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(54) Title: HYDROCONVERSION MULTI-METALLIC CATALYST AND METHOD FOR MAKING THEREOF

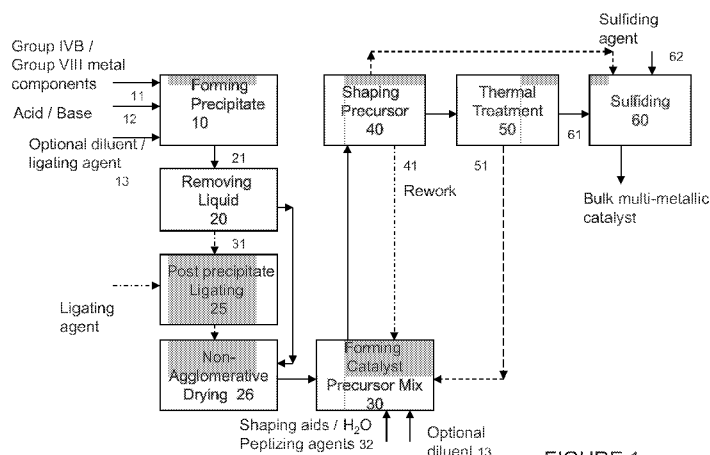


FIGURE 1

(57) **Abstract:** A catalyst with low volumetric shrinkage and a process for making the stable catalyst with low volumetric shrinkage is disclosed. The catalyst is made by sulfiding a catalyst precursor containing at least a Group VIB metal compound; at least a promoter metal compound selected from Group VIII, Group HB, Group HA, Group IVA and combinations thereof, having an oxidation state of either +2 or +4; optionally at least a ligating agent; optionally at least a diluent. In one embodiment, the catalyst precursor is first shaped then heat treated at a temperature of 50°C. to 200°C. for 15 minutes to 12 hours, wherein the catalyst precursor has a low (less than 12%) volumetric shrinkage after exposure to at least 100°C for at least 30 minutes, e.g., in sulfidation or in a hydrotreating reactor. In one embodiment, the catalyst precursor has an essentially monomodal pore volume distribution with at least 90% of the pores being macropores, and a total pore volume of at least 0.08 g/cc. In one embodiment, the catalyst is suitable for hydrotreating heavy oil feeds having a boiling point in the range of 343°C. (650°F.) - to 454°C. (850°F.), an average molecular weight Mn ranging from 300 to 400, and an average molecular diameter ranging from 0.9 nm to 1.7 nm.

**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
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