

Common Chemicals

You live in a chemical world. As one bumper sticker asks, “What in the world isn’t chemistry?” Every natural and technologically produced substance around you is composed of

chemicals. Many of these chemicals are used to make your life easier or safer, and some of them have life-saving properties. Following is a list of selected common chemicals.

Common name	Recommended name	Formula	Common use/source
acetic acid	ethanoic acid	$\text{HC}_2\text{H}_3\text{O}_2$	vinegar
acetone	propanone	$(\text{CH}_3)_2\text{CO}_{(l)}$	nail polish remover
acetylene	ethyne	$\text{C}_2\text{H}_{2(g)}$	cutting/welding torch
ASA (Aspirin®)	acetylsalicylic acid	$\text{C}_6\text{H}_4\text{COOCH}_3\text{COOH}_{(s)}$	for pain-relief medication
baking soda	sodium hydrogen carbonate	$\text{NaHCO}_{3(s)}$	leavening agent
battery acid	sulfuric acid	$\text{H}_2\text{SO}_{4(aq)}$	car batteries
bleach	sodium hypochlorite	$\text{NaClO}_{(s)}$	bleach for clothing
bluestone	copper(II) sulfate pentahydrate	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}_{(s)}$	algicide, fungicide
brine	aqueous sodium chloride	$\text{NaCl}_{(aq)}$	water-softening agent
CFC	chlorofluorocarbon	$\text{C}_x\text{Cl}_y\text{F}_z_{(l)}$; e.g., $\text{C}_2\text{Cl}_2\text{F}_{4(l)}$	refrigerant
charcoal/graphite	carbon	$\text{C}_{(s)}$	fuel, lead pencils
citric acid	2-hydroxy-1,2,3-propanetricarboxylic acid	$\text{C}_3\text{H}_4\text{OH}(\text{COOH})_3$	in fruit and beverages
carbon dioxide	carbon dioxide	$\text{CO}_{2(g)}$	dry ice, carbonated beverages
ethylene	ethene	$\text{C}_2\text{H}_{4(g)}$	for polymerization
ethylene glycol	1,2-ethanediol	$\text{C}_2\text{H}_4(\text{OH})_{2(l)}$	radiator antifreeze
freon-12	dichlorodifluoromethane	$\text{CCl}_2\text{F}_{2(l)}$	refrigerant
Glauber's salt	sodium sulfate decahydrate	$\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}_{(s)}$	solar heat storage
glucose	D-glucose; dextrose	$\text{C}_6\text{H}_{12}\text{O}_{6(s)}$	in plants and blood
grain alcohol	ethanol (ethyl alcohol)	$\text{C}_2\text{H}_5\text{OH}_{(l)}$	beverage alcohol
gypsum	calcium sulfate dihydrate	$\text{CaSO}_4 \cdot 2\text{H}_2\text{O}_{(s)}$	wallboard
lime (quicklime)	calcium oxide	$\text{CaO}_{(s)}$	masonry
limestone	calcium carbonate	$\text{CaCO}_{3(s)}$	chalk and building materials
lye (caustic soda)	sodium hydroxide	$\text{NaOH}_{(s)}$	oven/drain cleaner
malachite	copper(II) hydroxide carbonate	$\text{Cu}(\text{OH})_2 \cdot \text{CuCO}_{3(s)}$	copper mineral
methyl hydrate	methanol (methyl alcohol)	$\text{CH}_3\text{OH}_{(l)}$	gas line antifreeze
milk of magnesia	magnesium hydroxide	$\text{Mg}(\text{OH})_{2(s)}$	antacid (for indigestion)
MSG	monosodium glutamate	$\text{NaC}_5\text{H}_8\text{NO}_{4(s)}$	flavour enhancer
muriatic acid	hydrochloric acid	$\text{HCl}_{(aq)}$	concrete etching
natural gas	methane	$\text{CH}_{4(g)}$	fuel
PCBs	polychlorinated biphenyls	$(\text{C}_6\text{H}_x\text{Cl}_y)_2$; e.g., $(\text{C}_6\text{H}_4\text{Cl}_2)_2_{(l)}$	in transformers
potash	potassium chloride	$\text{KCl}_{(s)}$	fertilizer
road salt	calcium chloride or sodium chloride	$\text{CaCl}_{2(s)}$ or $\text{NaCl}_{(s)}$	melts ice
rotten-egg gas	hydrogen sulfide	$\text{H}_2\text{S}_{(g)}$	in natural gas
rubbing alcohol	2-propanol (also isopropanol)	$\text{CH}_3\text{CHOHCH}_3_{(l)}$	for massage
sand (silica)	silicon dioxide	$\text{SiO}_{2(s)}$	in glassmaking
slaked lime	calcium hydroxide	$\text{Ca}(\text{OH})_{2(s)}$	limewater
soda ash	sodium carbonate	$\text{Na}_2\text{CO}_{3(s)}$	in laundry detergents
sugar	sucrose	$\text{C}_{12}\text{H}_{22}\text{O}_{11(s)}$	sweetener
table salt	sodium chloride	$\text{NaCl}_{(s)}$	seasoning
vitamin C	ascorbic acid	$\text{H}_2\text{C}_6\text{H}_6\text{O}_{6(s)}$	vitamin supplement
washing soda	sodium carbonate decahydrate	$\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}_{(s)}$	water softener