JUNE 2004

250

MPOB TT No. 248

PALM-BASED FOOD-GRADE GREASE

by: YEONG, S K; OOI, T L
and SALMIAH AHMAD

MPOB INFORMATION SERIES ISSN 1511-7871

In the past decade, the food processing industry has increased the number of products that it offers as well as the quantities it produces. But today consumers are exerting an ever-increasing pressure on the industry to use suitable lubricants in food processing machines. Risk analyses and HACCP (hazard analysis critical control points) concepts made it possible to identify the friction points where there is a danger of incidental food contact. According to the risk analyses, such friction points may only be lubricated with USDA H1 authorized lubricants (Loderer and Retzer, 1997).

H1 lubes and greases are approved for use where incidental food contact might occur, such as brewery valves. Only certain base stocks and additives are allowed and additive concentrations are also restricted. Only ingredients known as GRAS (generally regarded as safe) or listed by chemical name in the Code of Federal Regulations (under 21 CFR 178.3570 and elsewhere) may be used. H2 lubes and greases are in less restrictive category. It may be used where there is no possibility of food contact, such as closed gearboxes and switches. Additive concentrations are not controlled but should not contain any toxic compounds, no heavy metals and any carcinogenic or mutagenic (TOCCI, 2003).

The palm oil industry is a multibillion ringgit industry. Last year, it contributes about RM 26 billion to the Malaysian economy. Since most of the palm oil and palm oil products ends up in our food chain, therefore it is not surprising that the industry will eventually succumb to the pressure of consumer to use a less hazardous

Figure 1. Palm-based food-grade grease.

form of lubricant to lubricate all friction points that may have incidental contact with food. Recently, MPOB in collaboration with an industrial partner has developed a food-grade grease. Initially this grease is targeted to be used in the palm oil mills and could be extended to the refineries or other food related industries later on. This grease does not contain any heavy metal and no known carcinogenic material. The consistency of the grease is equivalent to National Grease Lubricating Institute (NLGI) No. 2 and 3 which is the most common consistency for a multipurpose grease. It also could be used at high operating temperature (with dropping point min. 170°C), possesses good water resistant and lubricity.

TYPICAL SPECIFICATION

Unworked penetration at 25°C = 263
Worked penetration at 25°C = 282
NLGI number = 2
Dropping point = 180°C
WSD = 0.59 mm

ISSN 1511-7871
9 771511 787001

Malaysian Palm Oil Board, Ministry of Plantation Industries and Commodities, Malaysia
P. O. Box 10620, 50720 Kuala Lumpur, Malaysia. Tel: 03-89259155, 89259775, Website: http://mpob.gov.my Telefax: 03-89259446

REFERENCES

LODERER, D and RETZER, S C (1997). *NLGI Spokeman, 61 (6)*: 18.23.

TOCCI, L (2003). *Lubes-n-Grease, 9 (7)*: 22.

For more information kindly contact:

Director-General
MPOB
P. O. Box 10620
50720 Kuala Lumpur, Malaysia.
Tel: 03-89259155, 89259775
Website: http://mpob.gov.my
Telefax: 03-89259446