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## RANDOMLY MIXTURE OF WASTE PLASTICS AND SODIUM CARBONATE (Na<sub>2</sub>CO<sub>3</sub>) MIXTURE INTO RENEWABLE PETROLEUM PRODUCT

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## Abstract

Thermal degradation process was applied with randomly mixture waste plastics and 10%, 20% Sodium Carbonate. Two experiments were performed with randomly mixture waste plastics and Sodium Carbonate was use for 1<sup>st</sup> experiment 10% and Sodium Carbonate 20% was use for 2<sup>nd</sup> experiment. Temperature rang was for both experiments at 100-420 °C and experiments was performed under labconco fume hood and experiments was batch process without vacuum system. Experimental purpose initial raw materials were using randomly mixture waste plastics and waste plastics contain was polystyrene, polypropylene, low density polyethylene and high density polyethylene. 10 % sodium carbonate and randomly waste plastic mixture to fuel density is 0.80 g/ml and 20% sodium carbonate mixture with waste plastics to fuel density is 0.78 g/ml. Produced liquid fuels was analyzed by Gas Chromatography and Mass Spectrometer (GC/MS) and analysis results indicate that 10% Sodium Carbonate and waste plastics mixture to fuel hydrocarbon range is C<sub>5</sub> to C<sub>30</sub>. 20% Sodium Carbonate and waste plastics mixture to liquid fuel hydrocarbon compounds range is C<sub>4</sub> to C<sub>28</sub>. Both fuel can be use into internal combustion engines and feed stock refinery for further modification.

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