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(54) Title: HYDRODEOXYGENATION OF OXYGENATED POLYMERS TO LIQUID HYDROCARBONS

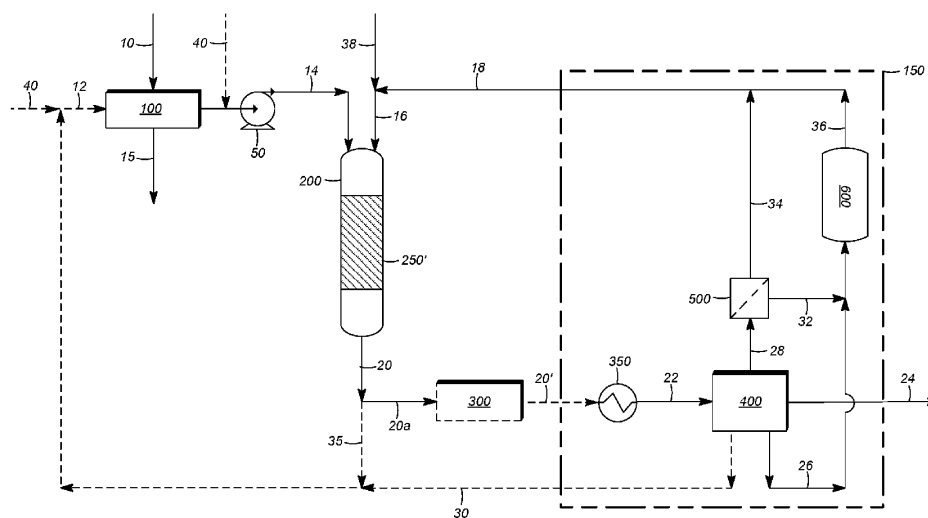


FIG. 1

(57) Abstract: Process are disclosed for converting plastics, and especially thermoplastic oxygenated polymers, by hydrodeoxygenation (HDO) to hydrocarbons, such as aromatic hydrocarbons including benzene, toluene, ethylbenzene, and xylene isomers. These hydrocarbons may be recovered as chemicals and/or fuels, depending on the particular chemical structures of the starting materials, including the presence of oxygen in the polymer backbones. Advantageously, using a sufficiently active catalyst, only moderate conditions, such as in terms of hydrogen partial pressure, are required, in comparison to known hydrotreating processes. This leads to the formation, with fewer non-selective side reactions, of desired liquid hydrocarbons from substantially all carbon in the oxygenated polymer, as well as water from substantially all oxygen in the oxygenated polymer. In some cases, the liquid hydrocarbons obtained are platform chemicals that can be used for a number of specialized purposes. For example, they may be converted to monomers for regenerating

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