CLAIMS

1. A process for the selective oxidation of the carbon monoxide present in a gas mixture comprising at least one hydrocarbon or one hydrocarbon derivative, wherein said at least one hydrocarbon is selected from the group consisting of propylene, propane and any mixture thereof; and said at least one hydrocarbon derivative is selected from the group consisting of acrolein, acrylic acid and any mixture thereof, said process comprising the stage consisting in bringing said gas mixture into contact with a solid catalyst capable of oxidizing the carbon monoxide to carbon dioxide at a chosen temperature, characterized in that said stage is carried out in a fluidized bed.

~~2. The process as claimed in claim 1, characterized in that the hydrocarbon is chosen from saturated or mono- or diunsaturated and linear or branched hydrocarbons comprising from 2 to 6 carbon atoms, or aromatic hydrocarbons, which can be substituted, comprising from 6 to 12 carbon atoms.~~

~~3. The process as claimed in claim 1 or 2, characterized in that the hydrocarbon derivative is chosen from anhydrides, such as phthalic anhydride or maleic anhydride, aldehydes, such as acrolein or methacrolein, unsaturated carboxylic acids, such as acrylic acid or methacrylic acid, unsaturated nitriles, such as acrylonitrile, methacrylonitrile or atroponitrile, or their mixtures, ethylene oxide, propylene oxide or 1,2-dichloroethane.~~

2.~~4.~~ The process as claimed in ~~any one of~~ claims 1~~ to 3~~, characterized in that the catalyst is in the form of solid particles with a particle size

ranging from 20 to 1000 microns, preferably from 40 to 500 microns.

3.~~5.~~ The process as claimed in any one of the preceding

claims, characterized in that the catalyst is chosen from catalysts based on noble metals, such as platinum, palladium, rhodium or ruthenium, supported on an inorganic support, such as silica, titanium oxide, zirconium oxide, alumina, sodium silicate or silicalite; or catalysts based on copper, manganese, cobalt, nickel or iron, optionally in the presence of at least one noble metal, such as platinum, palladium, rhodium or ruthenium, in the form of mixed oxides or of alloys optionally supported on an inorganic support, such as silica, titanium oxide, zirconium oxide, alumina, sodium silicate or silicalite.

46. The process as claimed in any one of the preceding claims, characterized in that the temperature of the fluidized bed is lower than the temperature corresponding to the start of the reaction for the oxidation of the hydrocarbon and/or hydrocarbon derivative.

57. The process as claimed in any one of the preceding claims, characterized in that the space velocity SV, expressed as hourly flow rate by volume of gas mixture with respect to the volume of catalyst, is between 1000 h^{-1} and 30 000 h^{-1}.

68. A process for the production of a hydrocarbon derivative wherein said hydrocarbon is selected from the group consisting of propylene, propane and any mixture thereof, comprising at least one stage of selective oxidation of the carbon monoxide present in a gas mixture comprising at least one hydrocarbon or one hydrocarbon derivative, wherein said hydrocarbon derivative is selected from the group consisting of acrolein, acrylic acid and any mixture thereof, using a fluidized bed comprising a solid catalyst capable

of oxidizing carbon monoxide to carbon dioxide at a chosen temperature.

79. The process as claimed in claim 86, comprising at least the following stages:

a) at least one hydrocarbon and oxygen or an oxygen-comprising gas are brought into contact with an appropriate catalyst, resulting in a gas mixture comprising at least one hydrocarbon derivative, unconverted hydrocarbon, oxygen and carbon monoxide,

b) the hydrocarbon derivative is separated or extracted from the reaction stream resulting from stage a),

c) the carbon monoxide present in the gas stream is then converted to carbon dioxide using a fluidized bed comprising a solid catalyst capable of oxidizing carbon monoxide to carbon dioxide at a chosen temperature, producing a gas stream depleted in carbon monoxide,

d) said stream depleted in carbon monoxide is recycled to reaction stage a).

8~~10~~. The process as claimed in claim 8~~—~~6 or 9~~7~~, characterized in that all or part of the stream entering or exiting from stage c) is subjected to a separation in a selective permeation unit, resulting in the removal of at least a portion of the carbon dioxide present in said stream.

9~~11~~. The process as claimed in claim 9~~—~~7 or 10~~8~~, characterized in that stage a) is carried out in the presence of a thermal ballast which is inert under the conditions of the reaction carried out.

10~~2~~. The process as claimed in any one of claims 8~~—~~6 to 11~~9~~, characterized in that the hydrocarbon is propylene and the hydrocarbon derivative is acrylic acid.

113. The process as claimed in claim 911 or 102, characterized in that propane is used as thermal ballast.