

## SECTION C – CHEMISTRY; METALLURGY

### Note

In section C, the definitions of groups of chemical elements are as follows:

**Alkali metals:** Li, Na, K, Rb, Cs, Fr

**Alkaline earth metals:** Ca, Sr, Ba, Ra

**Lanthanides:** elements with atomic numbers 57 to 71 inclusive

**Rare earths:** Sc, Y, Lanthanides

**Actinides:** elements with atomic numbers 89 to 103 inclusive

**Refractory metals:** Ti, V, Cr, Zr, Nb, Mo, Hf, Ta, W

**Halogens:** F, Cl, Br, I, At

**Noble gases:** He, Ne, Ar, Kr, Xe, Rn

**Platinum group:** Os, Ir, Pt, Ru, Rh, Pd

**Noble metals:** Ag, Au, Platinum group

**Light metals:** alkali metals, alkaline earth metals, Be, Al, Mg

**Heavy metals:** metals other than light metals

**Iron group:** Fe, Co, Ni

**Non-metals:** H, B, C, Si, N, P, O, S, Se, Te, noble gases, halogens

**Metals:** elements other than non-metals

**Transition elements:** elements with atomic numbers 21 to 30 inclusive, 39 to 48 inclusive, 57 to 80 inclusive, 89 upwards

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(References and notes omitted)

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## Notes

The following notes are meant to assist in the use of this part of the classification scheme. They must not be read as modifying in any way the elaborations.

- (1) Section C covers:
- (a) pure chemistry, which covers inorganic compounds, organic compounds, macromolecular compounds, and their methods of preparation;
  - (b) applied chemistry, which covers compositions containing the above compounds, such as: glass, ceramics, fertilisers, plastics compositions, paints, products of the petroleum industry. It also covers certain compositions on account of their having particular properties rendering them suitable for certain purposes, as in the case of explosives, dyestuffs, adhesives, lubricants, and detergents;
  - (c) certain marginal industries, such as the manufacture of coke and of solid or gaseous fuels, the production and refining of oils, fats and waxes, the fermentation industry (e.g., brewing and wine-making), the sugar industry;
  - (d) certain operations or treatments, which are either purely mechanical, e.g., the mechanical treatment of leather and skins, or partly mechanical, e.g., the treatment of water or the prevention of corrosion in general;
  - (e) metallurgy, ferrous or non-ferrous alloys.
- (2)
- (a) In the case of operations, treatments, products or articles having both a chemical and a non-chemical part or aspect, the general rule is that the chemical part or aspect is covered by section C.
  - (b) In some of these cases, the chemical part or aspect brings with it a non-chemical one, even though purely mechanical, because this latter aspect either is essential to the operation or treatment or constitutes an important element thereof. It has seemed, in fact, more logical not to dissociate the different parts or aspects of a coherent whole. This is the case for applied chemistry and for the industries, operations and treatments mentioned in Notes (1)(c), (d) and (e). For example, furnaces peculiar to the manufacture of glass are covered by class **C 03** and not by class **F 27**.
  - (c) There are, however, some exceptions in which the mechanical (or non-chemical) aspect carries with it the chemical aspect, for example:
    - Certain extractive processes, in subclass **A 61 K**;
    - The chemical purification of air, in subclass **A 61 L**;
    - Chemical methods of fire-fighting, in subclass **A 62 D**;
    - Chemical processes and apparatus, in class **B 01**;
    - Impregnation of wood, in subclass **B 27 K**;
    - Chemical methods of analysis or testing, in subclass **G 01 N**;
    - Photographic materials and processes, in class **G 03**, and, generally, the chemical treatment of textiles and the production of cellulose or paper, in section D.
  - (d) In still other cases, the pure chemical aspect is covered by section C and the applied chemical aspect by another section, such as A, B or F, e.g., the use of a substance or composition for:
    - treatment of plants or animals, covered by subclass **A 01 N**;
    - foodstuffs, covered by class **A 23**;
    - ammunition or explosives, covered by class **F 42**.
  - (e) When the chemical and mechanical aspects are so closely interlocked that a neat and simple division is not possible, or when certain mechanical processes follow as a natural or logical continuation of a chemical treatment, section C may cover, in addition to the chemical aspect, a part only of the mechanical aspect, e.g., after-treatment of artificial stone, covered by class **C 04**. In this latter case, a note or a reference is usually given to make the position clear, even if sometimes the division is rather arbitrary.