

# 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.

<b>1/00</b>	<b>Shielding characterised by the composition of the materials</b>	5/018	. . Syringe shields or holders ( <a href="#">syringe shielding for applying radioactive material to the body</a> <a href="#">{A61M 5/1785}</a> )
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 ( <a href="#">controlling exposure to X-radiation</a> <a href="#">H05G 1/30</a> )
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 ( <a href="#">cermets</a> <a href="#">G21F 1/08</a> )	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 ( <a href="#">cranes, load-engaging elements or devices for cranes, capstans, winches or tackles</a> <a href="#">B66C</a> )}
1/085	. . . {Heavy metals or alloys}		
1/10	. . Organic substances; Dispersions in organic carriers		
1/103	. . . {Dispersions in organic carriers}		
1/106	. . . . {metallic dispersions}		
1/12	. Laminated shielding materials		
1/125	. . {comprising metals}		
<b>3/00</b>	<b>Shielding characterised by its physical form, e.g. granules, or shape of the material</b>	<b>7/00</b>	<b>Shielded cells or rooms</b>
3/02	. Clothing	7/005	. Shielded passages through walls; Locks; Transferring devices between rooms ( <a href="#">between glove-boxes</a> <a href="#">G21F 7/047</a> )
3/025	. . Clothing completely surrounding the wearer	7/01	. . Transferring by fluidic means
3/03	. . Aprons	7/015	. Room atmosphere, temperature or pressure control devices
3/035	. . Gloves ( <a href="#">mounting means on glove boxes</a> <a href="#">G21F 7/053</a> )	7/02	. Observation devices permitting vision but shielding the observer {( <a href="#">optical systems per se</a> <a href="#">G02</a> )}
3/04	. Bricks; Shields made up therefrom	7/03	. . Windows, e.g. shielded
<b>5/00</b>	<b>Transportable or portable shielded containers</b>	7/04	. Shielded glove-boxes ( <a href="#">glove-boxes in general</a> <a href="#">B25J 21/02</a> )
5/002	. Containers for fluid radioactive wastes	7/041	. . {Glove-box atmosphere, temperature or pressure control devices ( <a href="#">in general</a> <a href="#">G21F 7/015</a> )}
5/005	. Containers for solid radioactive wastes, e.g. for ultimate disposal	7/043	. . {Lighting}
5/008	. . Containers for fuel elements	7/045	. . {Transportable glove-boxes}
5/012	. . . Fuel element racks in the containers		
5/015	. for storing radioactive sources, e.g. source carriers for irradiation units; Radioisotope containers		

- 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
- 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}
- 9/30 . . 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

**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