

FOSFA HEATING INSTRUCTIONS IN RESPECT OF BULK SHIPMENT OF OILS AND FATS

(In the following text the word oil shall be understood to mean oil/fat)

1. Shippers shall ensure that the temperature of the oil during delivery into the tank(s) of a ship is that at which the oil is usually handled and where heat is applied that the temperature in no case exceeds that given in the appropriate table.
2. Master shall supply to cargo receivers a statement showing the cargo temperature at loading and a chart on which the daily temperatures after loading have been recorded. The chart shall be signed by the Master or authorised officer.
3. Shippers shall supply the following instructions with regard to heating of oil during the voyage:
 - 3.1 **Ship's tanks fitted with heating coils**
 - 3.1.1 On completion of loading, ship's coils shall be completely covered with oil.
 - 3.1.2 Heating shall be effected by hot water or, where this is impracticable, by low pressure saturated steam. Pressures shall not exceed 1.5 bar gauge.
 - 3.1.3 During the voyage the oil shall be maintained in accordance with the temperatures set out in the Heating Recommendations.
 - 3.1.4 In sufficient time prior to arrival at port of discharge, heat shall be applied gradually to ensure that the temperature of the oil at time of discharge is in accordance with the temperatures set out in the Heating Recommendations. The cargo shall be maintained within this range of temperatures throughout the discharge.
 - 3.1.5 In order to avoid any damage to the quality of the oil, it is essential that heat is applied gradually. A sudden increase in temperature must be avoided as it will almost certainly result in damage to the oil.
 - 3.1.6 The increase in temperature of the oil during any period of 24 hours shall never exceed 5°C.
 - 3.1.7 As far as practicable, top and bottom temperatures shall be maintained at equal levels; the difference between these two temperatures shall never exceed 5°C.
 - 3.1.8 The temperatures referred to above are the average of top, middle and bottom readings. The top reading shall be taken at about 30 cm (one foot) below the surface of the oil. The bottom readings shall be taken:
 - a. In tanks which have bottom coils at 30 cm (one foot) above the level of the coils;
 - b. In tanks which have side coils but no bottom coils, at a point about two feet (60 cm) from the bottom of the tank and about 30 cm (one foot) from the side coils.
 - 3.1.9 The temperatures indicated in 3.1.4 above are applicable under normal conditions ruling at port of discharge. In the event of abnormal conditions (such as extremely low air or water temperatures), receivers, either directly or through their appointed representatives, may vary the temperatures stated and instruct shipowners or their agents accordingly. Details of any such variations shall be duly recorded and advised to shippers or their representatives. If there is more than one receiver of the oil ex one ship's tank:

- a. All receivers from that tank should be in agreement to the proposed variations in the temperatures stated in 3.1.4 above;
- b. Shipper's representatives at port of discharge shall endeavour to reconcile requirements of the individual receivers.

3.2 For tanks with heat exchangers

All instructions under paragraph 3.1 are applicable except for 3.1.1 and in 3.1.8; the bottom temperature should be taken 30 cm (one foot) above tank bottom.

3.3 Bulk oils not normally requiring heating during the voyage

If it is envisaged that the temperature of the oil at the time of discharge will be below the minimum figure indicated in the schedule, the oil must be heated at not more than 5°C per 24 hours until the required discharge temperature is reached.

3.4 Bulk oils shipped in tanks by vessels whose voyages by sea or inland waterway do not exceed 5 days

The oil must be loaded at a temperature which will enable the discharge temperature to be reached by raising the temperature of the oil by not more than 5°C per 24 hours.

FOSFA HEATING RECOMMENDATIONS

OIL TYPE	TEMPERATURES DURING VOYAGE		TEMPERATURES AT DISCHARGE		SEE NOTE
	MIN (°C)	MAX (°C)	MIN (°C)	MAX (°C)	
Castor Oil	20	25	30	35	
Coconut Acid Oil	27	32	40	45	
Coconut Oil	27	32	40	45	
Cottonseed Oil	Ambient		20	25	2
Fish Acid Oil	20	25	35	40	
Fish Oil	20	25	25	30	
Grapeseed Oil	Ambient		15	20	2
Grease	37	42	50	55	
Groundnut Oil	Ambient		20	25	2
Hydrogenated Oils	Various		Various		3
Illipe Butter	37	42	50	55	
Lard	38	45	50	55	
Linseed Oil	Ambient		15	20	2
Maize (Corn) Oil	Ambient		15	20	2
Maize/Soya/Sun Acid Oil	30	35	45	55	
Mixed Soft Rape Acid Oil	20	25	30	35	
Oiticica Oil	24	32	35	40	
Olive Oil	Ambient		15	20	2
Palm Acid Oil	45	50	55	72	
Palm Fatty Acid Distillate	45	50	55	72	
Palm Kernel Acid Oil	27	32	40	45	
Palm Kernel Fatty Acid Distillate	27	32	35	45	
Palm Kernel Oil	27	32	40	45	
Palm Kernel Olein	25	30	30	35	
Palm Kernel Stearin	32	38	40	45	
Palm Oil	32	40	50	55	
Palm Olein	25	30	30	35	
Palm Stearin	40	45	55	70	4
Rapeseed Oil (HEAR Type)	Ambient		15	20	2
Rapeseed Oil (LEAR Type or Canola)	Ambient		15	20	2
Safflower Oil	Ambient		15	20	2
Sesame Oil	Ambient		15	20	2
Sheanut Butter	37	42	50	55	
Soyabean Oil	Ambient		20	25	2
Sunflowerseed Oil	Ambient		15	20	2
Tallow (for voyages of 10 days or less)	Ambient		55	65	2
Tallow	44	49	55	65	

Notes as over page

1. The maximum temperature specified during the voyage is lower than the minimum required for discharge, in some cases by as much as 15°C. Bearing in mind the stipulation contained in paragraph 3.1.6, it should be recognised that in some cases ships officers will need to apply heat a few days prior to arrival in order to reach the appropriate discharge temperature.
2. It is recognised that in some cases the ambient temperatures may exceed the recommended maximum figures shown in the Heating Recommendations.
3. Hydrogenated oils can vary considerably in their slip melting points, which should always be declared. It is recommended that during the voyage, the temperature should be maintained at around the declared melting point and that this should be increased prior to discharge to give a temperature of between 10°C and 15°C above that point to effect a clean discharge.
4. Different grades of palm stearin may have wide variations in their slip melting points and the temperatures quoted may need to be adjusted to suit specific circumstances.