Appendix III

PROPOSED REVISION TO THE *CODE OF PRACTICE FOR THE STORAGE AND TRANSPORT OF EDIBLE FATS AND OILS IN BULK* (CXC 36-1987)

(Adoption)

Proposed changes to relevant provisions are indicated in **bold** and underline, and deletions in strikethrough

Part A

APPENDIX 2 - Codex Alimentarius List of Acceptable Previous Cargoes

List of acceptable previous cargoes

No.	Substance	CAS No.
1	Acetic anhydride (ethanoic anhydride)~~[1]~~**[3]**	108-24-7
2	1,4-Butanediol (1,4-butylene glycol)~~[1]~~	110-63-4
3	Butyl acetate, sec-~~[1]~~	105-46-4
4	Butyl acetate, tert-~~[1]~~	540-88-5
5	Cyclohexane (hexamethylene; hexanaphthene; hexahydrobenzene) ~~[1]~~**[3]**	110-82-7
6	Iso decyl alcohol (isodecanol)~~[1]~~	25339-17-7
7	Myristyl alcohol (1-tetradecanol; tetradecanol)~~[1]~~	112-72-1
8	Iso nonyl alcohol (isononanol)~~[1]~~	27458-94-2
9	Tridecyl alcohol (I-tridecanol)~~[1]~~	27458-92-0
10	Methyl tertiary butyl ether (**MTBE**)~~[1]~~	1634-04-4
~~11~~	~~Montan wax~~	~~8002-53-7~~
12	Iso-Octyl alcohol (isooctanol)~~[1]~~	26952-21-6
13	Pentane~~[1]~~	109-66-0
14	1,3-Propylene glycol~~[1]~~	504-63-2
15	Propylene tetramer (tetrapropylene; dodecane)~~[1]~~	6842-15-5
16	Soybean oil epoxidized~~[1]~~	8013-07-8
17	Mineral oil, medium and low viscosity, class II ~~[1]~~ **(highly refined food-grade)**	
18	Mineral oil, medium and low viscosity, class III ~~[1]~~ **(highly refined food-grade)**	
19	Calcium ammonium nitrate solution~~[1]~~	6484-52-2
20	Calcium nitrate (CN-9) solution~~[1]~~	35054-52-5
21	Unfractionated fatty alcohol mixture or mixtures of fatty alcohols from natural oils and fats~~[1]~~	
22	Calcium lignosulphonate liquid (lignin liquor; sulphite lye)[1]	8061-52-7
23	**Ethyl tertiary butyl ether (ETBE)**	**637-92-3**

[1] ~~under review by FAO and WHO~~ pending further evaluation by JECFA

[3] under review pending submission of data on impurities.

Section 2.1.3 Contamination

1	The substance is transported/stored in an appropriately designed system with adequate cleaning routines, including the verification of the efficacy of cleaning between cargoes, followed by effective inspection and recording procedures.
2	Residues of the substance in the subsequent cargo of fat or oil should not result in adverse human health effects. The acceptable daily intake (ADI) (or tolerable daily intake (TDI)) of the substance should be greater than or equal to ~~0.1~~ **0.3** mg/kg bw/day. Substances for which there is no numerical ADI (or TDI) should be evaluated on a case-by-case basis. **Where there are additional sources of dietary exposure to the previous cargo chemical substances, they should be considered in the exposure assessment.**
3	The substance should not be or contain a known food allergen unless the identified food allergen can be adequately removed by subsequent processing of the fat or oil for its intended use.
4	Most substances do not react with edible fats and oils under normal shipping and storage conditions. However, if the substance does react with edible fats and oils, any known reaction products must comply with criteria 2 and 3.

Part B

Assignment of CAS Number to substances in Appendix 2 - Codex Alimentarius List of Acceptable Previous Cargoes

Substance (synonyms in bracket)	CAS Number
Fructose	**57-48-7**
Hydrogen peroxide	**7722-84-1**
Urea ammonium nitrate solution (UAN)	**15978-77-5**

SECTION 2.1.3 Contamination

Undesirable contamination may be from residues of a previous material handled in the equipment, dirt, rain, seawater or through the accidental addition of a different product. In storage installations and ships, particular difficulty may be experienced ensuring cleanliness of valves and pipelines, particularly where they are common for different tanks. Contamination is avoided by good design of the systems, adequate cleaning routines and an effective inspection service, and on ships by the carriage of oils in segregated tank systems in which the previous cargoes are included in the Codex list of acceptable previous cargoes in Appendix 2 of this code.

Contamination is also avoided by the rejection of tanks which have carried, as a last cargo, products which are included on the Codex list of banned immediate previous cargoes in Appendix 3 of this code.

Therefore, when considering previous cargoes for the storage and transport of edible fats and oils in bulk, Appendices 2 and 3 should be read together as part of this code.

Previous cargoes not on the Codex lists of acceptable or banned cargoes are only to be used if agreed upon by competent authorities of the importing countries.

Until both lists are completed, practitioners may find the lists and data referred to in the bibliography in Appendix 4 provide relevant guidance.

When determining whether a substance is acceptable as an immediate previous cargo, competent authorities should consider the following criteria:

APPENDIX 2: Codex Alimentarius List of Acceptable Previous Cargoes

Notes

(1) Where it is not possible to transport edible fats and oils in bulk in tankers reserved for foodstuffs only, the possibility of contamination incidents is reduced by carriage in tankers in which the previous cargo is included in the list below. Application of this list must be combined with: good design of the system; adequate cleaning routines; and, effective inspection procedures (see Section 2.1.3 of the code).

(2) Previous cargoes not on the list are only acceptable if they are agreed upon by the competent authorities of the importing country (see Section 2.1.3 of the code).

(3) **Restrictions for substances beyond the immediate previous cargoes must be followed;**
- **leaded products shall not be carried as 2nd or 3rd previous cargoes**
- **ethylene dichloride and styrene monomer shall not be carried as the 2nd or 3rd previous cargoes in organically coated tanks.**

(4) The list below is not necessarily a final list but is subject to review and possible amendment to take account of scientific or technical developments. Additional substances are being considered for inclusion in the list and may be included as acceptable following an appropriate risk assessment. This should include consideration of:
- Toxicological properties, including genotoxic and carcinogenic potential (account may be taken of the opinions of the Joint FAO/WHO Expert Committee on Food Additives (JECFA) or other recognised bodies).

- Efficacy of cleaning procedures between cargoes.
- Dilution factor in relation to the potential amount of residue of the previous cargo and any impurity which the previous cargo might have contained, and the volume of oil or fat transported.
- Solubility of possible contaminating residues.
- Subsequent refining/processing of the oil or fat.
- Availability of analytical methods for the detection of trace amounts of residues or for verifying the absence of contamination.
- Reactivity of oils/fats with contaminating residues.

APPENDIX 3: Codex Alimentarius List of Banned Immediate Previous Cargoes

Footnote

*Banned as ~~any one of the last two~~ **the 2nd or 3rd previous cargoes** in organically coated tanks and as the ~~last~~ **immediate previous** cargo in stainless steel and inorganically coated tanks.

Editorial changes

Substance (synonyms in bracket)	**CAS Number**
Ethylene oxide ~~(E0)~~ **(EO)**	75-21-8

APPENDIX 4:- BIBLIOGRAPHY

Federation of Oils, Seeds and Fats Associations (FOSFA International). ~~2021~~. In: *FOSFA*. London. FOSFA International List of Banned Immediate Previous Cargoes~~. NOVEMBER 1999 (fosfa.org)~~ and **FOSFA International List of Acceptable Immediate Previous Cargoes. Available at Carriage Of Oils And Fats | FOSFA International**