet salt, gær-/gjærekstrakt, stabilisatorer (E 451, E 452), salt, grøntsagssaftkoncentrat (selleri, gulerod, porre, løg), hvidløg, rosmarin.	Water, asparagus 8% (white and green), BUTTERMILK, modified starch, WHEAT FLOUR, rapeseed oil, flavouring, iodised salt, yeast extract, stabiliser (E451, E452), salt, vegetable juice concentrate (CELERY, carrot, leek, onion), garlic, rosemary.	nov-23	13-03-2023
Aspargessuppe	Jürgen Langebein	4007680103423	Vand, asparges 12%, fløde 4%, palmefedt, modificeret majsstivelse, sukker, hvedemel, stivelse, salt, dextrose, laktose, smørpulver, skummetmælkspulver, mælkeprotein, gærekstrakt, krydderier, aroma.	Water, asparagus (12%), CREAM (4%), palm fat, modified maize starch, sugar, WHEAT FLOUR, starch, salt, dextrose, LACTOSE, BUTTER POWDER, SKIMMED MILK POWDER, MILK PROTEIN, yeast extract, spices, flavouring.	14-11-2025	13-03-2023
Asparagus Soup	Kania	20015039	Vand, asparges 7%, modificeret stivelse, fløde (mælk), vegetabiliske olier (solsikke, raps), salt, hvedemel, sukker, glukosesirup, emulgator (mono- og diglycerider af fedtsyrer), fortykningsmiddel (guargummi), skummetmælkspulver, dextrose, aromaer (indeholder æg, mælk, selleri), mælkeprotein, gærekstrakt, krydderier (indeholder selleri, sennep), farvestof (riboflavin).	Water, 7% asparagus, modified starch, cream (milk), vegetable oils (sunflower, rapeseed), salt, wheat flour, sugar, glucose syrup, emulsifier (mono- and diglycerides of fatty acids), thickener (guar gum), skimmed milk powder, dextrose, flavourings (contain egg, milk, celery), milk protein, yeast extract, spices (contain celery, mustard), colour (riboflavin).	16-05-2025	14-03-2023
<b>Beef soup, frozen (2302-POOL-01)</b>						
Oksekødssuppe, klar og klassisk	Mou	5741300056162	Suppe 90% (kogt på vand, oksekraftben, okseskanker, porrer, gulerødder, persillerod, selleri, pastinak, salt), oksemarvfedt, salt, gærekstrakt, krydderi- og grøntsagsekstrakter.	Soup (90%) (prepared with: water, beef bones, beef shanks, leeks, carrots, parsley root, CELERY, parsnip, salt), beef marrow fat, salt, yeast extract, spice and vegetable extracts.	11-07-2024	14-03-2023
Oksekødssuppe m. urter	Coop	7340011354161	Vand, råsuppe/fond 31% (kogt på vand, okseskank, oksekraftben, porre, gulerod, persillerod, selleri, pastinak, salt), grøntsager 10% (gulerod, selleri, porre), oksemarvfedt, salt, glukosesirup, gærekstrakt, sukker, oksekødsekstrakt.	Water, base soup/stock 31% (prepared with: water, beef shank, beef bones, leek, carrot, parsley root, celery, parsnip, salt), vegetables 10% (carrot, celery, leek), beef marrow fat, salt, glucose syrup, yeast extract, sugar, beef extract.	21-12-2023	14-03-2023
Oksekødssuppe	Salling	5712874523343	78% vand, 10% suppeurter (gulerødder, selleri, porrer), 9% råsuppe (kogt på vand, oksekraftben, okseskanker, porrer, gulerødder, persillerod, selleri, pastinak, salt), oksemarvfedt, salt, druesukker, oksefedt, gærekstrakt, smagsforstærker (E 621), grøntsags- og krydderiekstrakter (løg, løvstikke, peber, selleri).	78% water, 10% soup vegetables (carrots, CELERY, leeks), 9% base soup (prepared with water, beef bones, beef shanks, leeks, carrots, parsley root, CELERY, parsnip, salt), beef marrow fat, salt, dextrose, beef fat, yeast extract, flavour enhancer (E621), vegetable and spice extracts (onion, lovage, pepper, CELERY).	01-07-2023	16-03-2023
Oksekødssuppe	Rema1000	5707196111187	56% vand, 31% råsuppe (kogt på vand, oksekraftben, okseskank, porre, gulerod, persillerod, selleri, pastinak, salt), 10% grøntsager (gulerod, selleri, porre), oksemarvfedt, salt, glukosesirup, gærekstrakt, sukker, oksekødsekstrakt.	56% water, 31% base soup (prepared with water, beef bones, beef shank, leek, carrot, parsley root, celery, parsnip, salt), 10% vegetables (carrot, celery, leek), beef marrow fat, salt, glucose syrup, yeast extract, sugar, beef extract.	18-05-2024	14-03-2023
Oksekødssuppe	Culinaea	20383459	90% suppe (vand, fond (okseben, kød fra okseben, porrer, gulerødder, persillerod, selleri, pastinak, salt), oksemarvben, salt, glukosesirup, oksefedt, gærekstrakt, sukker, oksekødsekstrakt), 10% grøntsagsblanding (gulerødder, selleri, porrer).	90% soup (water, stock (beef bones, meat from beef bones, leeks, carrots, parsley root, celery, parsnip, salt), beef marrow bones, salt, glucose syrup, beef fat, yeast extract, sugar, beef extract), 10% vegetable mix (carrots, celery, leeks).	17-04-2024	14-03-2023

Name	Brand	Barcode	Ingredienser (Danish)	Ingredients	BBD	Sample Date
<b>Chicken soup, frozen (2302-POOL-02)</b>						
Hønseskødssuppe	Mou	5741300056179	Suppe 90% (kogt på vand, høns, oksekraftben, porrer, gulerødder, persillerod, selleri, pastinak, salt), hønsefedt, salt, gærekstrakt, krydderi- og grøntsagsekstrakter (indeholder selleri), kyllingefondpulver. Grøntsagsblanding 10% (gulerødder, selleri, porrer).	Soup 90% (prepared with water, chicken, beef bones, leeks, carrots, parsley root, celery, parsnip, salt), chicken fat, salt, yeast extract, spice and vegetable extracts (contain celery), chicken stock powder. Vegetable mix 10% (carrots, celery, leeks).	02-07-2023	14-03-2023
Hønseskødssuppe	Salling	5712874523305	78% vand, 10% suppeurter (gulerødder, selleri, porrer), 9% råsuppe (kogt på vand, høns, oksekraftben, porrer, gulerødder, persillerod, selleri, pastinak, salt), hønsefedt, glukosesirup, sukker, smagsforstærker (E 621), kyllingearoma, kyllingefedt.	78% water, 10% soup vegetables (carrots, CELERY, leeks), 9% base soup (prepared with water, chicken, beef bones, leeks, carrots, parsley root, CELERY, parsnip, salt), chicken fat, salt, glucose syrup, sugar, flavour enhancer (E621), chicken flavouring, chicken fat.	11-07-2023	14-03-2023
Hønseskødssuppe	Rema 1000	5707196111156	56% vand, 31% råsuppe (kogt på vand, høns, oksekraftben, porre, gulerod, persillerod, selleri, pastinak, salt), 10% grøntsager (gulerod, selleri, porre), 2% hønsefedt, salt, glukosesirup, gærekstrakt, sukker, fjerkræaroma.	56% water, 31% base soup (prepared with water, chicken, beef bones, leek, carrot, parsley root, celery, parsnip, salt), 10% vegetables (carrot, celery, leek), 2% chicken fat, salt, glucose syrup, yeast extract, sugar, poultry flavouring.	17-05-2024	14-03-2023
Hønseskødssuppe	Coop	7340011354154	Vand, fond 47% (kogt på vand, høns, oksekraftben, porre, gulerod, persillerod, selleri, pastinak, salt), hønsefedt, salt, gærekstrakt, grøntsags- og krydderiekstrakter (bl.a. selleri), kyllingebouillonpulver (kyllingefedt, kyllingefond, salt).	Water, stock 47% (prepared with: water, chicken, beef bones, leek, carrot, parsley root, celery, parsnip, salt), chicken fat, salt, yeast extract, vegetable and spice extracts (including celery), chicken bouillon powder (chicken fat, chicken stock, salt).	30-03-2024	14-03-2023
Hønseskødssuppe	Culineia	20383466	90% suppe (kogt på vand, høns, oksekraftben, porrer, gulerødder, persillerod, selleri, pastinak, salt), hønsefedt, salt, glukosesirup, gærekstrakt, sukker, aroma, 10% grøntsagsblanding (gulerødder, selleri, porrer).	90% soup (prepared with: water, chicken, beef bones, leeks, carrots, parsley root, celery, parsnip, salt), chicken fat, salt, glucose syrup, yeast extract, sugar, flavouring), 10% vegetable mix (carrots, celery, leeks).	27-04-2024	14-03-2023
<b>Curry soup, frozen (2302-POOL-10)</b>						
Karrysuppe	Mou	5741300057398	Suppe 80% (kogt på vand, høns, oksekraftben, porrer, gulerødder, persillerod, selleri, pastinak, salt), piskefløde 11%, palme- og rapsolie, majsstivelse, karry, krydderier, krydderi-, krydderurte- og grøntsagsekstrakter (indeholder hvide, selleri), salt, sukker. Fyld 20%: kogt hønseskød, rød peberfrugt, kogte ris, ærter, majs, løg.	Soup (80%) (prepared with water, chicken, beef bones, leeks, carrots, parsley root, CELERY, parsnip, salt), WHIPPING CREAM (11%), palm and rapeseed oil, corn starch, curry, spices, spice, herb and vegetable extracts (contain WHEAT, CELERY), salt, sugar. Filling 20%: cooked chicken meat, red bell pepper, cooked rice, peas, corn, onion.	02-02-2024	14-03-2023
<b>Curry soup, shelf-stable (2302-POOL-03)</b>						
Pikant karrysuppe	Karolines Køkken	5700426234847	Grøntsagsbouillon (vand, salt, pastinak, løg, gulerod, tomat, løvstikke, peberfrugt, savoykål, porre, laurbærblad, timian, cayennepeber), fløde, tomatpuré, æblejuice, modificeret kartoffelstivelse, kokosmælkspulver, løgpulver, karry, salt, spidskommen.	Vegetable bouillon (water, salt, parsnip, onion, carrot, tomato, lovage, bell pepper, savoy cabbage, leek, bay leaf, thyme, cayenne pepper), cream, tomato purée, apple juice, modified potato starch, coconut milk powder, onion powder, curry, salt, cumin.	22-08-2023	14-03-2023
Karrysuppe	Coop	5700381827672	Vand, grøntsager 13% (tomat, løg, gulerod, porre, gul peberfrugt), kokosmælkspulver 2,5% (kokosekstrakt, maltodextrin, emulgator (natriumcaseinat)), modificeret kartoffelstivelse, sukker, palmeolie, salt, piskefløde 0,7%, aroma (rapsolie, sukker, aroma), koncentreret æblejuice, laktose, krydderier (bl.a. gurkemeje, sennep, spidskommen, cayennepeber, fennikel, ingefær), mælkeprotein, krydderurter (bl.a. selleri), løgkoncentrat.	Water, vegetables 13% (tomato, onion, carrot, leek, yellow bell pepper), coconut milk powder 2.5% (coconut extract, maltodextrin, emulsifier (sodium caseinate)), modified potato starch, sugar, palm oil, salt, whipping cream 0.7%, flavouring (rapeseed oil, sugar, flavouring), concentrated apple juice, lactose, spices (including turmeric, mustard, cumin, cayenne pepper, fennel, ginger), milk protein, herbs (including celery), onion concentrate.	jun-24	14-03-2023
Karrysuppe	Svansø	5701116017313	Vand, fløde 10%, rød peberfrugt 6%, løg 4,3%, appelsinjuice fra koncentrat 3,9%, majsstivelse*, rapsolie*, rørsukker*, grøntsagsbouillon*, æblepuré*, mango*, eddike*, havsalt, purløg*, hvidløg*, naturlig karryaroma 0,2%, karry 0,2%, surhedsregulerende middel (E 270), stabilisator (E 415), hvid peber, gurkemeje*, cayennepeber*. *Økologisk.	Water, CREAM* (10%), red bell pepper* (6%), onion* (4.3%), orange juice from concentrate* (3.9%), corn starch*, rapeseed oil*, cane sugar*, vegetable bouillon*, apple purée*, mango*, vinegar*, sea salt, chives*, garlic*, natural curry flavouring (0.2%), curry* (0.2%), acidity regulator (E270), stabiliser (E415), white pepper*, turmeric*, cayenne pepper*. *Organic.	28-07-2023	14-03-2023

Name	Brand	Barcode	Ingredienser (Danish)	Ingredients	BBD	Sample Date
<b>Goulash soup, frozen (2302-POOL-09)</b>						
Gullaschsuppe	Mou	5741300057367	Suppe 80% (kogt på vand, oksekraftben, okseskanker, porrer, persillerod, gulerødder, selleri, pastinak, salt), majsstivelse, tomatpuré, gærkstrakt, krydderier, flåede tomater, salt, sukker, hvedemel, hvidløgsipuré, løg, druesukker, glukosesirup. Fyld 20%: løg, kogt oksekød, kartoffeltern, rød peber, champignon.	Soup (80%) (prepared with water, beef bones, beef shanks, leeks, parsley root, carrots, CELERY, parsnip, salt), corn starch, tomato purée, yeast extract, spices, peeled tomatoes, salt, sugar, WHEAT FLOUR, garlic purée, onion, dextrose, glucose syrup. Filling 20%: onion, cooked beef, diced potatoes, red bell pepper, mushrooms.	31-03-2024	14-03-2023
<b>Tomato soup, chilled (2302-POOL-06)</b>						
Klassisk tomatsuppe	Meyers	57440011030067	58% hakkede tomater* (tomater, tomatjuice, surhedsregulerende middel: citronsyre), vand, 3% løg*, 3% fløde*, majsstivelse*, tomatkoncentrat*, sukker*, salt, æblecidereddike* (æblesaft (fra koncentrat), æblecidereddike, vand), grøntsagsbouillon* (salt, grøntsagspulver, maltodextrin, naturlig aroma, sukker, stivelse, rapsolie, stabilisator: guar gummi, antioxidant: rosmarinestrakt), hvidløg*, olivenolie*, basilikum*, chili*, peber*.	58% chopped tomatoes* (tomatoes, tomato juice, acidity regulator: citric acid), water, 3% onion*, 3% cream*, corn starch*, tomato concentrate*, sugar*, salt, apple cider vinegar* (apple juice from concentrate, apple cider vinegar, water), vegetable bouillon* (salt, vegetable powder, maltodextrin, natural flavouring, sugar, starch, rapeseed oil, stabiliser: guar gum, antioxidant: rosemary extract), garlic*, olive oil*, basil*, chilli*, pepper*.	24-03-2023	14-03-2023
Cremet tomatsuppe	Salling	5712875490415	Vand, knuste tomater (heraf 75% knuste tomater, 25% tomatjuice, surhedsregulerende middel (E 330)), madlavningsfløde (fløde, modificeret majsstivelse, stabilisatorer (E 466, E 331, E 407), emulgator (E 471)), selleri, gulerødder, smør, porrer, grødris, bladselleri, løg, grøntsagsbouillon (salt, grøntsagspulver (pastinak, løg, gulerod, champignon, porre, tomat, hvidløg), maltodextrin, naturlig grøntsagsaroma, sukker, majsstivelse, rapsolie, stabilisator (E 412), antioxidant (E 392)), tomatkoncentrat, salt, sukker, hvidløg, peber, laurbærblade.	Water, crushed tomatoes (75% crushed tomatoes, 25% tomato juice, acidity regulator (E330)), cooking cream (CREAM, modified maize starch, stabilisers (E466, E331, E407), emulsifier (E471)), CELERY, carrots, BUTTER, leeks, rice, LEAF CELERY, onion, vegetable bouillon (salt, vegetable powder (parsnip, onion, carrot, mushroom, leek, tomato, garlic), maltodextrin, natural vegetable flavouring, sugar, maize starch, rapeseed oil, stabiliser (E412), antioxidant (E392)), tomato concentrate, salt, sugar, garlic, pepper, bay leaves.	20-05-2023	14-03-2023
Tomatsuppe	Delikatessen	5701410407360	Hønsebouillon (vand, salt, hønsefedt, oksefedt, glukosesirup, aroma, kylling, syre (E 330, E 270, E 327), krydderier, karamelsukker, maltodextrin, rosmarinestrakt), 30% knuste tomater (tomat, tomatjuice, surhedsregulerende middel (E 330)), tomatpuré, løg, sukker, hvidløg, salt, peber.	Chicken bouillon (water, salt, chicken fat, beef fat, glucose syrup, flavouring, chicken, acids (E330, E270, E327), spices, caramelised sugar, maltodextrin, rosemary extract), 30% crushed tomatoes (tomato, tomato juice, acidity regulator (E330)), tomato purée, onion, sugar, garlic, salt, pepper.	26-07-2023	14-03-2023
<b>Tomato soup, frozen (2302-POOL-05)</b>						
Tomatsuppe m. basilikum ø	Mou	5707196199314	Råsuppe (kogt på vand, hønse*, oksekraftben*, porrer*, gulerødder*, persillerod*, selleri*, pastinak*, salt), tomatpuré* (14%), piskefløde* (9%), majsstivelse*, krydderier*, krydderurter*, hvidløg*, hønsefond*, sukker*, salt, grøntsager (gulerødder*, porrer*, løg*), basilikum*.	Base soup (prepared with water, chicken*, beef bones*, leeks*, carrots*, parsley root*, CELERY*, parsnip*, salt), tomato purée* (14%), WHIPPING CREAM* (9%), corn starch*, spices*, herbs*, garlic*, chicken stock*, sugar*, salt, vegetables (carrots*, leeks*, onion*), basil*.	25-04-2024	13-03-2023
Tomatsuppe	Slagter Lund	5710517100395	Hønsefond 45% (kogt på kylling, gulerod, løg, knoldselleri, timian, hvidløg, peber), tomat 27% (tomater, tomatjuice, citronsyre), tomatpuré (tomat, salt), tomatketchup (tomatpuré, eddike, sukker, salt, krydderi- og urteekstrakter), sukker, sellerisalt (selleri), tabasco (eddike, rød peber, salt), timian, karry, majsstivelse.	Chicken stock (45%) (prepared with chicken, carrot, onion, CELERY ROOT, thyme, garlic, pepper), tomato (27%) (tomatoes, tomato juice, citric acid), tomato purée (tomato, salt), tomato ketchup (tomato purée, vinegar, sugar, salt, spice and herb extracts), sugar, celery salt (CELERY), Tabasco (vinegar, red pepper, salt), thyme, curry, corn starch.	10-05-2023	13-03-2023
<b>Tomato soup, reconstituted (from dry mix) (2302-POOL-08)</b>						
Tomatsuppe	Knorr	5719642201267	Tomater 34%, sukker, stivelse, hvedemel, salt, palmefedt, kaliumchlorid, hydrolyserede vegetabiliske proteiner, glukosesirup, løgpulver, maltodextrin, citronsaftpulver, mælkeprotein, krydderier (bl.a. hvidløg), krydderurter, aroma (selleri), rødbedesaftpulver, gærkstrakt.	Tomatoes 34%, sugar, starch, wheat flour, salt, palm fat, potassium chloride, hydrolysed vegetable proteins, glucose syrup, onion powder, maltodextrin, lemon juice powder, milk protein, spices (including garlic), herbs, flavouring (celery), beetroot juice powder, yeast extract.	03-2024	14-03-2023

Continued on the next page

Name	Brand	Barcode	Ingredienser (Danish)	Ingredients	BBD	Sample Date
<b>(Continued) Tomato soup, reconstituted (from dry mix) (2302-POOL-08)</b>						
Tomatsuppe - Cup a Soup	Knorr	8714100263686	Tomatpurépulver 43%, stivelse, sukker, palme-fedt, joderet salt, valleprodukt (mælk), maltodextrin, glukosesirup, mælkesukker, hvedemel, gærekstrakt, tørret smør, løgpulver, skummetmælkspulver, salt, krydderier og krydderurter (bl.a. bladselleri og persillerod), aroma (mælk), grøntsagssaftkoncentrat (bl.a. selleri og løg).	Tomato purée powder 43%, starch, sugar, palm fat, iodised salt, whey product (milk), maltodextrin, glucose syrup, lactose, WHEAT FLOUR, yeast extract, dried butter, onion powder, skimmed milk powder, salt, spices and herbs (including CELERY LEAVES and parsley root), flavouring (milk), vegetable juice concentrate (including CELERY and onion).	jun-24	14-03-2023
Tomatsuppe	Coop	734001143296	Majsstivelse, tomatpulver 23% (tomat: Italien), hvedemel, sukker, salt, skummetmælkspulver, gærekstrakt, maltodextrin, løg, aroma, antiklumpningsmiddel (E 551), farvestof (E 160c), dextrose.	Corn starch, tomato powder 23% (tomato: Italy), wheat flour, sugar, salt, skimmed milk powder, yeast extract, maltodextrin, onion, flavouring, anti caking agent (E551), colour (E160c), dextrose.	23-03-2023	14-03-2023
<b>Tomato soup, shelf-stable (2302-POOL-07)</b>						
Tomatsuppe m. timian	Karolines Køkken	5700426233673	Grøntsagsbouillon (vand, salt, pastinak, løg, gulerod, tomat, løvstikke, peberfrugt, savoykål, porre, laurbærblad, timian, cayennepeber), tomatpuré (26%), mælk, fløde, modificeret kartoffelstivelse, sukker, oregano, salvieekstrakt, hvidløgpulver, hvid peber.	Vegetable bouillon (water, salt, parsnip, onion, carrot, tomato, lovage, bell pepper, savoy cabbage, leek, bay leaf, thyme, cayenne pepper), tomato purée (26%), MILK, CREAM, modified potato starch, sugar, oregano, sage extract, garlic powder, white pepper.	06-10-2023	13-03-2023
Tomatsuppe	Svansø	5701116017320	Vand, tomatkoncentrat* (15%), hakkede tomater* (15%), fløde* (8%), rørsukker*, hvidløg* (1,6%), majsstivelse*, grønnsagsbouillon*, rapsolie*, eddike*, løg* (1%), havsalt, rød peberfrugt*, surhedsregulerende middel (E 270), oregano* (0,06%), hvid peber*. *Økologisk.	Water, tomato concentrate* (15%), chopped tomatoes* (15%), CREAM* (8%), cane sugar*, garlic* (1.6%), corn starch*, vegetable bouillon*, rapeseed oil*, vinegar*, onion* (1%), sea salt, red bell pepper*, acidity regulator (E270), oregano* (0.06%), white pepper*. *Organic.	28-07-2023	14-03-2023
Cremet tomat-suppe	Coop	5700382603251	Tomat 90% (tomatkoncentrat, vand), sukker, modificeret stivelse, rapsolie, sødmælkspulver, mascarponeost 1% (fløde, surhedsregulerende middel (E 330)), aroma (indeholder sennep og selleri), kærnemælkspulver, salt, surhedsregulerende midler (E 300, E 330), krydderier.	Tomato 90% (tomato concentrate, water), sugar, modified starch, rapeseed oil, whole milk powder, mascarpone cheese 1% (cream, acidity regulator (E330)), flavouring (contains mustard and celery), buttermilk powder, salt, acidity regulators (E300, E330), spices.	aug-24	14-03-2023
Chunky Tomato Soup	Coop	5700384205255	Tomat 61% (tomatkoncentrat) (EU), vand, tomatjuice (EU), rød peberfrugt 13%, tomatter 9,5% (EU), løg 9%, rapsolie, sukker, hvidløg, aroma (indeholder selleri), olivenolie, ost (parmesanost, smeltesalt (E 339)), krydderurter (basilikum, rosmarin, oregano, timian, merian), modificeret majsstivelse, salt, surhedsregulerende middel (E 330), sort peber, fortykningsmiddel (E 412).	Tomato 61% (tomato concentrate) (EU), water, tomato juice (EU), red bell pepper 13%, tomato pieces 9.5% (EU), onion 9%, rapeseed oil, sugar, garlic, flavouring (contains celery), olive oil, cheese (Parmesan cheese, melting salt (E339)), herbs (basil, rosemary, oregano, thyme, marjoram), modified maize starch, salt, acidity regulator (E330), black pepper, thickener (E412).	jul-24	14-03-2023
Tomato Soup w. mascarpone	Knorr	8722700085072	Tomat 68%, vand, kærnemælk, vegetabiliske olier (raps, solsikke), modificeret stivelse, sukker, mascarponeost 0,8%, hvedemel, salt, soltørrede tomater 0,3%, gærekstrakt (byg), krydderier, krydderurter (bl.a. løgpulver, hvidløg, persillerod, kødekstrakt, balsamisk eddikepulver, hvidvinsekstrakt), surhedsregulerende middel (citronsyre), aroma, maltodextrin, stabilisatorer (E 451, E 452), fruktose.	Tomato 68%, water, buttermilk, vegetable oils (rapeseed, sunflower), modified starch, sugar, mascarpone cheese 0.8%, wheat flour, salt, sun dried tomatoes 0.3%, yeast extract (barley), spices, herbs (including onion powder, garlic, parsley root, meat extract, balsamic vinegar powder, white wine extract), acidity regulator (citric acid), flavouring, maltodextrin, stabilisers (E451, E452), fructose.	jul-23	14-03-2023
Tomato Soup w. mascarpone	Knorr	8712566371372	Vand, tomater 42%, modificeret stivelse, mascarponeost 2%, fløde 1,5%, sukker, kærnemælk, skummetmælk, salt, løg, solsikkeolie, gærekstrakt, hvidløg, krydderier og krydderurter.	Water, tomatoes 42%, modified starch, mascarpone cheese 2%, cream 1.5%, sugar, buttermilk, skimmed milk, salt, onion, sunflower oil, yeast extract, garlic, spices and herbs.	dec-23	14-03-2023
Tomato Soup	Heinz	5000157062673	Tomat 89%, vand, modificeret majsstivelse, sukker, rapsolie, skummetmælkspulver, salt, fløde (mælk), valleprotein (mælk), krydderiekstrakter, krydderurteekstrakter, surhedsregulerende midler (citronsyre).	Tomato 89%, water, modified maize starch, sugar, rapeseed oil, skimmed milk powder, salt, cream (milk), whey protein (milk), spice extracts, herb extracts, acidity regulators (citric acid).	mar-24	13-03-2023
Creamy Tomato Soup	Kania	20015015	Vand, 12% tomatkoncentrat, 4% fløde (mælk), sukker, hvedemel, modificeret stivelse, salt, vegetabiliske olier (raps, solsikke), skummetmælkspulver, gærekstrakt, fortykningsmiddel (xanthangummi), krydderier (indeholder sennep), emulgator (lecithiner), aromaer (indeholder æg, mælk, selleri), syre (citronsyre), glukosesirup, mælkeprotein.	Water, 12% tomato concentrate, 4% cream (milk), sugar, wheat flour, modified starch, salt, vegetable oils (rapeseed, sunflower), skimmed milk powder, yeast extract, thickener (xanthan gum), spices (contain mustard), emulsifier (lecithins), flavourings (contain egg, milk, celery), acid (citric acid), glucose syrup, milk protein.	16-05-2025	14-03-2023

## Appendix B - Analytical Methods

**Nitrogen:** NMKL 6:2003. The total content of organic nitrogen is determined according to the Kjeldahl principle. Expanded uncertainty: 5%.

**Amino acids:** ISO 13903:2005. Methionine and cysteine: Oxidation with hydrogen peroxide and formic acid at low temperature, followed by acid hydrolysis using aqueous hydrochloric acid. Amino acids are separated using an amino acid analyser and detected by post-column derivatisation with ninhydrin reagent at 440 and 570 nm. All other amino acids: Hydrolysed in aqueous hydrochloric acid and separated using an amino acid analyser. Spectrophotometric detection is carried out using post-column derivatisation with ninhydrin reagent at 440 and 570 nm. Expanded uncertainty: 14%, EU 152/2009.

**Tryptophan:** Alkaline hydrolysis, quantified by HPLC. Expanded uncertainty: 10%.

**Fat:** ISO 11085:2015. The sample is boiled in hydrochloric acid. The washed and dried residue is extracted with petroleum ether. The solvent is evaporated, and the residue is dried and weighed. Expanded uncertainty: 6%.

**Fatty acids:** AOCS Ce 1f-96 (2009). The sample is boiled in hydrochloric acid, and the fat is extracted using a mixture of diethyl ether and petroleum ether. The extract is treated with sodium hydroxide and boron trifluoride in methanol to form fatty acid methyl esters (FAMES), which are analysed by GC-FID. C17:0 is used as internal standard. Expanded uncertainty: 10%.

**Cholesterol:** Internal method. After saponification, cholesterol is extracted with butyl methyl ether, followed by silylation and determination by GC-FID. Expanded uncertainty: 15%.

**Dietary fibre:** AOAC 2011.25. In-house method based on AOAC 2011.25 and determines dietary fibre fractions as SDFS, SDFP and IDF, when applicable. The method determines dietary fibre fractions as SDFS, SDFP and IDF. Water-insoluble dietary fibre (IDF), water-soluble dietary fibre that precipitates in 78% aqueous ethanol (SDFP), and dietary fibre remaining soluble in 78% aqueous ethanol (SDFS) are quantified.

**Sugars:** Sugars are separated by ion chromatography using NaOH as eluent and detected by pulsed amperometric detection. Internal method. Expanded uncertainty: 96–111%.

**Starch:** Determined using an R-Biopharm enzymatic kit method.

**Dry matter:** NMKL 23:1991. Total dry matter content is determined by evaporation of water from the sample by heating at constant temperature. Expanded uncertainty: 5%.

**Ash:** NMKL 173:2005. The sample is ashed at 525–550 °C and the ash is weighed. Expanded uncertainty: 4%.

**Retinol (Vitamin A):** EN 12823-1:2000. Alkaline hydrolysis using ethanolic potassium hydroxide. Extraction with hexane:ethyl acetate. Separation and quantification by NP-HPLC-UV (325 nm). External standard. Limit of quantification: 21 µg/100 g.

**β-Carotene (Vitamin A):** Adaptation of EN 12823-2:2000. All-trans-β-carotene is extracted, separated by RP-HPLC and quantified by UV/DAD detection at 450 nm. External standard. Limit of quantification: 5 µg/100 g. Expanded uncertainty: 28%.

**Vitamin D (vitamin D<sub>3</sub>, 25-hydroxyvitamin D<sub>3</sub>, vitamin D<sub>2</sub>, 25-hydroxyvitamin D<sub>2</sub>):** Loznjak, Barnkob & Jakobsen, Food Chemistry 357 (2021). Alkaline hydrolysis, liquid-liquid extraction, clean-up by solid-phase extraction, and analysis by RP-LC-ESI-MS/MS. <sup>13</sup>C-labelled internal standards.

**α-Tocopherol (Vitamin E):** EN 12822:2014. Alkaline hydrolysis followed by NP-HPLC with fluorescence detection (Excitation/Emission: 290/327 nm). External standard. Expanded uncertainty: 16%.

**Vitamin K (phylloquinone and menaquinones MK-4 to MK-10):** Jensen et al., 2022, modified to use APCI instead of ESI. Internal standards d<sub>7</sub>-phylloquinone, d<sub>7</sub>-menaquinone-4, d<sub>7</sub>-menaquinone-7, and d<sub>7</sub>-menaquinone-9 are added. Extraction by boiling in 2-propanol, followed by evaporation to dryness and enzymatic fat degradation using lipases. Clean-up by liquid-liquid extraction and silica SPE. Separation, detection and quantification by LC-APCI-MS/MS.

**Thiamine (including hydroxyl-2-ethylthiamin):** EN 14122:2014. Acid hydrolysis, separation by RP-HPLC and quantification by fluorescence detection (Excitation/Emission: 368/440 nm) after post-column oxidation to thiochrome. External standard. Molecular weight: 265.36. Expanded uncertainty: 16%.

**Riboflavin:** EN 14152:2003. Acid hydrolysis, enzymatic treatment, separation by RP-HPLC and quantification by fluorescence detection (Excitation/Emission: 468/520 nm). External standard. Method adapted to quantify riboflavin and riboflavin-5-phosphate separately. Expanded uncertainty: 16%.

**Pyridoxine:** EN 14164:2014. Acid extraction followed by phosphatase treatment. Pyridoxamine is converted to pyridoxal using glyoxylic acid and Fe<sup>2+</sup> as catalyst, then reduced to pyridoxine by sodium borohydride under alkaline conditions. Pyridoxine is quantified by RP-HPLC with fluorescence detection (Excitation/Emission: 290/395 nm). Molecular weight: 169.18. External standard. Expanded uncertainty: 14%.

**Niacin:** EN 15652:2009. Nicotinic acid and nicotinamide are extracted in dilute hydrochloric acid at 100 °C, separated by RP-HPLC and quantified by fluorescence detection (Excitation/Emission: 322/380 nm) after post-column reaction with hydrogen peroxide catalysed by Cu(II) ions under UV radiation (365 nm). Niacin is reported as the sum of nicotinic acid and nicotinamide. Molecular weight (nicotinic acid): 123.11. Expanded uncertainty: 14%.

**Biotin:** LST AB 266.1:1995. Biotin is extracted by acid hydrolysis in an autoclave. After dilution with basal medium lacking biotin, the growth response of *Lactobacillus plantarum* (ATCC 8014) is measured turbidimetrically and compared with calibration solutions. Expanded uncertainty: 24%.

**Pantothenic acid:** AOAC 2012.16. Determined by LC-MS/MS using isotope dilution. Expanded uncertainty: 20%.

**Folates:** NMKL 111:1985. Folate is extracted in an autoclave using buffer solution followed by enzymatic digestion with human plasma and pancreatin. After dilution with basal medium lacking folic acid, the growth response of *Lactobacillus rhamnosus* (ATCC 7469) is measured turbidimetrically and compared with calibration solutions. Limit of quantification: 5 µg/100 g. Expanded uncertainty: 30%.

**Cobalamin (Vitamin B12):** AOAC 952.20. Cobalamins are extracted using sodium phosphate dibasic, citric acid and sodium bisulfite, followed by autoclaving for 10 minutes at 121 °C. The extract is pH-adjusted to pH 6.0, and the growth response of *Lactobacillus leichmannii* is measured and compared with cyanocobalamin calibration solutions. Expanded uncertainty: 30%.

**Vitamin C (ascorbic acid and dehydroascorbic acid):** Food Chemistry 94 (2006). Extraction in an aqueous solution of trichloroacetic acid and tris(2-carboxyethyl)phosphine (TCEP). TCEP reduces dehydroascorbic acid to ascorbic acid. Analysis by HPLC with UV detection at 265 nm. Expanded uncertainty: 10%.

**Minerals (sodium, potassium, calcium, magnesium, phosphorus, iron, copper, zinc, manganese, selenium, chromium, molybdenum):** EN 13805:2014 / EN ISO 17294:2016. Pressure digestion followed by ICP-MS analysis.

**Iodine:** DS EN ISO 15111:2007. Determination of iodine by ICP-MS.

## Appendix C – Macronutrients including Dietary Fiber, Sugars, and Starch

Soup type	Sample number	Nitrogen	Fat	Dry matter	Ash	Dietary fibre			Sugars <sup>1</sup>				Total	Starch
						IDF	SDFP	SDFS	Fructose	Glucose	Lactose	Sucrose		
						g/100 g			g/100 g					
Asparagus soup, shelf stable	2302-POOL-04	0.09	2.1	7.9	0.81	<0.2	<0.2	<0.3	<0.2	<0.2	0.4	0.3	0.7	2.5
Beef soup, frozen	2302-POOL-01	0.07	0.9	4.7	0.68	<0.3	<0.2	n.a. <sup>2</sup>	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5
Chicken soup, frozen	2302-POOL-02	0.06	0.6	2.6	0.69	<0.3	<0.2	n.a. <sup>2</sup>	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5
Curry soup, frozen	2302-10-01	0.38	6.6	15.8	1.16	0.6	<0.2	<0.3	0.3	<0.2	0.2	<0.2	0.5	3.2
Curry soup, shelf stable	2302-POOL-03	0.22	3.9	13.3	1.34	0.3	<0.2	0.8	0.6	0.5	1.2	0.7	3.0	1.0
Goulash soup, frozen	2302-09-01	0.49	0.4	9.9	1.29	0.5	0.3	0.4	0.4	0.5	<0.2	0.4	1.3	2.5
Tomato soup, chilled	2302-POOL-06	0.17	2.3	11.4	1.62	1.1	0.6	<0.3	<0.2	<0.2	<0.2	1.1	1.1	1.2
Tomato soup, frozen	2302-POOL-05	0.23	3.3	12.7	1.40	0.6	0.3	<0.3	1.3	1.3	0.3	0.8	3.6	1.6
Tomato soup, reconstituted	2302-POOL-08	0.15	0.7	8.9	1.20	0.4	0.2	<0.3	0.7	0.7	0.5	1.1	3.0	1.7
Tomato soup, shelf stable	2302-POOL-07	0.18	2.6	11.3	1.20	0.5	0.3	0.4	1.1	1.2	0.5	1.1	3.9	1.0

<sup>1</sup> Content of maltose was below <0.2 g/100 g in all samples

<sup>2</sup> AOAC 2011.25 could not be used; therefore AOAC 991.43 was used, which does not include determination and quantification of SDFS.

Values reported as n.a. reflect limitations of the applied analytical method and indicate that specific dietary fibre fractions were not quantified. Values reported as below the analytical limits of quantification, indicate very low concentrations that could not be reliably quantified.

## Appendix D – Vitamins

Soup type	Vitamin A			Vitamin E	Vitamin K		
	Retinol	$\beta$ -carotene, trans $\mu\text{g}/100\text{ g}$	$\beta$ -carotene, cis	$\alpha$ -tocopherol $\text{mg}/100\text{ g}$	PK	MK-4 $\mu\text{g}/100\text{ g}$	MK-7
Asparagus soup, shelf stable	<21	9.0	<5	0.54	1.6	<0.1	0.10
Beef soup, frozen	<21	601	12	<0.08	1.1	0.2	<0.1
Chicken soup, frozen	<21	264	19	<0.08	0.7	1.3	<0.1
Curry soup, frozen	32	96	14	0.61	1.9	9.4	0.21
Curry soup, shelf stable	25	125	46	0.38	3.2	0.8	0.17
Goulash soup, frozen	<21	82	53	0.33	0.9	0.6	0.34
Tomato soup, chilled	<21	255	145	1.14	4.2	0.7	0.14
Tomato soup, frozen	25	318	175	0.98	3.5	1.2	0.18
Tomato soup, reconstituted	<21	117	50	0.61	1.3	<0.1	0.11
Tomato soup, shelf stable	<21	199	97	0.99	6.6	0.7	0.16

Vitamin D (vitamin D<sub>3</sub>, vitamin D<sub>2</sub>, 25-hydroxyvitamin D<sub>3</sub> and 25-hydroxyvitamin D<sub>2</sub>) was below the limit of quantification (0.05  $\mu\text{g}/100\text{ g}$ ). Vitamin K as menaquinone-5 and menaquinone-9 was below the limit of quantification at 0.1  $\mu\text{g}/100\text{ g}$ , while menaquinone-6, -8 and -10 were below the limit of quantification at 0.2  $\mu\text{g}/100\text{ g}$ .

Soup type	Vitamin B								Vitamin C
	Thiamine (B1) $\text{mg}/100\text{ g}$	Riboflavin (B2) $\text{mg}/100\text{ g}$	Niacin $\text{mg}/100\text{ g}$	Pyridoxine (B6) $\text{mg}/100\text{ g}$	Pantothenic acid $\text{mg}/100\text{ g}$	Biotin $\mu\text{g}/100\text{ g}$	Folate $\mu\text{g}/100\text{ g}$	Cobalamin (B12) $\mu\text{g}/100\text{ g}$	Ascorbic acid $\text{mg}/100\text{ g}$
Asparagus soup, shelf stable	<0.015	0.059	0.19	<0.01	0.378	1.3	5.3	0.036	<0.5
Beef soup, frozen	0.015	0.020	0.15	0.017	0.036	<1	5.2	0.026	<0.5
Chicken soup, frozen	0.021	0.017	0.24	0.022	0.074	<1	5.5	0.041	<0.5
Curry soup, frozen	<0.015	0.031	0.59	0.036	0.137	1.3	6.0	0.044	4.0
Curry soup, shelf stable	<0.015	0.046	0.19	0.022	0.130	1.8	<5	0.046	<0.5
Goulash soup, frozen	0.027	0.054	0.44	0.062	0.107	2.2	20.7	0.191	2.8
Tomato soup, chilled	0.017	0.020	0.50	0.048	0.044	3.1	<5	0.035	<0.5
Tomato soup, frozen	<0.015	0.043	0.72	0.049	0.143	3.6	<5	0.130	0.6
Tomato soup, reconstituted	0.018	0.036	0.31	0.035	0.064	2.5	<5	0.053	2.4
Tomato soup, shelf stable	0.030	0.039	0.44	0.039	0.063	3.2	5.7	0.053	n.a.

Several vitamins were present at concentrations below their respective limits of quantification. Reported values below LOQ reflect analytical detection limits and should not be interpreted as absence. Differences in LOQ between vitamins and vitamers are method-dependent.

## Appendix E – Minerals

Soup type	Sodium mg/100 g	Potassium mg/100 g	Calcium mg/100 g	Magnesium mg/100 g	Phosphorus mg/100 g	Iron mg/100 g	Copper mg/100 g	Zinc mg/100 g
Asparagus soup, shelf stable	320	34	13	2.8	29	0.08	0.011	0.07
Beef soup, frozen	285	31	7	2.0	9	0.44	0.006	0.04
Chicken soup, frozen	260	37	6	2.2	11	0.05	0.006	0.03
Curry soup, frozen	375	80	14	7.0	29	0.27	0.045	0.11
Curry soup, shelf stable	395	110	43	8.5	51	0.29	0.027	0.15
Goulash soup, frozen	405	110	11	7.5	32	0.50	0.036	0.67
Tomato soup, chilled	460	210	17	10.0	23	0.33	0.054	0.12
Tomato soup, frozen	360	250	20	12.0	33	0.34	0.051	0.12
Tomato soup, reconstituted	315	200	17	7.6	23	0.17	0.029	0.10
Tomato soup, shelf stable	305	190	25	10.4	32	0.37	0.036	0.12

Soup type	Iodine µg/100 g	Manganese mg/100 g	Chromium µg/100 g	Selenium µg/100 g	Molybdenum µg/100 g
Asparagus soup, shelf stable	6.0	<0.02	<2	<1	1.5
Beef soup, frozen	<5	<0.02	<2	<1	<1
Chicken soup, frozen	<5	<0.02	<2	<1	<1
Curry soup, frozen	<5	0.074	<2	1.7	2.7
Curry soup, shelf stable	<5	0.059	<2	<1	2.7
Goulash soup, frozen	<5	0.050	2.7	<1	1.5
Tomato soup, chilled	11	0.073	2.7	<1	4.2
Tomato soup, frozen	<5	0.085	2.1	<1	2.4
Tomato soup, reconstituted	13	0.052	<2	<1	2.2
Tomato soup, shelf stable	<5	0.060	<2	<1	3.3

## Appendix F – Amino Acids

Soup type	Isoleucine g/100 g	Leucine g/100 g	Lysine g/100 g	Methionine g/100 g	Cysteine g/100 g	Phenylalanine g/100 g	Tyrosine g/100 g	Threonine g/100 g	Tryptophan g/100 g
Asparagus soup, shelf stable	<0.035	0.038	0.029	<0.024	0.011	<0.031	<0.023	0.020	<0.010
Beef soup, frozen	<0.035	0.019	0.021	<0.024	<0.006	<0.031	<0.023	0.012	<0.010
Chicken soup, frozen	<0.035	0.018	0.020	<0.024	<0.006	<0.031	<0.023	0.012	<0.010
Curry soup, frozen	0.106	0.189	0.188	0.040	0.025	0.104	0.076	0.103	0.030
Curry soup, shelf stable	0.058	0.114	0.099	0.024	0.013	0.061	0.054	0.055	0.017
Goulash soup, frozen	0.138	0.238	0.254	0.043	0.029	0.128	0.095	0.138	0.033
Tomato soup, chilled	<0.035	0.043	0.043	<0.024	0.010	0.033	<0.023	0.031	<0.010
Tomato soup, frozen	<0.035	0.057	0.058	<0.024	0.013	0.044	0.024	0.037	<0.010
Tomato soup, reconstituted	0.035	0.062	0.056	<0.024	0.011	0.038	0.028	0.036	0.010
Tomato soup, shelf stable	0.038	0.066	0.061	<0.024	0.011	0.043	0.031	0.041	0.011

Soup type	Valine g/100 g	Arginine g/100 g	Histidine g/100 g	Alanine g/100 g	Aspartic acid g/100 g	Glutamic acid g/100 g	Glycine g/100 g	Proline g/100 g	Serine g/100 g
Asparagus soup, shelf stable	0.029	0.021	<0.02	0.024	0.050	0.118	<0.019	0.036	0.026
Beef soup, frozen	0.016	0.026	<0.02	0.031	0.036	0.062	0.055	0.033	0.018
Chicken soup, frozen	<0.016	0.021	<0.02	0.025	0.035	0.068	0.036	0.022	<0.016
Curry soup, frozen	0.116	0.149	0.073	0.138	0.237	0.381	0.123	0.109	0.102
Curry soup, shelf stable	0.073	0.068	0.033	0.053	0.128	0.307	0.033	0.107	0.069
Goulash soup, frozen	0.153	0.203	0.080	0.207	0.334	0.547	0.217	0.153	0.134
Tomato soup, chilled	0.032	0.041	<0.02	0.046	0.153	0.380	0.029	0.024	0.034
Tomato soup, frozen	0.038	0.052	0.032	0.074	0.169	0.378	0.088	0.061	0.044
Tomato soup, reconstituted	0.041	0.031	0.021	0.048	0.133	0.335	0.025	0.051	0.042
Tomato soup, shelf stable	0.046	0.039	0.025	0.055	0.164	0.382	0.028	0.052	0.048

The content of ornithine was <0.05 g/100 g and the content of hydroxyproline was <0.2 g/100 g (LOQ) in all samples. Analysis of hydroxyproline was not performed under accreditation.

## Appendix G – Fatty Acids

Soup type	C4:0	C10:0	C12:0	C14:0	C16:0	C18:0	C18:1 n-9	C18:2 n-6	Cholesterol
	g/100 g								mg/100 g
Asparagus soup, shelf stable	<0.1	<0.1	<0.1	<0.1	0.31	<0.1	0.93	0.26	1.8
Beef soup, frozen	<0.1	<0.1	<0.1	<0.1	0.18	0.14	0.32	<0.1	<1
Chicken soup, frozen	<0.1	<0.1	<0.1	<0.1	0.12	<0.1	0.21	0.10	1.6
Curry soup, frozen	0.12	<0.1	0.13	0.36	1.94	0.43	1.71	0.40	15.1
Curry soup, shelf stable	<0.1	0.11	0.41	0.38	0.82	0.26	0.73	0.14	10.0
Goulash soup, frozen	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.8
Tomato soup, chilled	<0.1	<0.1	<0.1	0.18	0.58	0.17	0.55	0.11	5.7
Tomato soup, frozen	0.10	<0.1	0.11	0.33	0.90	0.29	0.50	<0.1	10.9
Tomato soup, reconstituted	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.2
Tomato soup, shelf stable	<0.1	<0.1	<0.1	0.17	0.50	0.17	0.73	0.21	5.4

In addition to the fatty acids listed in the table, the following fatty acids were also analysed but found to be below the quantification limit of 0.1 g per 100 g: C6:0; C8:0; C13:0; C15:0; C20:0; C21:0; C22:0; C23:0; C24:0; C12:1 n-1; C14:1 n-5; C15:1 n-5; C16:1 n-7; C17:1 n-7; C18:1 n-12; C18:1 n-7; C20:1 n-11; C20:1 n-9; C22:1 n-11; C22:1 n-9; C24:1 n-9; C18:3 n-6; C18:3 n-3; C18:4 n-3; C20:2 n-6; C20:3 n-6; C20:3 n-3; C20:4 n-6; C20:5 n-3; C22:2 n-6; C22:3 n-3; C22:4 n-6; C22:5 n-6; C22:5 n-3; C22:6 n-3; C14:1 trans; C16:1 trans; C18:1 trans 1; C18:1 trans 2; C18:1 trans 3; C20:1 trans; C22:1 trans; C18:2 trans 1; C18:2 trans 2; C18:3 trans 1; and C18:2 trans 4.

For samples with low total fat content, several individual fatty acids were therefore below the analytical limit of quantification. Consequently, calculated saturated fat content and related energy contributions may be underestimated. Values reported as zero do not indicate absence of fatty acids but reflect analytical limitations at low concentrations.

## Appendix H – Preparation Protocol for Dry-Mix Tomato Soup

### Tilberedningsmetodik for tørret suppe

#### 2302-08-01 og 2302-08-02. Tomatsuppe/Tomato Soup fra Knorr

Ét brev (78 g) pulver bruges til én prøve:

1. Pisk posens indhold (78 g pulver) i 9 dl kold *demineraliseret* vand i en gryde.
2. Kog op under omrøring og lad suppe småkoge i **5 minutter**.
3. Tilsæt 1 dl mælk (1.5% fedt). Kog op under omrøring.



#### 2302-08-03 og 2302-08-04. Tomato. Cup a Soup fra Knorr

Tre breve (54 g) pulver bruges til én prøve:

1. Hæld posernes indhold i en kop/skål
2. Tilsæt 525 ml kogende *demineraliseret* vand
3. Rør rundt og lad suppen trække i **1 minut**.



#### 2302-08-05. Tomatsuppe fra Coop

Ét brev (95 g) pulver bruges til én prøve:

1. Hæld 9 dl *demineraliseret* vand i en gryde.
2. Pisk pulveret ude i vandet.
3. Skal småkoge ca. **5 minutter** under konstant omrøring.
4. Tilsæt 1 dl mælk (1.2% fedt) og kog op under omrøring.





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