

CPC COOPERATIVE PATENT CLASSIFICATION

G PHYSICS (NOTES omitted)

NUCLEONICS

G21 NUCLEAR PHYSICS; NUCLEAR ENGINEERING

G21F PROTECTION AGAINST X-RADIATION, GAMMA RADIATION, CORPUSCULAR RADIATION OR PARTICLE BOMBARDMENT; TREATING RADIOACTIVELY CONTAMINATED MATERIAL; DECONTAMINATION ARRANGEMENTS

THEREFOR (radiation protection by pharmaceutical means [A61K 8/00](#), [A61Q 17/04](#); in cosmonautic vehicles [B64G 1/54](#); combined with a reactor [G21C 11/00](#); combined with X-ray tubes [H01J 35/16](#); combined with X-ray apparatus [H05G 1/02](#))

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.

1/00	Shielding characterised by the composition of the materials	5/018	. . Syringe shields or holders (syringe shielding for applying radioactive material to the body {A61M 5/1785})
1/02	. Selection of uniform shielding materials	5/02	. with provision for restricted exposure of a radiation source within the container
1/023	. . {Liquids}	5/04	. . Means for controlling exposure, e.g. time, size of aperture (controlling exposure to X-radiation H05G 1/30)
1/026	. . {Semi-liquids, gels, pastes}	5/06	. Details of, or accessories to, the containers
1/04	. . Concretes; Other hydraulic hardening materials	5/065	. . {Containers provided with a rotatable drum}
1/042	. . . {Concretes combined with other materials dispersed in the carrier}	5/08	. . Shock-absorbers, e.g. impact buffers for containers
1/045 {with organic substances}	5/10	. . Heat-removal systems, e.g. using circulating fluid or cooling fins
1/047 {with metals}	5/12	. . Closures for containers; Sealing arrangements
1/06	. . Ceramics; Glasses; Refractories (cermets G21F 1/08)	5/125	. . . {Means to monitor or detect the leak-tightness of the closure}
1/08	. . Metals; Alloys; Cermets, i.e. sintered mixtures of ceramics and metals	5/14	. . Devices for handling containers or shipping-casks, e.g. transporting devices {loading and unloading, filling of containers (cranes, load-engaging elements or devices for cranes, capstans, winches or tackles B66C)}
1/085	. . . {Heavy metals or alloys}	7/00	Shielded cells or rooms (chambers provided with manipulating devices in general B25J)
1/10	. . Organic substances; Dispersions in organic carriers	7/005	. Shielded passages through walls; Locks; Transferring devices between rooms (between glove-boxes G21F 7/047)
1/103	. . . {Dispersions in organic carriers}	7/01	. . Transferring by fluidic means
1/106 {metallic dispersions}	7/015	. Room atmosphere, temperature or pressure control devices
1/12	. Laminated shielding materials	7/02	. Observation devices permitting vision but shielding the observer ({ optical systems per se G02 })
1/125	. . {comprising metals}	7/03	. . Windows, e.g. shielded
3/00	Shielding characterised by its physical form, e.g. granules, or shape of the material	7/04	. Shielded glove-boxes (glove-boxes in general B25J 21/02)
3/02	. Clothing	7/041	. . {Glove-box atmosphere, temperature or pressure control devices (in general G21F 7/015)}
3/025	. . Clothing completely surrounding the wearer	7/043	. . {Lighting}
3/03	. . Aprons		
3/035	. . Gloves (mounting means on glove boxes G21F 7/053)		
3/04	. Bricks; Shields made up therefrom		
5/00	Transportable or portable shielded containers		
5/002	. Containers for fluid radioactive wastes		
5/005	. Containers for solid radioactive wastes, e.g. for ultimate disposal		
5/008	. . Containers for fuel elements		
5/012	. . . Fuel element racks in the containers		
5/015	. for storing radioactive sources, e.g. source carriers for irradiation units; Radioisotope containers		

- 7/045 . . {Transportable glove-boxes}
- 7/047 . . Shielded passages; Closing or transferring means between glove-boxes
- 7/053 . . Glove mounting means
- 7/06 . . Structural combination with remotely controlled apparatus, e.g. with manipulators ([manipulators B25J](#); remote control in general [G05](#))
- 7/061 . . {Integrated manipulators}
- 7/062 . . . {mounted in a wall, e.g. pivotably mounted (in general [F16J 15/50](#), [F16J 15/52](#))}
- 7/063 . . {Remotely manipulated measuring or controlling devices (combined with window [G21F 7/02](#))}
- 7/065 . . {Remotely manipulated machinery}
- 7/066 . . {Remotely manipulated tools}
- 7/067 . . {Transferring devices within cells or boxes (between cells [G21F 7/005](#), [G21F 7/047](#))}
- 7/068 . . {Remotely manipulating devices for fluids}
- 9/00 Treating radioactively contaminated material; Decontamination arrangements therefor**
- 9/001 . {Decontamination of contaminated objects, apparatus, clothes, food; Preventing contamination thereof}
- 9/002 . . {Decontamination of the surface of objects with chemical or electrochemical processes}
- 9/004 . . . {of metallic surfaces}
- 9/005 . . {Decontamination of the surface of objects by ablation}
- 9/007 . {Recovery of isotopes from radioactive waste, e.g. fission products ([separating different isotopes of the same chemical element B01D 59/00](#))}
- 9/008 . {Apparatus specially adapted for mixing or disposing radioactively contaminated material ([G21F 9/305](#) and [G21F 9/308](#) take precedence)}
- 9/02 . Treating gases
- 9/04 . Treating liquids
- NOTES**
- 1. In this group the following term is used with the meaning indicated:
 - "liquids" mean compounds being liquid under normal temperature and pressure conditions.
- 2. Molten metals and corium are classified as solids. Muds are classified as liquids as long as they are not dried
- 9/06 . . Processing ([separating different isotopes of the same chemical element B01D 59/00](#))
- 9/08 . . . by evaporation; by distillation
- 9/10 . . . by flocculation
- 9/12 . . . by absorption; by adsorption; by ion-exchange
- 9/125 {by solvent extraction}
- 9/14 . . . by incineration; by calcination, e.g. desiccation
- 9/16 . . . by fixation in stable solid media {([G21F 9/305](#) takes precedence)}
- 9/162 {in an inorganic matrix, e.g. clays, zeolites}
- 9/165 {Cement or cement-like matrix (compositional aspects [C04B](#))}
- 9/167 {in polymeric matrix, e.g. resins, tars}
- 9/18 . . . by biological processes
- 9/20 . . Disposal of liquid waste
- 9/22 . . . by storage in a tank or other container
- 9/24 . . . by storage in the ground; by storage under water, e.g. in ocean
- 9/26 . . . by dilution in water, e.g. in ocean, in stream
- 9/28 . Treating solids
- 9/30 . . Processing ([separating different isotopes of the same chemical element B01D 59/00](#))
- 9/301 . . . {by fixation in stable solid media}
- 9/302 {in an inorganic matrix}
- 9/304 {Cement or cement-like matrix (compositional aspects [C04B](#))}
- 9/305 {Glass or glass like matrix ([C03B 5/005](#) takes precedence; compositional aspects [C03C](#))}
- 9/307 {in polymeric matrix, e.g. resins, tars}
- 9/308 . . . {by melting the waste ([G21F 9/305](#), [G21F 9/32](#) take precedence)}
- 9/32 . . . by incineration
- 9/34 . . Disposal of solid waste
- 9/36 . . . by packaging; by baling