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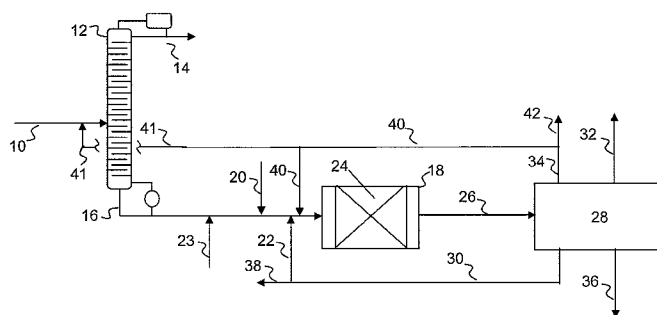
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(54) Title: OLEFIN ISOMERIZATION AND METATHESIS CATALYST

Figure 1



(57) Abstract: A process for the production of propylene, the process including: contacting ethylene and a hydrocarbon stream comprising 1-butene and 2-butene with a bifunctional isomerization-metathesis catalyst to concurrently isomerizes 1-butene to 2-butene and to form a metathesis product comprising propylene; wherein the bifunctional isomerization-metathesis catalyst comprises: a catalyst compound may include at least one element selected from tungsten, tantalum, niobium, molybdenum, nickel, palladium, osmium, iridium, rhodium, vanadium, ruthenium, and rhenium for providing metathesis activity on a support comprising at least one element from Group IA, HA, HB, and IIIA of the Periodic Table of the Elements; wherein an exposed surface area of the support provides both isomerization activity for the isomerization of 1-butene to 2-butene; and reactive sites for the adsorption of catalyst compound poisons. In other embodiments, the catalyst compound may include at least one element selected from aluminum, gallium, iridium, iron, molybdenum, nickel, niobium, osmium, palladium, phosphorus, rhenium, rhodium, ruthenium, tantalum, titanium, tungsten, and vanadium.



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