

- [0014] Calibration and/or characterisation data relating to the respective cartridge and/or manufacturing lot data relating to the lot, to which the respective cartridge belongs. With this information wrong combinations of cartridges and characterising data will be avoided.
- [0015] Production date of the respective cartridge and/or shelf life information or expiration date of the respective cartridge. With this information it is possible to prevent usage of expired cartridges. This control previously had to be checked manually.
- [0016] Cartridge type information. There may be provided different types of cartridges provided for different diagnosis and/or analysis tasks. To perform a proper measurement or evaluation it is important for the apparatus to know the specific type of inserted cartridge. With this information wrong usage leading to measurement errors will be avoided.
- [0017] Unique serial number of the respective cartridge. With this information it will be possible to perform a reliable quality management tracking. In case of manufacturing errors it is also possible to suspend specific serial numbers to prevent usage of faulty cartridges.
- [0018] Some types of cartridges require precise temperature measurements, e.g. gas concentrations are highly dependent on the sample temperature. According to another advantageous embodiment the cartridge will comprise means for temperature measurement, wherein an electrical value correlating with the temperature of the sample is measurable at the connecting means, wherein the cartridge specific data and/or information comprises calibration data of the temperature measurement means. Having a memory on the cartridge allows using low precision temperature measurement sensors on the cartridge in conjunction with stored calibration data, i.e. temperature measurement correction coefficients. Previously, the temperature measurement sensors, when part of the cartridge, have been expensive due to the need for high accuracy or selected versions.
- [0019] According to a further embodiment the storage means will be provided to be writable and at least one of the following additional data and/or information will be storable or alterable in the storage means:
- [0020] In case of a single use cartridge it will be stored, whether it is used or not. Therefore accidental reuse of a used single use cartridge can be prevented reliably.
- [0021] In case of a multiple use cartridge it will be stored, how often and/or since when is in use. With this information counting errors and therefore inadmissible usage can be avoided.
- [0022] The results of each diagnosis and/or analysis relating to the respective cartridge will be stored. It is therefore possible to transfer data sets to a data management system, e.g. by plugging the used cartridge into a special reader. Additionally it will be stored a patient identification information and/or an operator identification information and/or an identification information relating to the diagnosis and/or analysis apparatus and/or the date of the diagnosis and/or analysis. With this useful information there will be prevented a faulty mixing of the measurement results with the respective patient.
- [0023] According to another embodiment there will be provided electric, electronic, magnetic and/or optical data transfer means for reading and/or writing and/or altering data and/or information stored in the storage means. These data transfer means support an automatic, time saving and error free data transfer between each cartridge and the apparatus.
- [0024] Relating to a preferred embodiment the data transfer means comprise the respective connecting means of the cartridge and/or radio frequency transfer means. Using the connecting means leads to a relative simple design. Using radio frequency or optical transfer means has the advantage that the storage means can easily be read and/or programmed and/or altered without contact even when the cartridge is sealed in its package. E.g. it is possible to write on the storage means after the cartridge is sterilised. With radio frequency transfer means it is also possible to transmit the required power.
- [0025] According to a special embodiment the storage means will comprise an electrical memory member, e.g. EEPROM, FRAM, PROM or battery backed RAM, readable and/or writable via electric or electronic data transfer means, or at least one magnetic stripe or an optical memory or a two dimensional barcode.
- [0026] Other objects and many of the attendant advantages of the present invention will be readily appreciated and become better understood by reference to the following detailed description when considered in connection with the accompanying drawing. Features that are substantially or functionally equal or similar will be referred to with the same reference sign(s).
- [0027] FIG. 1 depicts a schematic view of a system according to the invention.
- [0028] Referring to FIG. 1 a system 1 for point of care diagnosis and/or analysis of body fluids of a patient according to the invention comprises at least one cartridge 2. In FIG. 1 are shown three different embodiments of this cartridge 2 indicated with 2a, 2b and 2c. The system 1 also comprises at least one diagnosis and/or analysis apparatus 3.
- [0029] Each cartridge 2 has a sample receiving room 4 to receive a sample of the body fluids, e.g. blood or urine, that has to be diagnosed and/or analysed. The cartridge 2 comprises a filler socket 5 through which the sample can be filled in the sample receiving room 4. Each cartridge 2 comprises measuring means 6 provided for measuring the concentration of at least one specific component or substance of the sample. These measuring means 6 may comprise chemistry performing specific chemical and/or biochemical reactions with the respective body fluids. The measuring means 6 also enclose e.g. electrodes 7 which are connected with electric connecting means 8 of the cartridge 2 and provide electrical values or signals correlating with the concentration of the respective components. These concentration values are therefore measurable at the connecting means 8.
- [0030] In contrast to the cartridges 2a and 2b the cartridge 2c additionally comprises temperature measurement means 9 provided for measuring the temperature of the sample. These temperature measuring means 9 are also connected with the connecting means 8 to provide there electrical values or signals correlating with the temperature of the sample.