WHAT IS CLAIMED IS:

1. Method for manufacturing eco-friendly lubricating grease based on waste plastic pyrolysis reformed oil comprising the following stages :-

1st stage : Adding a mineral base oil and waste plastic pyrolysis reformed oil into a mixing vessel at a weight ratio of 1:1 and mixing evenly to prepare 100 parts by weight of lube base oil with a kinematic viscosity (40℃) 220cSt;

2nd stage : Putting 85 parts by weight of the lube base oil prepared above into a reaction tank (1) and heating to 60°C, then adding 10 parts by weight of methylenediphenyl diisocyanate (MDI) to react together;

3rd stage : adding the remaining 15 parts by weight of the lube base oil into a separate reaction tank (2), adding 5 parts by weight of oleylamine and 5 parts by weight of cyclohexylamine and sufficiently stirring to obtain a mixture;

4th stage : putting slowly the mixture into the reaction tank(1) for 60 minutes and heating to 180℃ at the same time and then cooling; and

5th stage : when the temperature is below 100°C, introducing 0.5 parts by weight of N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methanamine, 0.5 parts by weight of zinc-diphosphate (Zn-DTP) and 1.5 parts by weight of P,P'-dioctyldiphenylamine, to the mixture prepared from the 4th stage, and then homogenizing them to produce an eco-friendly lubricating grease based on waste plastic pyrolysis reformed oil.

2. Method of manufacturing according to Claim 1, 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.