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gel

Non-fluid colloidal network or polymer network that is expanded throughout its whole volume by a fluid.

Notes:

1. A gel has a finite, usually rather small, yield stress.
2. A gel can contain:
    1. a covalent polymer network, e.g., a network formed by crosslinking polymer chains or by non-linear polymerization;
    2. a polymer network formed through the physical aggregation of polymer chains, caused by hydrogen bonds, crystallization, helix formation, complexation, *etc*, that results in regions of local order acting as the network junction points. The resulting swollen network may be termed a thermoreversible gel if the regions of local order are thermally reversible;
    3. a polymer network formed through glassy junction points, e.g., one based on block copolymers. If the junction points are thermally reversible glassy domains, the resulting swollen network may also be termed a thermoreversible gel;
    4. lamellar structures including mesophases, e.g., soap gels, phospholipids and clays;
    5. particulate disordered structures, e.g., a flocculent precipitate usually consisting of particles with large geometrical anisotropy, such as in V_2O_5 gels and globular or fibrillar protein gels.
3. Corrected from previous definition where the definition is *via* the property identified in Note 1 (above) rather than of the structural characteristics that describe a gel.

Source:

PAC, 2007, *79*, 1801 *(Definitions of terms relating to the structure and processing of sols, gels, networks, and inorganic-organic hybrid materials (IUPAC Recommendations 2007))* on page 1806

