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(54) Title: MIXED METAL OXIDE CATALYSTS FOR PROPANE AND ISOBUTANE OXIDATION AND AMMOXIDATION, AND METHODS OF PREPARING SAME

(57) Abstract: Compositions of matter and catalyst compositions effective for gas-phase conversion of propane to acrylic acid (via oxidation) or to acrylonitrile (via ammoxidation) and isobutane to methacrylic acid (via oxidation) and isobutane to methacrylonitrile (via ammoxidation) are disclosed. Preferred catalyst compositions comprise molybdenum, vanadium, niobium, antimony and germanium and molybdenum, vanadium, tantalum, antimony, and germanium. Methods of preparing such compositions and related compositions, including hydrothermal synthesis methods are also disclosed. The preferred catalysts convert propane to acrylic acid and/or to acrylonitrile and isobutane to methacrylic acid/methacrylonitrile with a yield of at least about 50 %.



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