



SHELF LIFE AND STORAGE

SHELF LIFE

Vegetable oils and fats are important natural ingredients for most food products. They are not only an important nutrient, but also essential for making tasty food products. At SD Guthrie International Zwijndrecht Refinery B.V. we manufacture vegetable oils and fats products which can be used in a wide range of food applications. In order to guarantee their applicability in a large number of food products our oils and fats have a bland taste, bright colour, suitable crystallisation and melting behaviour right after manufacturing.

The Codex Alimentarius defines shelf-life as the period during which a food product maintains its microbiological safety and suitability at a specified storage temperature and where appropriate, under specified storage and handling conditions. Next to that, shelf-life for foodstuffs is defined in the European legislation as the "date of minimum durability". The General Principles of Food Hygiene defines Food Safety as the assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use. On the other hand, Food Suitability is defined as the assurance that food is acceptable for human consumption according to its intended use.

Oils and fats naturally undergo chemical and physical changes caused by light, oxygen, temperature and water. These changes could impact their functionality and organoleptic properties while food safety is still guaranteed. However, the degree of change acceptable to our customers and to consumers will depend on many factors like type of food product, processing, country of consumption, etc. Hence, the suitability of our products will be the result of a combination of choices and depends on the specific application at our customers. Therefore, at SD Guthrie International Zwijndrecht Refinery B.V. we relate shelf life of our products to Food Safety.

Refined vegetable oils and fats have basically a long shelf life if stored dry in closed undamaged packaging, as microorganisms cannot grow in the product, and all potential chemical contaminants have been removed in the refining process. This means that food safety, hence shelf life, of the oil or fat product for most applications is typically longer than its suitability for certain applications.

FOOD SUITABILITY

Suitability of oils and fats is determined by customers based on specific requirements of its food application which result in food ingredient specifications. Such specifications are guaranteed ex-works, at the moment of manufacturing. Preservation of the original properties depends on the type of product and it can be influenced by the type of packaging and storage conditions. As product usage and storage at the customer site is beyond our control, SD Guthrie International Zwijndrecht Refinery B.V. can only advise on product suitability. Therefore, all our customers are advised to conduct their own tests to ensure the suitability of the product for their specific application.

Many customers relate shelf life to parameters such as free fatty acids (FFA) and/or peroxide value (POV). However, these values increase due to natural changes caused by light, oxygen, temperature and water and they do not impact food safety of oils and fats. For example, the acceptable acidity (FFA concentration) in oils and fats can vary depending on its intended use. Refined sunflower oil used by consumers has a maximum acidity of 0.2%, light yellow colour and slightly sweet taste. On the contrary, virgin olive oil has an maximum acidity of 2% and it is appreciated by many consumers for its good taste.

RECOMMENDED STORAGE CONDITIONS

Vegetable oils and fats produced at SD Guthrie International Zwijndrecht Refinery B.V. have a maximum specification of 0.1% FFA, 1 meq O₂/kg oil POV and a bland taste (ex-works) in order to guarantee their suitability in a wide variety of food applications. Storage temperature, light, water and oxygen are important factors that influence product quality stability and preservation of the original functionality and organoleptic properties.

To assure the highest product quality and to preserve the original functionality and organoleptic properties as much as possible we recommend our customers to follow the below mentioned storage conditions. This information can also be found on our product data sheets.

BULK PRODUCTS

The product will be delivered in stainless steel containers (for food stuff only) at temperatures of 10-25°C above melting point (minimum loading temperature at our factory is 45-50°C. It is recommended to load the product in an empty clean stainless steel tank and store it under a nitrogen blanket at 10°C above melting point. Shelf life under the mentioned conditions is 2-4 weeks.

PRODUCTS IN CARDBOARD BOXES AND PAPER BAGS

It is recommended to store the product in its original closed packaging in a dry (relative humidity lower than 65%) and cool storage area (below 20°C) away from sunlight and odoriferous materials. Shelf life under mentioned conditions is 12 months for cardboard boxes and 18-24 months for our flake products (Prifex range) in paper bags. For our powders in cardboard boxes or paper bags the shelf life is 12 months.

PRODUCTS IN DRUMS AND (HEATABLE) IBC

It is recommended to store the product in its original closed packaging in a dry (relative humidity lower than 65%) and cool storage area (below 20°C) away from sunlight and odoriferous materials and with no sequential heating. Shelf life under mentioned conditions is 12 months.

OVERVIEW SHELF LIFE AND RECOMMENDED STORAGE CONDITIONS FOR REFINED OILS

Packaging	Shelf life	Recommended storage conditions
Bulk	2-4 weeks	10-15°C above melting point
Cardboard boxes	12 months	Below 20°C
Paper bags with flakes	18-24 months	Below 20°C
Drums & (heatable) IBC	12 months	Below 20°C
Powders in cardboard boxes/ paper bags	12 months	Below 20°C

The product specification is guaranteed ex-works SD Guthrie International Zwijndrecht B.V. SD Guthrie International Zwijndrecht Refinery B.V. relates shelf life to the food safety of the product. SD Guthrie International Zwijndrecht Refinery B.V. endeavours to keep the information provided to you up-to-date and correct but we make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the information provided for any purpose. SD Guthrie International Zwijndrecht Refinery B.V. will not be, nor accept, any liability for any loss or damage whatsoever arising from the use of this information provided.

References:

Codex Alimentarius:

- General Principles of Food Hygiene – (CAC/RCP 1-1969, Rev. 4-2003)
- Codex Standard for Edible Fats and Oils not Covered by Individual Standards (CODEX STAN 19-1981, Rev. 2 - 1999)
- Codex Standard for Olive Oils and Olive Pomace Oils (CODEX STAN 33-1981)
- Codex Standard for Named Vegetable Oils (CODEX STAN 210-1999)
- Recommended international code of practice for the storage and transport of edible fats and oils in bulk (CAC/RCP 36 – 1987, Rev.4-2011)
- Code of Hygiene Practice for Milk and Milk Products (CAC/RCP 57-2004)

European Legislation:

- Directive 2000/13/EC on the labelling, presentation and advertising of foodstuffs



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