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(54) **Title:** A METHOD OF PREPARING ACETYLENE (C_2H_2)

(57) **Abstract:** The present invention provides a method of preparing acetylene (C_2H_2), the method at least comprising the steps of: a) providing a methane-containing stream; b) subjecting the methane-containing stream provided in step a) to non-catalytic pyrolysis, thereby obtaining carbon and hydrogen; c) reacting the carbon obtained in step b) with CaO, thereby obtaining CaC_2 and CO; d) reacting the CaC_2 obtained in step c) with H_2O, thereby obtaining acetylene (C_2H_2) and $Ca(OH)_2$; e) decomposing the $Ca(OH)_2$ obtained in step d), thereby obtaining CaO and H_2O; f) using the CaO as obtained in step e) in the reaction of step c).