

Comparison between Japan-sourced PP and imported PP

Introduction

The expansion of global business and cost-reduction pressures has led to an increase in material imports from overseas. Therefore it is necessary to check the quality in comparison with the Japan domestic materials previously relied upon. Measurement of the chemiluminescence (CL) of virgin samples and slight oxidized samples allows the oxidation stabilities to be easily assessed.

The CL method is a valuable aid in evaluating a material's oxidation stability at acceptance inspection.

Method and Results

Japan-sourced and imported PP (polypropylene) were analysed. Both PP's were oxidized for 50 hours. The CL time-course was recorded with CLA-FS4 at 180C under nitrogen flow for 10min (Fig.1).

System : CLD-FS4, CLS-ST3

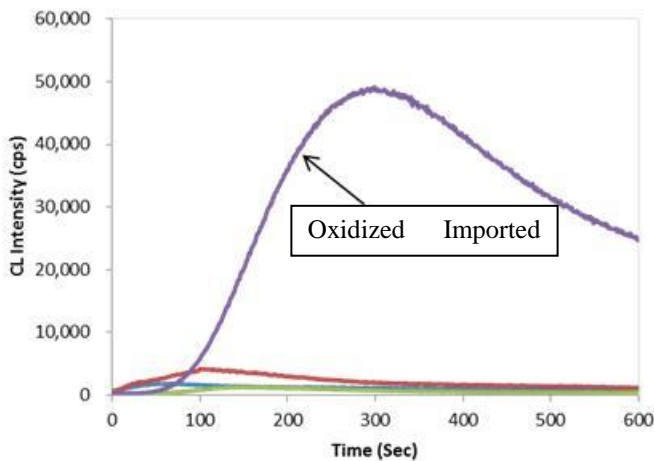


Fig.1 CL time-course change of PP

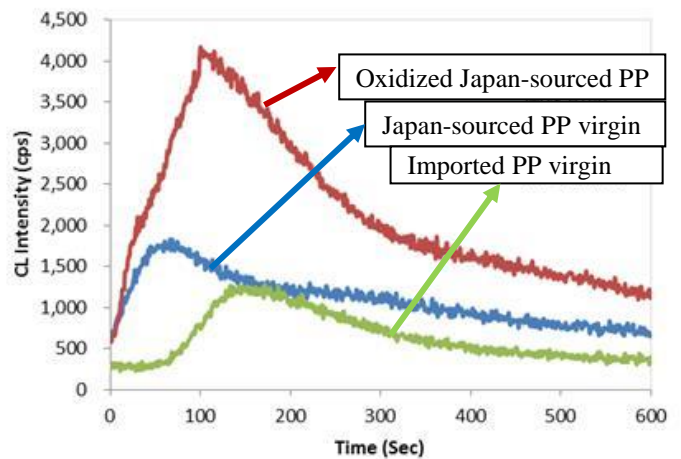


Fig.2 Expansion of Fig. 1

- 1: Japan-sourced (J) PP virgin, 2: Imported (I) PP virgin
- 3: Oxidized Japan-sourced PP, 4: Oxidized Imported PP

Fig.3 compares total CL's over 10min.

The increase of CL after oxidation reflects the ease of oxidation.

Imported PP was found to oxidize more easily than Japan domestic PP.

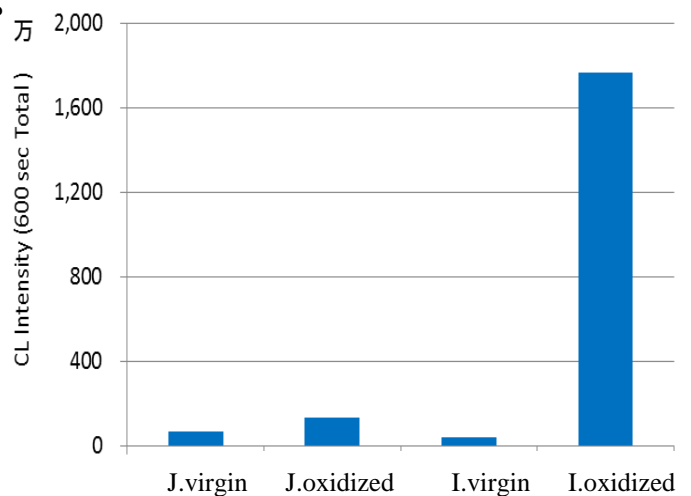


Fig.3 CL total count