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ABSTRACT

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PROCESS FOR PRODUCING NITRILES

A catalyst which is suitable for the production of a nitrile from an alkane, wherein:

① the catalyst has the empirical formula:

$\text{MoV}_b\text{Te}_c\text{X}_x\text{O}_n$ wherein:

X is at least one of Nb, Ta, W, Ti, Al, Zr, Cr, Mn, Fe, Ru, Co, Rh, Ni, Pd, Pt, Sb, Bi, B and Ce;

b is from 0.01 to 1.0;

c is from 0.01 to 1.0;

x is from 0.01 to 1.0; and

n is a number such that the total valency of the metal elements is satisfied; and

② the catalyst has X-ray diffraction peaks at the following angles at 2θ in its X-ray diffraction pattern:

Diffraction

angles at 2θ ($^\circ$)

22.1 $\pm$ 0.3

28.2 $\pm$ 0.3

36.2 $\pm$ 0.3

45.2 $\pm$ 0.3

50.0 $\pm$ 0.3.

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