

JIS

This standard was revised in 1, 1995

JAPANESE INDUSTRIAL STANDARD

Hardened Oils and Fatty
Acids for Industrial Use

JIS K 3331-1986



This copy is an English version of Japanese Industrial Standard prepared by Japanese Standards Association, the copyright holder. Any further reproduction without permission is prohibited.

Translation without guarantee
In the event of any doubt arising, the original
standard in Japanese is to be evidence

Translated

by

Japanese Standards Association

This English translation is prepared at the expense of
Japan External Trade Organization (JETRO).

Contents

	Page
1. Scope	1
2. Classification	1
3. Quality	2
4. Sampling Method	3
5. Test Methods	6
5.1 General Matters	6
5.2 Acid Value	6
5.3 Neutralization Value	7
5.4 Saponification Value	8
5.5 Iodine Value	10
5.6 Melting Point	11
5.7 Titer	12
5.8 Color Number (Hazen)	14
5.9 Color Number (Gardner)	15
5.10 Containing Amount	17
6. Marking	20

JAPANESE INDUSTRIAL STANDARD

J I S

Hardened Oils and Fatty Acids for Industrial Use

K 3331-1986

1. Scope

This Japanese Industrial Standard specifies hardened oils and fatty acids for industrial use other than those obtained from animal and vegetable fats and oils to be used for paints, comotics, medical agents, food additives and reagents.

2. Classification

The classification shall be as follows:

(1) Hardened oils for industrial use

(a) No. 1 extreme goods

(b) No. 2 common goods

(2) Fatty acids**(2.1) Fatty acids for industrial use**

(a) No. 1 stearic acid and oleic acid system

(b) No. 2 lauric acid system

(2.2) Stearic acid for industrial use

(a) No. 1 for stabilizer and the like

(b) No. 2 for rubber working and the like

(c) No. 3 for others

(2.3) Oleic acid for industrial use

(a) No. 1 refined goods

(b) No. 2 common goods

(2.4) Simple substance fatty acids

(a) Caprylic acid

Applicable Standards and Corresponding
International Standards: See pages 21 and 22

- (b) Capric acid
- (c) Lauric acid
- (d) Myristic acid
- (e) Palmitic acid
- (f) Stearic acid
- (g) Behenic acid

3. Quality

The quality of hardened oils and fatty acids for industrial use shall be tested according to 5. and the hardened oils for industrial use shall comply with the specifications of Table 1, the fatty acids for industrial use, with those of Table 2, the stearic acid, with those of Table 3, the oleic acid for industrial use, with those of Table 4, and the simple substance fatty acid, with those of Table 5.

Table 1. Hardened Oils for Industrial Use

Test item	No. 1	No. 2
Acid value	5 max.	5 max.
Saponification value	175 to 200	175 to 200
Iodine value	3 max.	50 max.
Melting point °C	57 min.	57 max.
Color number Gardner	3 max.	5 max.

Table 2. Fatty Acids for Industrial Use

Test item	No. 1	No. 2
Neutralization value	195 to 212	254 to 277
Saponification value	197 to 214	258 to 280
Iodine value	40 to 75	5 to 13
Melting point °C	25 to 50	21 to 27
Color number Gardner	8 max.	6 max.

Table 3. Stearic Acid for Industrial Use

Test item	No. 1	No. 2	No. 3
Neutralization value	195 to 215	186 to 210	177 to 210
Saponification value	197 to 217	190 to 215	182 to 215
Iodine value	2 max.	10 max.	10 max.
Melting point, °C	57 min.	52 min.	50 min.
Color number Hazen	200 max.	—	—
Color number Gardner	—	10 max.	15 max.

Table 4. Oleic Acid for Industrial Use

Test item	No. 1	No. 2
Neutralization value	188 to 206	188 to 206
Saponification value	190 to 208	190 to 208
Iodine value	81 to 95	81 to 97
Titer °C	9 max.	12 max.
Color number Hazen	300 max.	—
Color number Gardner	—	12 max.

Table 5. Simple Substance Fatty Acids

Test item	Caprylic acid	Capric acid	Lauric acid	Myristic acid	Palmitic acid	Stearic acid	Behenic acid
Neutralization value	382 to 392	318 to 328	275 to 285	240 to 250	214 to 224	192 to 206	160 to 172
Iodine value	1 max.	1 max.	1 max.	1 max.	1 max.	2 max.	3 max.
Titer °C	12 to 18	29 to 33	41 to 45	50 to 55	58 to 63	63 to 69	74 to 79
Content amount %	95 min.	95 min.	95 min.	95 min.	95 min.	90 min.	80 min.
Color number Hazen	150 max.	150 max.	120 max.	120 max.	120 max.	120 max.	120 max.

4. Sampling Method

4.1 Sampling The sampling shall be carried out according to the type of vessel specified as follows:

- (1) Small Type Vessel (18 l can, drum can, paper bag, etc.)
- (2) Large Type Vessel (Tank, tank lorry, etc.)

4.2 Formation of Lot One lot means, as a rule, the following products to be considered to be same quality.

Those products manufactured in the same batch, those in the same tank, or those filled from the same tank and stored in the same conditions.

4.3 Discrimination of Lots Sample vessels shall be so described with sampling date, lot number that it is able to discriminate the lots for each vessel.

4.4 Sampling and Preparation of Representative Sample Sampling shall be carried out according to the following method depending upon the small type vessel or large type vessel.

- (1) **Small Type Vessel** Extract the number of pieces shown in Table 6 at random according to random number die, random number table, or other suitable method, and take sample from each vessel, and mix according to the ratio of amount of sampling place to make the representative sample.

Table 6. Sampling Number of Pieces of Small Type Vessels

Number of vessels ⁽¹⁾	1 to 10	11 to 25	26 to 50	51 to 75	76 to 100
Sampling number of pieces	1 to 3	3 to 4	4 to 6	6 to 8	8 to 10

Note (1) In the case where number of vessels is not less than 101 pieces, it shall be in accordance with JIS K 2251.

- (2) **Large Type Vessel** In the case of large type vessel, sampling shall be as follows:

- (a) In the case of sampling from vessel, take sample at the place shown in Table 7, and mix by the amount ratio of sampling place to make the representative sample.

Table 7. Sampling Places of Large Type Vessel

	Sampling place
Tanks	Take each one sample in total three samples from the upper, intermediate, lower (depths from the surface of 15 %, 50 %, 85 %) positions
Tank lorry and the like	Take each one sample from intermediate layer of each tank in the tank lorry and the like.

- (b) In the case of sampling from pipe line, take from the line during transferring the liquid at first, intermediate and last time and mix to make representative sample.

- (3) Taking Amount of Representative Sample The taking amount of representative sample shall be 1000 to 1500 ml.

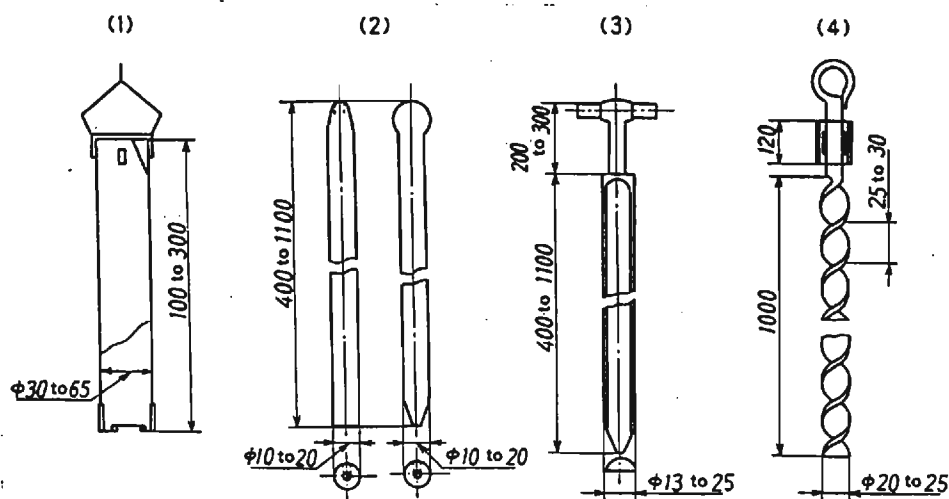
4.5 Sample for Analysis Mix the representative sample thoroughly to make uniform, thereafter, as required, divide into 2 to 3 pieces, put into vessel for analysis sample to seal tightly and take it as the analysis sample. The amount of analysis sample shall be 500 ml.

4.6 Device and Sample Vessel

- (1) Device As to the sampling device, the large type vessel, small type vessel or depending upon the state of sample (solid, liquid, powder, etc.) the device of Fig. 1 shall be used. The material shall be stainless steel or hard glass.

Fig. 1. An Example of Sampler

Unit: mm



- | | |
|-------------------|---|
| (1) Bomb Sampler | For liquid in tank and the like |
| (2) Oil Thief | For liquid in drum and the like |
| (3) Trier | For grain and flake in paper bag and the like |
| (4) Screw Sampler | For solid in drum and the like |
- (2) Sample Vessel for Analysis The sample vessel for analysis shall be capable of sealing tightly and, made of chemicals-resistant material such as glass.

4.7 Cautions to Sampling Generally fuse the solid, or semisolid by warming to make uniform and thereafter take. The warming temperature shall not be made higher than fusing point by 20°C or more so as to prevent variation of quality (acid value, color).