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## Methanol (ch3oh) in water

The simplest alcohol, one carbon hydrocarbon, where the OH group replaced hydrogen so as not to be confused with menthol, methanol, methadone or metabolism. Methanol Names Pronunciation /ˈmɛθənoʊl/ Preferred IUPAC name Methanol[1] Other names CarbinolColumbian spirits HydroxymethaneMeOHMethyl alcoholMethyl hydroxideMethylic alcoholMethylolMethylene hydratePyroligneous spiritWood alcoholWood naphthaWood spirit Identifiers CAS Number 67-56-1 Y 3D model (JSmol) Interactive image 3D Met B01170 Beilstein Reference 1098229 ChEBI CHEBI:17790 Y ChEMBL ChEMBL14688 Y ChemSpider 864 Y ECHA InfoCard 100.000.599 EC Number 200-659-6 Gmelin Reference 449 KEGG D02309 Y MeSH Methanol PubChem CID 887 RTECS number PC1400000 UNII Y4576JWI15 Y UN number 1230 CompTox Dashboard (EPA) DTXSID2021731 InChI InChI=1S/CH4O/c1-2/h2H,1H3 YKey: OKKJLVBELUTLKV-UHFFFAOYSA-N YInChI=1/CH4O/c1-2/h2H,1H3Key: OKKJLVBELUTLKV-UHFFFAOYAX SMILES CO Properties Chemical formula CH3OH or CH4O Molar mass 32.04 g mol<sup>-1</sup> Appearance Colourless liquid Odor Sweet and pungent Density 0.792 g/cm<sup>3</sup>[2] Melting point −97.6 °C (−143.7 °F; 175.6 K) Boiling point 64.7 °C (148.5 °F; 337.8 K) Solubility in water miscible log P −0.69 Vapor pressure 13.02 kPa (at 20 °C) Acidity (pKa) 15.5[3] Conjugate acid Methyloxonium[4] Conjugate base Methanolate[5] Magnetic susceptibility (χ) −21.40·10<sup>-6</sup> cm<sup>3</sup>/mole Refractive index (nD) 1.33141[6] Viscosity 0.6 [7] Dipole torque 1.69 D Hazards[12][13] The main hazards of methanol and its vapor are flammable. Moderately Toxicity to small animals - High toxicity to large animals and humans - can be deadly/fatal or cause blindness and damage to the liver, kidneys and heart if swallowed - Toxicity effects from repeated over-exposure have accumulative effects on the central nervous system, especially the optic nerve - Symptoms can be delayed, become severe after 12-18 hours, and linger for several days after exposure [9] Data protection sheet See: data page[1] GHS pictograms [8] GHS Warning alert[8] GHS hazard statements H225, H301, H311, H331, H331, H370[8] GHS warning statements P210, P233, P240, P241, P242, P243, P260, P264, P270, P271, P280, P301+330+331, P310, P302+352, P312, P303+361+353, P304+340, P311, P305+351+338, P307+311, P337+313, P361, P363, P370+378, P403+233[8] NFPA 704 (fire diamond) [12][14] 3 1 0 Flash point 11 to 12 °C (52 to 54 °F; 284 to 285 K) Auto-ignition 470 °C (878 °F; 743 K)[15] 385 °C (725 °F; 658 K)[16] Explosive limits 6-36%[10] Lethal dose or concentration (LD, LC): LD50 (median dose) 5628 mg/kg (rat, oral)7300 mg/kg (mouse, oral)12880 mg/kg (rat, oral)14200 mg/kg (rabbit, oral)[11] LC50 (median concentration) 64,000 ppm (rat, 4 h) [11] LCLo (lowest published) 33,082 ppm (cat, 6 h)37,594 ppm 2 hours[11] NIOSH (U.S. Health Impact Restrictions): PEL PEL TWA 200 ppm (260 mg/m<sup>3</sup>)[10] REL (Recommended) TWA 200 ppm (260 mg/m<sup>3</sup>) ST 250 ppm (325 mg/m<sup>3</sup>) [skin][skin][260 mg/m IDLH (Immediate Hazard) 6000 ppm[10] Related Connection Related Connection MetanetiolSilanoLetanol Additional Data Page Structure and Refraination Index (n), Dielectric Constant (εr), etc. Thermodynamics Phase of behaviorsolid-liquid-gas spectral data of ultraviolet, I.C., NMR, MS Except when otherwise specified, the data are given for materials in standard condition (at 25

