

**CPC****COOPERATIVE PATENT CLASSIFICATION****C10K****PURIFYING OR MODIFYING THE CHEMICAL COMPOSITION OF COMBUSTIBLE GASES CONTAINING CARBON MONOXIDE****Guidance heading:****C10K 1/00**

**Purifying combustible gases containing carbon monoxide** (isolation of hydrogen from mixtures containing hydrogen and carbon monoxide [C01B 3/50](#))

## C10K 1/001

- . { working-up the condensates (recovering of NH<sub>3</sub> and NH<sub>4</sub> salts [C01C 1/00](#); working-up or purifying tars and tar-oils [C10C 1/00](#)) }

## C10K 1/002

- . { Removal of contaminants }

## C10K 1/003

- .. { of acid contaminants, e.g. acid gas removal }

## C10K 1/004

- ... { Sulfur containing contaminants, e.g. hydrogen sulfide }

## C10K 1/005

- ... { Carbon dioxide }

## C10K 1/006

- ... { Hydrogen cyanide }

## C10K 1/007

- .. { of metal compounds }

## C10K 1/008

- ... { Alkali metal compounds }

## C10K 1/02

- . Dust removal

## C10K 1/022

- .. {by baffle plates }

## C10K 1/024

- .. {by filtration }

## C10K 1/026

- .. { by centrifugal forces (cyclones [B04C](#)) }

## C10K 1/028

- .. { by electrostatic precipitation (separating dispersed particles from gases or vapour by electrostatic effect in general [B03C 3/00](#)) }

## C10K 1/04

- . by cooling to condense non-gaseous materials { ([C10K 1/001](#) takes precedence) }

## C10K 1/043

- .. {adding solvents as vapour to prevent naphthalene- or resin deposits }

## C10K 1/046

- .. { Reducing the tar content }

## C10K 1/06

- .. combined with spraying with water { ([C10K 1/001](#) takes precedence) }

## C10K 1/08

- . by washing with liquids; Reviving the used wash liquors ([gas washers B01D](#))

## C10K 1/085

- .. {two direct washing treatments, one with an aqueous liquid and one with a non-aqueous liquid }

## C10K 1/10

- .. with aqueous liquids {alkaline reacting aqueous liquids [C10K 1/12](#) }

## C10K 1/101

- ... {with water only }

## C10K 1/102

- ... {containing free acid }

## C10K 1/103

- ... {alkali- or earth-alkali- or NH<sub>4</sub> salts or inorganic acids derived from sulfur }

## C10K 1/105

- ... {containing metal compounds other than alkali- or earth-alkali carbonates, -hydroxides, oxides, or salts of inorganic acids derived from sulfur }

## C10K 1/106

- .... {containing Fe compounds }

## C10K 1/107

- .... {containing As-, Sb-, Sn compounds }

- C10K 1/108 . . . . {containing Cu compounds }
- C10K 1/12 . . . alkaline-reacting {including the revival of the used wash liquors }
- C10K 1/121 . . . . {containing NH<sub>3</sub> only (possibly in combination with NH<sub>4</sub> salts) }
- C10K 1/122 . . . . {containing only carbonates, bicarbonates, hydroxides or oxides of alkali-metals (including Mg) }
- C10K 1/123 . . . . {containing alkali-, earth-alkali- or NH<sub>4</sub> salts of inorganic acids derived from sulfur }
- C10K 1/124 . . . . {containing metal compounds other than alkali- or earth-alkali carbonates, hydroxides- or oxides- or salts of inorganic acids derived from sulfur }
- C10K 1/125 . . . . . {containing Fe compounds }
- C10K 1/126 . . . . . {containing As-, Sb-, Sn compounds }
- C10K 1/127 . . . . . {containing Cu compounds }
- C10K 1/128 . . . . {containing organic oxygen transferring compounds, e.g. sulfoxides }
- C10K 1/14 . . . . organic
- C10K 1/143 . . . . . {containing amino groups }
- C10K 1/146 . . . . . {alkali-, earth-alkali- or NH<sub>4</sub> salts }
- C10K 1/16 . . with non-aqueous liquids
- C10K 1/165 . . . {at temperatures below zero degrees Celsius }
- C10K 1/18 . . . hydrocarbon oils { [C10K 1/165](#) takes precedence } }
  
- C10K 1/20 . by treating with solids; Regenerating spent purifying masses { (separation by adsorption [B01D 53/02](#); separation by chemical reaction [B01D 53/34](#) ; refining of hydrocarbon oils with acids [C10G 17/02](#), [C10G 27/02](#), [C10G 29/12](#)) }
- C10K 1/205 . . { Methods and apparatus for treating the purifying masses without their regeneration (recovering of sulfur [C01B 17/00](#); recovering of cyanide compounds [C01C 3/00](#)) }
- C10K 1/22 . . Apparatus, e.g. dry box purifiers
- C10K 1/24 . . . Supporting means for the purifying material
- C10K 1/26 . . Regeneration of the purifying material {contains also apparatus for the regeneration of the purifying material }
- C10K 1/28 . . Controlling the gas flow through the purifiers
- C10K 1/30 . . with moving purifying masses
  
- C10K 1/32 . with selectively adsorptive solids, e.g. active carbon
- C10K 1/34 . by catalytic conversion of impurities to more readily removable materials
  
- C10K 3/00** **Modifying the chemical composition of combustible gases containing carbon monoxide to produce an improved fuel, e.g. one of different calorific value, which may be free from carbon monoxide**
- C10K 3/001 . { by thermal treatment }
- C10K 3/003 . . { Reducing the tar content }
- C10K 3/005 . . . { by partial oxidation }
- C10K 3/006 . . . { by steam reforming }
- C10K 3/008 . . . { by cracking }

- C10K 3/02
  - by catalytic treatment
- C10K 3/023
  - · { Reducing the tar content }
- C10K 3/026
  - · { Increasing the carbon monoxide content, e.g. reverse water-gas shift [RWGS ]}
- C10K 3/04
  - · reducing the carbon monoxide content { e.g. water-gas shift [WGS ]}
- C10K 3/06
  - by mixing with gases