

November 26, 1935

QUALITY OF LINSEED OIL FOR GOVERNMENT USE

This letter circular is for the information of the purchasing officers of the Government.

The iodine number is one of the most important characteristics of linseed oil in determining whether the oil is of good or poor quality. The use of linseed oil of low iodine number is likely to result in a paint which dries slowly and which has a soft film subject to serious injury from dampness.

The Federal specification for linseed oil provides that the oil shall have an iodine number not less than 177. Oil of this quality is available from both domestic and foreign sources. Insistence on this requirement is distinctly to the best interests of the Government.

The Economy Act of March 3, 1933, does not absolutely require that only articles, materials, or supplies of domestic manufacture or origin shall be purchased by the Government, but states clearly that the section of the Act relating to such purchases "shall not apply . . . . if articles, materials, or supplies of the class or kind to be used or the articles, materials, or supplies from which they are manufactured are not mined, produced, or manufactured, as the case may be, in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality".

The American Society for Testing Materials<sup>1</sup> in investi-

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Proc. Am. Soc. Test. Mtls. 9, 141-201 (1909); 10, 113-115 (1910); 11, 195-222 (1911); 13, 372-401 (1913); 15 (Part 1), 224-236 (1915); 16 (Part 1) 233-239 (1915); 17 (Part 1), 377-384 (1917); 18 (Part 1), 299-303 (1918); 21, 334-340 and 613-614 (1921); 24 (Part 1), 432-440 (1924)

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gations extending over a number of years clearly demonstrated that before 1925 oil expressed from flaxseed grown in the



October 16, 1934, showed that 20.5 percent of the samples gave iodine numbers of 177 or above. In approving the exception the Director of the National Bureau of Standards, in a letter of November 20, 1934, to Dr. Alva H. Benton, stated: "Action such as the above has no bearing on the Federal specifications: Government purchasers wish to obtain high quality materials and our records indicate that while the high iodine number type (188) has not been easily obtainable in the last two years, there has been no difficulty in getting the normal (177) type." He also noted that the above quoted manufacturer's analyses indicated that seed marketed later in the season gave better oil. "Over 37 percent of samples dated October 1 to 16 had iodine numbers 177 or over. Therefore it seems probable that the average of the whole U. S. crop will be better than the average so far reported."

Similar statements are made by the linseed oil producers regarding the oil produced from the 1935 United States crop as those that they made in 1933 and 1934, and while we have no detailed information similar to that furnished by the code authorities in 1933 and 1934, it is probable that conditions are very similar and that much oil produced from the 1935 crop will be of low iodine number. Since, however, all evidence available indicates that considerably more than one-fifth of the U. S. production will be oil of iodine number over 177 and the Government does not buy directly or indirectly anything like that proportion of the linseed oil produced, it would seem very unwise for any Government purchaser to accept oil that does not conform to the Federal specifications.

The National Bureau of Standards tested, in the period August 1 to November 15, 1934, twenty-two samples taken from various deliveries to Government agencies in 14 states, the District of Columbia, and Panama Canal Zone. Twenty of these samples had iodine numbers from 177 to 184, averaging 180.5 and the other two gave 175 and 169, respectively. In the period July 1 to November 15, 1935, of 119 samples taken in 36 states, the District of Columbia, and Panama Canal Zone, 112 had iodine numbers from 177 to 193, averaging 184, and 7 had iodine numbers from 166 to 176, averaging 173.

Producers can set aside enough oil from U. S. seed with iodine number of 177 or higher to meet all Government demands. If they are not willing to make this effort, then purchasers should be allowed to accept oil meeting the specification, even though it be made from imported seed.

