METHOD FOR INCREASING COLOR QUALITY AND STABILITY OF FUEL ~~FIELD OF THE INVENTION~~

FIELD OF THE INVENTION

[0001] This invention relates to a process for increasing color quality and thermal stability of fuels. In particular, this invention relates to a process for increasing color quality and thermal stability of fuel in which a fuel feedstock is contacted with an acidic, ion-exchange resin to increase the color quality and thermal stability of the fuel feedstock.

BACKGROUND OF THE INVENTION

[0002] Over time, the quality of various fuels can degrade. Color quality is one characteristic of a fuel that can degrade over time during storage. Thermal oxidation stability is another.

[0003] Robert N. Hazlett, "Thermal Oxidation Stability of Aviation Turbine Fuels," ASTM Publication Code Number 31-001092-12, 1991, reports a process that was considered effective in improving jet fuel thermal oxidation stability.

[0004] Schwartz, F.G., and Eccleston, B.H., "Survey of Research on Thermal Stability of Petroleum Jet Fuels," BuMines Information Circular 8140, Bureau of Mines, Washington, DC, 1962, reports that sulfur dioxide (SO_2) extraction, acid treating, and absorption methods improve the thermal stability of jet fuel.

[0005] Although a number of refining techniques have improved thermal stability, most have significant drawbacks. For example, extraction methods with sulfuric acid, caustic, or SO_2 have waste disposal problems. The use of absorption methods with agents such as silica gel or alumina have met with marginal success. Clay adsorption generally requires large quantities of material.

[0006] Statutory Invention Registration No. U.S. H1368 describes a method for improving the long-term color stability of jet fuel and jet fuel blends containing nitrogen compounds by intimately mixing the jet fuel with a quantity of concentrated sulfuric acid sufficient to remove at least 90% of the nitrogen