

CHAPTER III

EXPERIMENTAL

3.1 Materials and Equipments

3.1.1 Chemicals

Refined palm oil (Chumporn Palm Oil Industry Public Company Limited)

Refined palm kernel oil (Chumporn Palm Oil Industry Public Company Limited)

High-speed diesel fuel (PTT)

LPG gas (PTT)

3.1.2 Equipments

Hydrometer

Thermometers

U-tube viscometer

Oil bath

Flash point measurement set

Carbon residue measurement set

Pour point measurement set

Distillation measurement set

Crucible

Electric muffle furnace

Burner

3.2 Procedure

3.2.1 Sample Preparation

Each sample was prepared by adding refined palm oil or refined palm kernel oil in high-speed diesel fuel in various ratios (2, 4, 6, 8, 10% volume for refined palm kernel oil and 0.05, 0.10, 0.15, 0.20% volume for refined palm oil).

3.2.2 Analysis Methods

Analysis	Methods / Equipment
Surface tension	Tensiometer
Kinematic viscosity	ASTM D 445
Specific gravity	ASTM D 1298
Pour point	ASTM D 97
Flash point	ASTM D 93
Carbon residue	ASTM D 189
Distillation	ASTM D 86
Calculated cetane index	ASTM D 976