

Claims

1. A process for the production of mono-olefins from a paraffin-containing hydrocarbon feed having at least two carbon atoms, the process comprising:
 - (a) a first step of partially combusting a mixture of the hydrocarbon feed and a molecular oxygen-containing gas in contact with a catalyst capable of supporting combustion beyond the normal fuel rich limit of flammability, said first step carried out under a total pressure of greater than 5 bar absolute, and at a temperature of greater than 650°C, and
 - (b) a second step of cooling the mono-olefinic products to 600°C or less within less than 50 milliseconds ~~of formation~~.
2. A process according to claim 1 in which the hydrocarbon feed is ethane, propane, butane, naphtha, gas oil, vacuum gas oil or mixtures thereof.
3. A process according to claim 1 or claim 2 in which the catalyst is a supported platinum group metal.
4. A process according to any one of the preceding claims in which the platinum group metal is platinum or palladium or a mixture thereof.
5. A process according to claim 3 or claim 4 in which the support is alumina.
6. A process according to any one of claims 3-5 in which the support is a monolith.

25 < the time between formation of the olefinic products and cooling being >