

CPC COOPERATIVE PATENT CLASSIFICATION

F MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING (NOTE omitted)

ENGINEERING IN GENERAL

F17 STORING OR DISTRIBUTING GASES OR LIQUIDS

F17C VESSELS FOR CONTAINING OR STORING COMPRESSED, LIQUEFIED OR SOLIDIFIED GASES; FIXED-CAPACITY GAS-HOLDERS; FILLING VESSELS WITH, OR DISCHARGING FROM VESSELS, COMPRESSED, LIQUEFIED, OR SOLIDIFIED GASES (storing fluids in natural or artificial cavities or chambers in the earth [B65G 5/00](#); construction or assembling of bulk storage containers employing civil-engineering techniques [E04H 7/00](#); variable-capacity gas-holders [F17B](#); liquefaction or refrigeration machines, plants, or systems [F25](#))

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

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| 1/00 | Pressure vessels, e.g. gas cylinder, gas tank, replaceable cartridge (pressurised apparatus for purposes other than storage, see the relevant subclasses such as A62C , B05B ; associated with vehicles, see the appropriate subclass of classes B60 - B64 ; pressure vessels in general F16J 12/00 {; autoclaves B01J 3/04 ; tank vehicles B60P 3/22 ; railway tank wagons for carrying fluent materials B61D 5/00 ; accumulators for supplying fluid under pressure F15B 1/04 ; liquefied gas stoves F24C 3/00) | 3/02 | . with provision for thermal insulation (thermal insulation in general F16L 59/00 {; refrigerators F25D ; insulation specially adapted for cryogenic vessels F17C 13/001 ; tank vehicles B60P 3/22 ; railway tank wagons B61D 5/00) |
| 1/002 | . {Storage in barges or on ships} | 3/022 | . . {Land-based bulk storage containers (civil engineering aspects E04H 7/00)} |
| 1/005 | . {Storage of gas or gaseous mixture at high pressure and at high density condition, e.g. in the single state phase} | 3/025 | . . {Bulk storage in barges or on ships (constructive aspects B63B 25/16)} |
| 1/007 | . {Underground or underwater storage} | 3/027 | . . . {Wallpanels for so-called membrane tanks} |
| 1/02 | . involving reinforcing arrangements {(F17C 1/14 , F17C 1/16 take precedence)} | 3/04 | . . by insulating layers (F17C 3/08 takes precedence) |
| 1/04 | . . Protecting sheathings | 3/06 | . . . on the inner surface, i.e. in contact with the stored fluid |
| 1/06 | . . . built-up from wound-on bands or filamentary material, e.g. wires | 3/08 | . . by vacuum spaces, e.g. Dewar flask (for household use A47J 41/02) |
| 1/08 | . . Integral reinforcements, e.g. ribs | 3/085 | . . . {Cryostats} |
| 1/10 | . with provision for protection against corrosion, e.g. due to gaseous acid ({ F17C 1/14 , F17C 1/16 take precedence}; inhibiting corrosion of metallic material or incrustation in general C23F) | 3/10 | . . by liquid-circulating or vapour-circulating jackets |
| 1/12 | . with provision for thermal insulation ({ F17C 1/14 , F17C 1/16 take precedence}; thermal insulation in general F16L 59/00) | 3/12 | . with provision for protection against corrosion, e.g. due to gaseous acid (protection against corrosion in general C23F) |
| 1/14 | . constructed of aluminium; constructed of non-magnetic steel | 5/00 | Methods or apparatus for filling containers with liquefied, solidified, or compressed gases under pressures (adding propellants to aerosol containers B65B 31/00) |
| 1/16 | . constructed of plastics materials {(shaping of plastics B29C)} | NOTE | This group includes not only the filling of vessels for storage of compressed or liquefied gases, but also the filling of pressurised apparatus insofar as it is not covered by a single other subclass, e.g. A62C , B05B . |
| 3/00 | Vessels not under pressure | 5/002 | . {Automated filling apparatus} |
| 3/005 | . {Underground or underwater containers or vessels (storing in natural or artificial cavities in the earth in general B65G 5/00)} | 5/005 | . . {for gas bottles, such as on a continuous belt or on a merry-go-round} |
| | | 5/007 | . . {for individual gas tanks or containers, e.g. in vehicles (filling with liquid fuel not under pressure, B60S 5/02 , B67D 7/00)} |

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| 5/02 | . for filling with liquefied gases | 13/081 | . . {for large land-based storage vessels (supports for large containers in general B65D 90/12)} |
| 5/04 | . . requiring the use of refrigeration, e.g. filling with helium or hydrogen | 13/082 | . . {for large sea-borne storage vessels (load-accommodating arrangements for ships or waterborne vessels B63B 25/12)} |
| 5/06 | . for filling with compressed gases | 13/083 | . . {for medium-sized mobile storage vessels, e.g. tank vehicles or railway tank vehicles} |
| 6/00 | Methods and apparatus for filling vessels not under pressure with liquefied or solidified gases | 13/084 | . . {for small-sized storage vessels, e.g. compressed gas cylinders or bottles, disposable gas vessels, vessels adapted for automotive use} |
| 7/00 | Methods or apparatus for discharging liquefied, solidified, or compressed gases from pressure vessels, not covered by another subclass | 13/085 | . . . {on wheels (hand carts B62B)} |
| 7/02 | . Discharging liquefied gases | 13/086 | . . {for Dewar vessels or cryostats} |
| 7/04 | . . with change of state, e.g. vaporisation | 13/087 | . . . {used for superconducting phenomena} |
| 9/00 | Methods or apparatus for discharging liquefied or solidified gases from vessels not under pressure | 13/088 | . . {for use under microgravity conditions} |
| 9/02 | . with change of state, e.g. vaporisation | 13/10 | . Arrangements for preventing freezing |
| 9/04 | . . Recovery of thermal energy | 13/12 | . Arrangements or mounting of devices for preventing or minimising the effect of explosion (flame traps A62C 4/00) ; Other safety measures |
| 11/00 | Use of gas-solvents or gas-sorbents in vessels {(absorbing compositions for acetylene C10L 3/04 ; absorbing compositions for hydrogen C01B 3/0005)} | 13/123 | . . {for gas bottles, cylinders or reservoirs for tank vehicles or for railway tank wagons} |
| 11/002 | . {for acetylene} | 13/126 | . . {for large storage containers for liquefied gas (for large containers in general B65D 90/22)} |
| 11/005 | . {for hydrogen} | | |
| 11/007 | . {for hydrocarbon gases, such as methane or natural gas, propane, butane or mixtures thereof [LPG]} | 2201/00 | Vessel construction, in particular geometry, arrangement or size |
| 13/00 | Details of vessels or of the filling or discharging of vessels | 2201/01 | . Shape |
| 13/001 | . {Thermal insulation specially adapted for cryogenic vessels (vessels not under pressure with insulation F17C 3/02 ; thermal insulation in general F16L 59/00)} | 2201/0104 | . . cylindrical |
| 13/002 | . {for vessels under pressure (F17C 13/008 and F17C 13/02 - F17C 13/12 take precedence)} | 2201/0109 | . . . with exteriorly curved end-piece |
| 13/003 | . . {Means for coding or identifying them and/or their contents} | 2201/0114 | . . . with interiorly curved end-piece |
| 13/004 | . {for large storage vessels not under pressure (F17C 13/008 and F17C 13/02 - F17C 13/12 take precedence)} | 2201/0119 | . . . with flat end-piece |
| 13/005 | . {for medium-size and small storage vessels not under pressure (F17C 13/008 and F17C 13/02 - F17C 13/12 take precedence)} | 2201/0123 | . . . with variable thickness or diameter |
| 13/006 | . . {for Dewar vessels or cryostats} | 2201/0128 | . . spherical or elliptical |
| 13/007 | . . . {used for superconducting phenomena (investigating by nuclear magnetic resonance G01N 24/08 ; magnets having superconductive winding H01F 6/00)} | 2201/0133 | . . toroidal |
| 13/008 | . {for use under microgravity conditions} | 2201/0138 | . . tubular |
| 13/02 | . Special adaptations of indicating, measuring, or monitoring equipment (measuring in general G01) | 2201/0142 | . . conical |
| 13/021 | . . {having the height as the parameter} | 2201/0147 | . . complex |
| 13/023 | . . {having the mass as the parameter} | 2201/0152 | . . . Lobes |
| 13/025 | . . {having the pressure as the parameter} | 2201/0157 | . . . Polygonal |
| 13/026 | . . {having the temperature as the parameter} | 2201/0161 | . . . Honeycomb |
| 13/028 | . . {having the volume as the parameter} | 2201/0166 | . . . divided in several chambers |
| 13/04 | . Arrangement or mounting of valves (valves per se F16K ; snap-coupling of nipples F16L 37/00) | 2201/0171 | . . . comprising a communication hole between chambers |
| 13/045 | . . {Automatic change-over switching assembly for bottled gas systems with two (or more) gas containers} | 2201/0176 | . . variable |
| 13/06 | . Closures, e.g. cap, breakable member ({for autoclaves B01J 3/03 }; closures for {large} containers in general B65D { B65D 90/54 }; {for pressure vessels in general F16J 13/00 }) | 2201/018 | . . . with bladders |
| 13/08 | . Mounting arrangements for vessels | 2201/0185 | . . . with separating membrane |
| | | 2201/019 | . . . with pistons |
| | | 2201/0195 | . . . with bellows |
| | | 2201/03 | . Orientation |
| | | 2201/032 | . . with substantially vertical main axis |
| | | 2201/035 | . . with substantially horizontal main axis |
| | | 2201/037 | . . with sloping main axis |
| | | 2201/05 | . Size |
| | | 2201/052 | . . large (>1000 m3) |
| | | 2201/054 | . . medium (>1 m3) |
| | | 2201/056 | . . Small (<1 m3) |
| | | 2201/058 | . . portable (<30 l) |
| | | 2201/06 | . Vessel construction using filling material in contact with the handled fluid |
| | | 2203/00 | Vessel construction, in particular walls or details thereof |
| | | 2203/01 | . Reinforcing or suspension means |
| | | 2203/011 | . . Reinforcing means |

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| 2203/012 | . . . on or in the wall, e.g. ribs | 2203/067 | helically wound |
| 2203/013 | . . . in the vessel, e.g. columns | 2203/0673 | Polymers |
| 2203/014 | . . Suspension means | 2203/0675 | with details of composition |
| 2203/015 | . . . Bars | 2203/0678 | . . . Concrete |
| 2203/016 | . . . Cords | 2203/068 | . . Special properties of materials for vessel walls |
| 2203/017 | . . . Magnetic means | 2203/0682 | . . . with liquid or gas layer |
| 2203/018 | . . . by attachment at the neck | 2203/0685 | . . . flexible |
| 2203/03 | . Thermal insulations | 2203/0687 | . . . superconducting |
| 2203/0304 | . . by solid means | 2203/069 | . . . Break point in the wall |
| 2203/0308 | . . . Radiation shield | 2203/0692 | . . . transparent |
| 2203/0312 | cooled by external means | 2203/0695 | . . . pre-constrained |
| 2203/0316 | cooled by vaporised gas from the interior | 2203/0697 | . . . comprising nanoparticles |
| 2203/032 | Multi-sheet layers | | |
| 2203/0325 | . . . Aerogel | 2205/00 | Vessel construction, in particular mounting arrangements, attachments or identifications means |
| 2203/0329 | . . . Foam | 2205/01 | . Mounting arrangements |
| 2203/0333 | Polyurethane | 2205/0103 | . . Exterior arrangements |
| 2203/0337 | . . . Granular | 2205/0107 | . . . Frames |
| 2203/0341 | Perlite | 2205/0111 | . . . Boxes |
| 2203/0345 | . . . Fibres | 2205/0115 | . . . Dismountable protective hulls |
| 2203/035 | Glass wool | 2205/0119 | . . . Vessel walls form part of another structure |
| 2203/0354 | . . . Wood | 2205/0123 | . . characterised by number of vessels |
| 2203/0358 | . . . in form of panels | 2205/0126 | . . . One vessel |
| 2203/0362 | . . by liquid means | 2205/013 | . . . Two or more vessels |
| 2203/0366 | . . . Cryogen | 2205/0134 | characterised by the presence of fluid connection between vessels |
| 2203/037 | . . . Water | 2205/0138 | bundled in series |
| 2203/0375 | . . by gas | 2205/0142 | bundled in parallel |
| 2203/0379 | . . . Inert | 2205/0146 | with details of the manifold |
| 2203/0383 | . . . Air | 2205/0149 | Vessel mounted inside another one |
| 2203/0387 | . . . Cryogen | 2205/0153 | . . Details of mounting arrangements |
| 2203/0391 | . . by vacuum | 2205/0157 | . . . for transport |
| 2203/0395 | . . . Getter | 2205/0161 | with wheels |
| 2203/06 | . Materials for walls or layers thereof; Properties or structures of walls or their materials | 2205/0165 | with handgrip |
| 2203/0602 | . . Wall structures; Special features thereof | 2205/0169 | . . . stackable |
| 2203/0604 | . . . Liners | 2205/0173 | . . . lockable |
| 2203/0607 | . . . Coatings | 2205/0176 | . . . with ventilation |
| 2203/0609 | . . . Straps, bands or ribbons | 2205/018 | . . . Supporting feet |
| 2203/0612 | . . . Wall structures | 2205/0184 | . . . Attachments to the ground, e.g. mooring or anchoring |
| 2203/0614 | Single wall | 2205/0188 | . . . Hanging up devices |
| 2203/0617 | with one layer | 2205/0192 | . . . with external bearing means |
| 2203/0619 | with two layers | 2205/0196 | . . . with shock absorbing means |
| 2203/0621 | with three layers | 2205/03 | . Fluid connections, filters, valves, closure means or other attachments |
| 2203/0624 | with four or more layers | 2205/0302 | . . Fittings, valves, filters, or components in connection with the gas storage device |
| 2203/0626 | Multiple walls | 2205/0305 | . . . Bosses, e.g. boss collars |
| 2203/0629 | Two walls | 2205/0308 | . . . Protective caps |
| 2203/0631 | Three or more walls | 2205/0311 | . . . Closure means |
| 2203/0634 | . . Materials for walls or layers thereof | 2205/0314 | breakable, e.g. with burst discs |
| 2203/0636 | . . . Metals | 2205/0317 | fusing or melting |
| 2203/0639 | Steels | 2205/032 | pierceable |
| 2203/0641 | Non-magnetic steels | 2205/0323 | . . . Valves |
| 2203/0643 | Stainless steels | 2205/0326 | electrically actuated |
| 2203/0646 | Aluminium | 2205/0329 | manually actuated |
| 2203/0648 | Alloys or compositions of metals | 2205/0332 | Safety valves or pressure relief valves |
| 2203/0651 | Invar | 2205/0335 | Check-valves or non-return valves |
| 2203/0653 | Lead | 2205/0338 | . . . Pressure regulators |
| 2203/0656 | in form of filaments | 2205/0341 | . . . Filters |
| 2203/0658 | . . . Synthetics | 2205/0344 | Sinter type |
| 2203/066 | Plastics | | |
| 2203/0663 | in form of fibers or filaments | | |
| 2203/0665 | radially wound | | |
| 2203/0668 | axially wound | | |

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| 2205/0347 | Active charcoal type |
| 2205/035 | . . . Flow reducers |
| 2205/0352 | . . . Pipes |
| 2205/0355 | Insulation thereof |
| 2205/0358 | coaxial |
| 2205/0361 | corrugated |
| 2205/0364 | flexible or articulated, e.g. a hose |
| 2205/0367 | Arrangements in parallel |
| 2205/037 | . . . Quick connecting means, e.g. couplings |
| 2205/0373 | Adapters |
| 2205/0376 | . . . Dispensing pistols |
| 2205/0379 | . . . Manholes or access openings for human beings |
| 2205/0382 | . . . Constructional details of valves, regulators |
| 2205/0385 | in blocks or units |
| 2205/0388 | . . Arrangement of valves, regulators, filters |
| 2205/0391 | . . . inside the pressure vessel |
| 2205/0394 | . . . in direct contact with the pressure vessel |
| 2205/0397 | on both sides of the pressure vessel |
| 2205/05 | . Vessel or content identifications, e.g. labels |
| 2205/051 | . . by coating |
| 2205/052 | . . by stickers |
| 2205/054 | . . by bar codes |
| 2205/055 | . . by magnetic means |
| 2205/057 | . . by chips |
| 2205/058 | . . by Radio Frequency Identification |

2209/00 Vessel construction, in particular methods of manufacturing

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|-----------|---|
| 2209/21 | . Shaping processes |
| 2209/2109 | . . Moulding |
| 2209/2118 | . . . by injection |
| 2209/2127 | . . . by blowing |
| 2209/2136 | . . . using wax moulds |
| 2209/2145 | . . . by rotation |
| 2209/2154 | . . Winding |
| 2209/2163 | . . . with a mandrel |
| 2209/2172 | . . Polishing |
| 2209/2181 | . . Metal working processes, e.g. deep drawing, stamping or cutting |
| 2209/219 | . . Working processes for non metal materials, e.g. extruding |
| 2209/22 | . Assembling processes |
| 2209/221 | . . Welding |
| 2209/222 | . . . by friction |
| 2209/224 | . . Press-fitting; Shrink-fitting |
| 2209/225 | . . Spraying |
| 2209/227 | . . by adhesive means |
| 2209/228 | . . by screws, bolts or rivets |
| 2209/23 | . Manufacturing of particular parts or at special locations |
| 2209/232 | . . of walls |
| 2209/234 | . . of closing end pieces, e.g. caps |
| 2209/236 | . . . Apparatus therefore |
| 2209/238 | . . Filling of insulants |

2221/00 Handled fluid, in particular type of fluid

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| 2221/01 | . Pure fluids |
| 2221/011 | . . Oxygen |
| 2221/012 | . . Hydrogen |
| 2221/013 | . . Carbene dioxide |
| 2221/014 | . . Nitrogen |
| 2221/015 | . . Carbon monoxide |
| 2221/016 | . . Noble gases (Ar, Kr, Xe) |

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| 2221/017 | . . . Helium |
| 2221/018 | . . Acetylene |
| 2221/03 | . Mixtures |
| 2221/031 | . . Air |
| 2221/032 | . . Hydrocarbons |
| 2221/033 | . . . Methane, e.g. natural gas, CNG, LNG, GNL, GNC, PLNG |
| 2221/035 | . . . Propane butane, e.g. LPG, GPL |
| 2221/036 | . . . Hydrates |
| 2221/037 | . . Containing pollutant, e.g. H ₂ S, Cl |
| 2221/038 | . . Refrigerants |
| 2221/05 | . Ultrapure fluid |
| 2221/07 | . Hyperpolarised gases |
| 2221/08 | . Ergols, e.g. hydrazine |

Fluid contained in the vessel; Filling and discharging the fluid

2223/00 Handled fluid before transfer, i.e. state of fluid when stored in the vessel or before transfer from the vessel

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|-----------|--|
| 2223/01 | . characterised by the phase |
| 2223/0107 | . . Single phase |
| 2223/0115 | . . . dense or supercritical, i.e. at high pressure and high density |
| 2223/0123 | . . . gaseous, e.g. CNG, GNC |
| 2223/013 | . . . liquid |
| 2223/0138 | . . . solid |
| 2223/0146 | . . Two-phase |
| 2223/0153 | . . . Liquefied gas, e.g. LPG, GPL |
| 2223/0161 | cryogenic, e.g. LNG, GNL, PLNG |
| 2223/0169 | subcooled |
| 2223/0176 | . . . Solids and gas |
| 2223/0184 | . . . Liquids and solids |
| 2223/0192 | . . Three-phase, e.g. CO ₂ at triple point |
| 2223/03 | . characterised by the pressure level |
| 2223/031 | . . Not under pressure, i.e. containing liquids or solids only |
| 2223/033 | . . Small pressure, e.g. for liquefied gas |
| 2223/035 | . . High pressure (>10 bar) |
| 2223/036 | . . Very high pressure (>80 bar) |
| 2223/038 | . . Subatmospheric pressure |
| 2223/04 | . characterised by other properties of handled fluid before transfer |
| 2223/041 | . . Stratification |
| 2223/042 | . . Localisation of the removal point |
| 2223/043 | . . . in the gas |
| 2223/045 | with a dip tube |
| 2223/046 | . . . in the liquid |
| 2223/047 | with a dip tube |
| 2223/048 | . . . in the solid |

2225/00 Handled fluid after transfer, i.e. state of fluid after transfer from the vessel

| | |
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| 2225/01 | . characterised by the phase |
| 2225/0107 | . . Single phase |
| 2225/0115 | . . . dense or supercritical, i.e. at high pressure and high density |
| 2225/0123 | . . . gaseous, e.g. CNG, GNC |
| 2225/013 | . . . liquid |
| 2225/0138 | . . . solid |
| 2225/0146 | . . Two-phase |
| 2225/0153 | . . . Liquefied gas, e.g. LPG, GPL |
| 2225/0161 | cryogenic, e.g. LNG, GNL, PLNG |

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| 2225/0169 | subcooled | 2227/0346 | by forced circulation, e.g. using a fan |
| 2225/0176 | . . . Solids and gas | 2227/0348 | Water cooling |
| 2225/0184 | . . . Liquids and solids | 2227/0351 | using seawater |
| 2225/0192 | . . Three-phase, e.g. CO ₂ at triple point | 2227/0353 | using cryocooler |
| 2225/03 | . characterised by the pressure level | 2227/0355 | in a closed loop |
| 2225/031 | . . Not under pressure, i.e. containing liquids or solids only | 2227/0358 | . . . by expansion |
| 2225/033 | . . Small pressure, e.g. for liquefied gas | 2227/036 | "Joule-Thompson" effect |
| 2225/035 | . . High pressure, i.e. between 10 and 80 bars | 2227/0362 | in a turbine |
| 2225/036 | . . Very high pressure, i.e. above 80 bars | 2227/0365 | . . . with recovery of heat |
| 2225/038 | . . Subatmospheric pressure | 2227/0367 | . . Localisation of heat exchange |
| 2225/04 | . characterised by other properties of handled fluid after transfer | 2227/0369 | . . . in or on a vessel |
| 2225/041 | . . Stratification | 2227/0372 | in the gas |
| 2225/042 | . . Localisation of the filling point | 2227/0374 | in the liquid |
| 2225/043 | . . . in the gas | 2227/0376 | in wall contact |
| 2225/044 | at several points, e.g. with a device for recondensing gas | 2227/0379 | inside the vessel |
| 2225/045 | with a dip tube | 2227/0381 | integrated in the wall |
| 2225/046 | . . . in the liquid | 2227/0383 | outside the vessel |
| 2225/047 | with a dip tube | 2227/0386 | with a jacket |
| 2225/048 | . . . in the solid | 2227/0388 | . . . separate |
| 2227/00 | Transfer of fluids, i.e. method or means for transferring the fluid; Heat exchange with the fluid | 2227/039 | on the pipes |
| 2227/01 | . Propulsion of the fluid | 2227/0393 | using a vaporiser |
| 2227/0107 | . . by pressurising the ullage | 2227/0395 | using a submerged heat exchanger |
| 2227/0114 | . . with vacuum injectors, e.g. venturi | 2227/0397 | . . . characterised by fins |
| 2227/0121 | . . by gravity | 2227/04 | . Methods for emptying or filling |
| 2227/0128 | . . with pumps or compressors | 2227/041 | . . vessel by vessel |
| 2227/0135 | . . . Pumps | 2227/042 | . . . with change-over from one vessel to another |
| 2227/0142 | with specified pump type, e.g. piston or impulsive type | 2227/043 | . . by pressure cascade |
| 2227/015 | with cooling of the pump | 2227/044 | . . by purging |
| 2227/0157 | . . . Compressors | 2227/045 | . . by vacuum |
| 2227/0164 | with specified compressor type, e.g. piston or impulsive type | 2227/046 | . . by even emptying or filling |
| 2227/0171 | . . . Arrangement | 2227/047 | . . by repeating a process cycle |
| 2227/0178 | in the vessel | 2227/048 | . . by maintaining residual pressure |
| 2227/0185 | comprising several pumps or compressors | 2250/00 | Accessories; Control means; Indicating, measuring or monitoring of parameters |
| 2227/0192 | . . by using a working fluid | 2250/01 | . Intermediate tanks |
| 2227/03 | . Heat exchange with the fluid | 2250/03 | . Control means |
| 2227/0302 | . . by heating | 2250/032 | . . using computers |
| 2227/0304 | . . . using an electric heater | 2250/034 | . . using wireless transmissions |
| 2227/0306 | . . . using the same fluid | 2250/036 | . . using alarms |
| 2227/0309 | . . . using another fluid | 2250/038 | . . using cameras |
| 2227/0311 | Air heating | 2250/04 | . Indicating or measuring of parameters as input values |
| 2227/0313 | by forced circulation, e.g. using a fan | 2250/0404 | . . Parameters indicated or measured |
| 2227/0316 | Water heating | 2250/0408 | . . . Level of content in the vessel |
| 2227/0318 | using seawater | 2250/0413 | with floats |
| 2227/032 | using geothermal water | 2250/0417 | with electrical means |
| 2227/0323 | in a closed loop | 2250/0421 | . . . Mass or weight of the content of the vessel |
| 2227/0325 | . . . by expansion using "Joule-Thompson" effect | 2250/0426 | . . . Volume |
| 2227/0327 | . . . with recovery of heat | 2250/043 | . . . Pressure |
| 2227/033 | . . . using solar energy | 2250/0434 | Pressure difference |
| 2227/0332 | . . . by burning a combustible | 2250/0439 | . . . Temperature |
| 2227/0334 | . . . by radiation means | 2250/0443 | . . . Flow or movement of content |
| 2227/0337 | . . by cooling | 2250/0447 | . . . Composition; Humidity |
| 2227/0339 | . . . using the same fluid | 2250/0452 | Concentration of a product |
| 2227/0341 | . . . using another fluid | 2250/0456 | Calorific or heating value |
| 2227/0344 | Air cooling | 2250/046 | Humidity |
| | | 2250/0465 | . . . Vibrations, e.g. of acoustic type |
| | | 2250/0469 | . . . Constraints, e.g. by gauges |
| | | 2250/0473 | . . . Time or time periods |
| | | 2250/0478 | . . . Position or presence |
| | | 2250/0482 | . . . Acceleration |

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| 2250/0486 | . . | Indicating or measuring characterised by the location |
| 2250/0491 | . . . | Parameters measured at or inside the vessel |
| 2250/0495 | . . . | the indicated parameter is a converted measured parameter |
| 2250/06 | . . | Controlling or regulating of parameters as output values |
| 2250/0605 | . . | Parameters |
| 2250/061 | . . . | Level of content in the vessel |
| 2250/0615 | . . . | Mass or weight of the content of the vessel |
| 2250/0621 | . . . | Volume |
| 2250/0626 | . . . | Pressure |
| 2250/0631 | . . . | Temperature |
| 2250/0636 | . . . | Flow or movement of content |
| 2250/0642 | . . . | Composition; Humidity |
| 2250/0647 | | Concentration of a product |
| 2250/0652 | | Calorific or heating value |
| 2250/0657 | | Humidity |
| 2250/0663 | . . . | Vibrations, e.g. of acoustic type |
| 2250/0668 | . . . | Constraints, e.g. by gauges |
| 2250/0673 | . . . | Time or time periods |
| 2250/0678 | . . . | Position or presence |
| 2250/0684 | . . . | Acceleration |
| 2250/0689 | . . | Methods for controlling or regulating |
| 2250/0694 | . . . | with calculations |
| 2250/07 | . . | Actions triggered by measured parameters |
| 2250/072 | . . | Action when predefined value is reached |
| 2250/075 | . . . | when full |
| 2250/077 | . . . | when empty |

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| 2260/00 | Purposes of gas storage and gas handling |
| 2260/01 | . Improving mechanical properties or manufacturing |
| 2260/011 | . . Improving strength |
| 2260/012 | . . Reducing weight |
| 2260/013 | . . Reducing manufacturing time or effort |
| 2260/015 | . . Facilitating maintenance |
| 2260/016 | . . Preventing slosh |
| 2260/017 | . . by calculation |
| 2260/018 | . . Adapting dimensions |
| 2260/02 | . Improving properties related to fluid or fluid transfer |
| 2260/021 | . . Avoiding over pressurising |
| 2260/022 | . . Avoiding overfilling |
| 2260/023 | . . Avoiding overheating |
| 2260/024 | . . Improving metering |
| 2260/025 | . . Reducing transfer time |
| 2260/026 | . . by calculation |
| 2260/027 | . . Making transfer independent of vessel orientation |
| 2260/028 | . . Avoiding unauthorised transfer |
| 2260/03 | . Dealing with losses |
| 2260/031 | . . due to heat transfer |
| 2260/032 | . . . Avoiding freezing or defrosting |
| 2260/033 | . . . by enhancing insulation |
| 2260/035 | . . of fluid |
| 2260/036 | . . . Avoiding leaks |
| 2260/037 | . . . Handling leaked fluid |
| 2260/038 | . . . Detecting leaked fluid |
| 2260/04 | . Reducing risks and environmental impact |
| 2260/042 | . . Reducing risk of explosion |
| 2260/044 | . . Avoiding pollution or contamination |

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| 2260/046 | . . | Enhancing energy recovery |
| 2260/048 | . . | Refurbishing |
| 2260/05 | . . | Improving chemical properties |
| 2260/053 | . . | Reducing corrosion |
| 2260/056 | . . | Improving fluid characteristics |

Purposes or effects

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| 2265/00 | Effects achieved by gas storage or gas handling |
| 2265/01 | . Purifying the fluid |
| 2265/012 | . . by filtering |
| 2265/015 | . . by separating |
| 2265/017 | . . . different phases of a same fluid |
| 2265/02 | . Mixing fluids |
| 2265/022 | . . identical fluid |
| 2265/025 | . . different fluids |
| 2265/027 | . . . with odorizing |
| 2265/03 | . Treating the boil-off |
| 2265/031 | . . by discharge |
| 2265/032 | . . by recovery |
| 2265/033 | . . . with cooling |
| 2265/034 | with condensing the gas phase |
| 2265/035 | with subcooling the liquid phase |
| 2265/036 | . . . with heating |
| 2265/037 | . . . with pressurising |
| 2265/038 | . . . with expanding |
| 2265/04 | . using an independent energy source, e.g. battery |
| 2265/05 | . Regasification |
| 2265/06 | . Fluid distribution |
| 2265/061 | . . for supply of supplying vehicles |
| 2265/063 | . . for supply of refuelling stations |
| 2265/065 | . . for refuelling vehicle fuel tanks |
| 2265/066 | . . for feeding engines for propulsion |
| 2265/068 | . . Distribution pipeline networks |
| 2265/07 | . Generating electrical power as side effect |

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| 2270/00 | Applications |
| 2270/01 | . for fluid transport or storage |
| 2270/0102 | . . on or in the water |
| 2270/0105 | . . . Ships |
| 2270/0107 | Wall panels |
| 2270/011 | . . . Barges |
| 2270/0113 | floating |
| 2270/0115 | immersed |
| 2270/0118 | . . . Offshore |
| 2270/0121 | Platforms |
| 2270/0123 | Terminals |
| 2270/0126 | Buoys |
| 2270/0128 | Storage in depth |
| 2270/0131 | . . . Submarines |
| 2270/0134 | . . placed above the ground |
| 2270/0136 | . . . Terminals |
| 2270/0139 | . . . Fuel stations |
| 2270/0142 | . . placed underground |
| 2270/0144 | . . . Type of cavity |
| 2270/0147 | by burying vessels |
| 2270/0149 | by digging cavities |
| 2270/0152 | Salt caverns |
| 2270/0155 | by using natural cavities |
| 2270/0157 | . . . Location of cavity |
| 2270/016 | onshore |
| 2270/0163 | offshore |

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| 2270/0165 | . . | on the road |
| 2270/0168 | . . . | by vehicles |
| 2270/0171 | | Trucks |
| 2270/0173 | | Railways |
| 2270/0176 | | Buses |
| 2270/0178 | | Cars |
| 2270/0181 | . . . | Airbags |
| 2270/0184 | . . . | Fuel cells |
| 2270/0186 | . . | in the air or in space |
| 2270/0189 | . . . | Planes |
| 2270/0192 | . . . | Hot air balloons |
| 2270/0194 | . . . | for use under microgravity conditions, e.g. space |
| 2270/0197 | . . . | Rockets |
| 2270/02 | . | for medical applications |
| 2270/025 | . . | Breathing |
| 2270/05 | . | for industrial use |
| 2270/0509 | . . | "Dewar" vessels |
| 2270/0518 | . . | Semiconductors |
| 2270/0527 | . . | Superconductors |
| 2270/0536 | . . . | Magnetic resonance imaging |
| 2270/0545 | . . | Tools |
| 2270/0554 | . . | Hydraulic applications |
| 2270/0563 | . . | Pneumatic applications |
| 2270/0572 | . . | Isostatic presses |
| 2270/0581 | . . | Power plants |
| 2270/059 | . . | Mass bottling, e.g. merry belts |
| 2270/07 | . | for household use |
| 2270/0709 | . . | Camping gas |
| 2270/0718 | . . | Aerosols |
| 2270/0727 | . . | Thermos flasks |
| 2270/0736 | . . | Capsules, e.g. CO ₂ |
| 2270/0745 | . . | Gas bottles |
| 2270/0754 | . . | Fire extinguishers |
| 2270/0763 | . . | Fuel cells |
| 2270/0772 | . . | Inflation devices, e.g. for rescue vests or tyres |
| 2270/0781 | . . | Diving equipments |
| 2270/079 | . . | Respiration devices for rescuing |