WHAT IS CLAIMED IS:

1. An eco-friendly lubricating grease composition based on waste plastic pyrolysis reformed oil comprises, a lube base oil with a kinematic viscosity (40°C) of 220 cSt, which is composed of mineral base oil and/or synthetic base oil and waste plastic pyrolysis reformed oil in which a liquid oil that is recovered by pyrolyzing waste plastic in the absence of oxygen is hydroformed under the addition of hydrogen; 5.5 to 25 parts by weight of a thickener which is composed isocyanate-based compounds and amine-based compounds, 0.1 to 0.8 parts by weight of a corrosion inhibitor, 0.1 to 2.5 parts by weight of an anti-wear agent, and 1 to 4.5 parts by weight of an antioxidant, in relation to 100 parts by weight of the lube base oil.

2. The eco-friendly lubricating grease composition based on waste plastic pyrolysis reformed oil according to claim 1, wherein the lube base oil is composed of mineral base oil and waste plastic pyrolysis reformed oil.

3. The eco-friendly lubricating grease composition based on waste plastic pyrolysis reformed oil according to claim 2, wherein the waste plastic pyrolysis reformed oil is a recovered oil from a liquid oil that is obtained by pyrolyzing waste plastic in the absence of oxygen and is hydroformed under the addition of hydrogen, with a kinematic viscosity (40°C) of 100 to 200 cSt, a viscosity index of 80 or more, and a saturation of 90 w% or more.

4. The eco-friendly lubricating grease composition based on waste plastic pyrolysis reformed oil according to claim 3, wherein the thickener is composed of an isocyanate-based compound and an amine-based compound in a weight ratio of 1:1.

5. The eco-friendly lubricating grease composition based on waste plastic pyrolysis reformed oil according to claim 4, wherein the corrosion inhibitor comprises N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methanamine, the anti-wear agent comprise triphenyl phosphate (TPP) or zinc-diphosphate (Zn-DTP) and the antioxidant comprise and P,P'-Dioctyldiphenylamine.