

# HACKH'S CHEMICAL DICTIONARY

[*American and British Usage*]

*Containing the Words Generally Used in Chemistry,  
and Many of the Terms Used in the Related  
Sciences of Physics, Astrophysics, Mineralogy,  
Pharmacy, Agriculture, Biology,  
Medicine, Engineering, etc.*

*Based on Recent Chemical Literature*

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recovered on evaporation, the solvent by  
n. Cf. *chemical s.* **physiological-** Iso-  
**saturated-** A s. that normally contains  
imum amount of substance able to be  
**solid-** See *solid solution, sosoloid*.  
A s. that contains a definite amount of  
e dissolved; as, a molar. **standardized-**  
isted to a known concentration. **super-**  
- A s. that contains a greater quantity of  
n can normally be dissolved at a given  
ure; on slow cooling, the excess precipitates  
table conditions. **test-** T.S. A reagent s.  
**tic-** V.S. A standard analytical s., usually  
g  $\frac{1}{2}$ , or  $\frac{1}{10}$  mole of a substance dissolved  
of water.

**ing.** Winning soluble salts (as potassium  
by pumping water into the formation and  
the resulting solution. Cf. *Frasch*  
**s. pressure.** The tendency of atoms or  
s to mix with a liquid, or to dissolve in it;  
l by the osmotic pressure. **s. tension.**  
ency of atoms or molecules to dissolve in  
with ionization; measured by the electro-  
orce. See *Nernst's theory*. **s. theory.** See  
*theory, Arrhenius' theory*.

molecular or ionic complex of molecules  
solvent with those of solute; as  $\text{Cl}(\text{H}_2\text{O})_x^-$ .  
are surrounded by a zone of oriented  
molecules. **crystalline-** A crystal containing  
as part of its lattice. **s. theory.**  
ormalities of solutions are due to the  
n of complexes between the ions or  
s of the solute and solvent. Cf. *hydration*.  
A combination between solute and solvent;  
ter is water, hydrates or hydrated ions are  
e.g.,  $\text{M}(\text{H}_2\text{O})_x$ .

**ism.** The formation, by molecular  
of a colored complex (solvate) between  
molecules of organic compounds and  
other compounds.

**ist.** 1838-1922. Belgian industrial che-  
**process.** Making sodium carbonate  
um chloride by treating sodium chloride  
monia and carbon dioxide. The sodium  
ate produced is heated, and some carbon  
recovered; the ammonia is recovered by  
agnesia.

(1) That component of a homogeneous  
which is excess. (2) A liquid which  
another substance (solute), generally a  
hout any change in chemical composition;  
r containing sugar. (3) A liquid that  
a substance by chemical reaction; as, acids  
als. **acid-** A s. that acts as an acid by  
proton to the solute. **aqueous-** Water.

**ng-** A s. whose molecules form complexes;  
Cf. *bond*. **basic-** A s. that acts as a  
aining a proton from the solute. **chem-**

(3). **ionizing-** See *polar-s.* **lacquer-**  
liquids used to dissolve resins and nitro-  
*low-boiling-* b. below 100 (alcohol).

*boiling-* b. near 125 (toluene). *high-*  
b. 150-200 (xylene). *plasticizers and*  
b. near 300 (camphor). **molten-** Flux.

**iating-** A s. that does not form complexes  
its molecules or ions and the solute; as,  
**nonaqueous-** A solvent other than  
**nonionizing-** Nonpolar. **nonpolar-** A s.

that does not conduct an electric current; as,  
hydrocarbons. **normal-** Nonassociating. **physical-**  
A s. that does not react chemically with the solute.  
**polar-** A s. that produces electrically conducting  
solutions (as, water), and causes dissociation of the  
solute into ions. **two-type-** A s. having 2 groups  
which confer s. properties; as alcohol-ethers,  
 $\text{HO}\cdot\text{R}\cdot\text{O}\cdot\text{R}$ , e.g., Cellosolve. **universal-** Aqua regia.  
**s. action.** A process of making substances  
water-soluble

**solvolytic.** The effect of the acid or basic character  
of a solvent on the ionization of a salt dissolved in it.  
**solvolytic.** Pertaining to solvation. **s. dissociation.**  
Ionization in a nonaqueous solution. Cf. *solvate*  
theory.

**sombrierite.** A "hard" mineral phosphate (35%  
phosphorus pentoxide); a source of phosphorus.

**Sommelet reaction.** The production of benzaldehyde  
by the reaction between benzylamine and form-  
aldehyde, preferably in presence of hexamine.

**Sommerfeld, Arnold.** 1868-1951. German physicist;  
developed the quantum theory of atomic structure.  
**S. notation.** See *quantum numbers*.

**somnal.**  $\text{C}_7\text{H}_{12}\text{NO}_3\text{Cl}_3 = 264.49$ . An ethyl deriva-  
tive of chloral urethane; a hypnotic and diuretic.  
**somnifacient.** A hypnotic, q.v.

**Somnifene.** Trademark for a soluble barbiturate  
sedative-hypnotic.

**somnirol.**  $\text{C}_{22}\text{H}_{44}\text{O}_7 = 540.34$ . A monohydric al-  
cohol of *Withania* species (Solanaceae).

**Sommitol.**  $\text{C}_{33}\text{H}_{46}\text{O}_7 = 554.32$ . Trade name for a  
alcohol from *Withania* species (Solanaceae).

**Somnol.**  $\text{C}_9\text{H}_{11}\text{O}_6\text{Cl}_9 = 518.2$ . Trade name for  
chlorethanal alcoholate; a hypnotic.

**Somnos.** Trademark for chlorethanal alcohol.

**soneryl.** Neonal. Butobarbitone (neonal).

**sonic.** Phonic. Cf. *sound*.

**Sonnenschein, Franz Leopold.** 1819-1879. German  
forensic analyst. **S.'s reagent.** A solution of  
phosphomolybdic acid forms a yellow precipitate  
with the sulfates of alkaloids.

**sonoluminescence.** Luminescence induced by sound  
waves.

**sonometer.** Phonometer. An instrument to meas-  
ure sound vibrations.

**sonora gum.** The exudations of the creosote bush,  
*Covillea tridentata* (Mexico).

**soot.** An impure black carbon containing oily and  
empyreumatic compounds from the incomplete  
combustion of resinous materials or wood. It  
contains hydrocarbons, and if derived from coal,  
ammonium sulfate. Cf. *lampblack*.

**sophol.** A yellow compound of silver and methy-  
lenenucleinic acid; used medicinally.

**sophora.** Coral bean. The poisonous seeds of  
*Sophora* species (Leguminosae), India. **S. tomen-**  
**tosa.** A leguminous shrub (Japan); a remedy for  
cholera and diarrhea.

**sophorine.** An alkaloid from *Sophora* species.  
Colorless liquid resembling cytosine and matrine.  
Cf. *kuhseng*.

**soporific.** An agent that produces deep sleep. Cf.  
*hypnotic*.

**sorbet.** Sherbet.

**sorbic acid.**  $\text{Me}\cdot\text{CH}:\text{CH}\cdot\text{CH}\cdot\text{CH}\cdot\text{COOH} = 112.1$ .  
Hexadienic acid, pentadienecarboxylic acid, 2,4-  
hexadienoic acid\*, from the unripe berries of  
mountain ash, *Sorbus*. Colorless needles, m.134,

b.228 (decomp.), soluble in water; a selective  
fungistatic for certain foods. **hydro-** Hexenic  
acid\*. **methylenedioxyphenyl-** Piperic acid. **para-**  
A lactone-like body forming sorbic acid when  
heated with acid or alkali.

**sorbin.** Sorbinose.

**sorbinose.**  $\text{C}_6\text{H}_{12}\text{O}_6 = 180.1$ . Sorbin, 1,3,4,5,6-  
pentahydroxy-2-hexanone\*, sorbose. An opti-  
cally active carbohydrate from the fruits of  
mountain ash, *Sorbus*. Colorless rhombs, m.154;  
slightly soluble in water.

**sorbite.** (1) Sorbitol. (2) A mixture of ferrite and  
cementite, with conglomerations of carbon in  
steel; a transition form between pearlite and  
troostite.

**sorbitol.**  $\text{C}_6\text{H}_{14}\text{O}_6\frac{1}{2}\text{H}_2\text{O} = 191.1$ . Sorbite, 1,2,3,  
4,5,6-hexanehexol\*. An alcohol isomer of man-  
nitol from *Sorbus aucuparia*. Colorless crystals,  
m.111, soluble in water. Used chiefly for the  
preparation of ascorbic acid (U.S.P.); also as a  
humectant and in surfactants, pharmaceuticals,  
foods and rigid polymethane foams.

**Sorbol.**  $\text{C}_{34}\text{H}_{70}\text{O} = 494.5$ . Trade name for an  
alcohol, m.78, from the wax of the berries of  
*Sorbus aucuparia*.

**sorbose.** Sorbinose.

**sorbus.** Rowan tree, mountain ash. The tree  
*Pyrus* (*Sorbus* or *Mespilus*) *aucuparia* (Rosaceae).  
A decoction of the bark contains sorbitol and  
sorbinose; used to treat diarrhea.

**Sorel cement.**  $\text{MgO}\cdot\text{MgCl}_2\cdot 11\text{H}_2\text{O}$ . A hard, quick-  
setting mixture of magnesium oxide and a con-  
centrated solution of magnesium chloride. **S.**  
**dental cement.** A mixture of zinc oxide, zinc  
chloride, and fine sand. **S. floor cement.** A  
mixture of magnesium oxide, zinc chloride, and  
portland cement, used for floors; 10% copper  
powder makes it waterproof.

**Sørensen, Søren P. L.** 1868-1939. Danish chemist.  
**S. indicators.** A group of hydrogen-ion-concentra-  
tion indicators, q.v. **S. phosphate.** Dibasic so-  
dium phosphate. **S. symbols.** See *pH*. **S. value.**  
Hydrogen-ion concentration.

**Soret effect, S. principle.** Ludwig phenomenon.  
When differences of temperature are maintained  
in a salt solution, the solute will concentrate in the  
coolest parts.

**sorethytan.** U.S.P. name for polysorbate-80.

**sorghum.** A cane, *Andropogon sorghum* or *Sorghum*  
*vulgare*, from which a sugar and Indian millet  
(African, durra) are obtained.

**sorgo.** *Sorghum vulgare*.

**sorption.** A reaction on a surface, especially *absorp-*  
*tion*, q.v., or solution, *adsorption*, q.v., and *persorp-*  
*tion* (permeation into a very porous solid). Cf.  
*monomolecular film*. **ab-** See *absorption*. **ad-** See  
*adsorption*. **re-** See *resorption*. Cf. *zone*.

**sorrel.** The leaves of *Rumex acetosa* (Polygonaceae);  
a refrigerant and diuretic. **s. salt.** Potassium  
bioxalate.

**sosoloid.** Solid solution. One solid phase dispersed  
in another. See *colloidal systems*.

**Soubeiran, Eugène.** 1797-1858. French apothecary;  
discoverer of chloroform.

**sound.** (1) Air oscillations or vibrations that affect  
the ear and are rendered audible. Cf. *musical*  
*notes*. (2) Vibrations in air or other medium which  
may or may not be audible; as, *infraphonic* (longer