The University of Hertfordshire Agricultural Substances Databases - Description of United Nations Packaging Marks

Many chemicals and other substances exhibit a range of properties that may be considered hazardous. For example they may be corrosive, explosive, present a fire risk or may be toxic. However, dangerous substances also include everyday products such as paints, solvents and pesticides. The transport of such goods is regulated to ensure the safety of workers and operators, of the vehicle being used to transport them (aircraft, ship etc.), and of other goods (such as foodstuffs) being transported. For example, solvents must be in sealed airtight containers otherwise the fumes could affect people in the close vicinity. Other substances may not be harmful unless they come into contact with fire or water, but for safety purposes these are also classified as dangerous goods.

When transporting dangerous substances, in most cases, the packaging has to meet certain standards defined by the United Nations (UN). The international agreements for the carriage of dangerous goods require packaging to be of a design-type certified by a national competent authority. This involves testing the packaging against the appropriate UN specification to ensure its suitability for the carriage of certain dangerous goods. Such packaging is often referred to as 'type-approved', 'UN Approved' or 'UN certified' and marked in a particular way, prefixed by the UN logo and followed by codes.

The UN marking system indicates several characteristics of the packaging, as well as information on the test levels the packaging has successfully passed. Because these test levels are related to the hazard level and physical and chemical characteristics of the substance to be filled, the markings also indicate some of the properties of the materials that may be packed in each container. Within the PPDB, the Packaging Group (e.g. I, II, or III) is given. Information on this is provided below alongside other information on the UN Codes.

Typically the code may look something like:

UN	1A2 / Y1.8 / 100 / 10 / UK / OA30900

First block (e.g. 1A2) **Type of container, Material of Construction, Category within type**	**Type of container:** 1: Drums or Pails, 2: Barrels, 3: Jerricans, 4: Boxes, 5: Bags, 6: Composite packaging **Material of Construction:** A: Steel, B: Aluminium, C: Wood, D: Fibre, E: Plastic **Category within type:** 1: Closed head, 2: Open head
Second block (e.g. Y1.8) **Packaging group, density of material contained/gross weight**	**Packaging group:** X. for Packaging Group I, II and III Y. for Packaging Group II and III Z. For Packaging Group III Packaging Group I: Great Danger - high hazard level Packaging Group II: Medium Danger - medium hazard level Packaging Group III: Minor Danger - low hazard level **Density or specific gravity of material packed / gross weight:** For liquids or gels this marking will show the density of specific gravity of the substance. For packaging intended for solids or that have inner packaging, this marking will indicate the maximum gross mass (weight) in kilograms.
Third block (e.g. 100)	**Hydraulic pressure** (kPa) or, for packaging intended for Solids or that have inner packaging, an "S" in upper case will follow the gross mass.
Fourth block (e.g. 10)	**Current year** e.g. 10 = 2010
Fifth block (e.g. UK)	**Country where container was manufactured** e.g. UK = United Kingdom, F = France
Final block (e.g. OA30600)	**Code for manufacturing plant**