


# University of Pennsylvania CHEM 241 Spring 2017

## Organic Compounds Around Us

**C1**




Relevant Compound:

OC(=O)C

formic acid

Important intermediate in chemical synthesis and occurs naturally, most notably in some ants. "Formic" comes from the Latin word for ant, *formica*, referring to its early isolation from ants. This is why some ants taste sour.

**C2**




Relevant Compound:

CF3CF2CF2CF3

1,1,1,2-tetrafluoroethane; R-134a

Utilized primarily as a refrigerant and in automobile air conditioners. Starting in the 1990s, R-134a replaced the harmful ozone-depleting chlorofluorocarbon R-12. Due to its own contribution to climate change, it's currently being phased out of use.

**C3**




Relevant Compound:

CC(=O)C

acetone

Acetone, also known as propanone, is colorless and very volatile. It is a simple ketone. It is produced in the human body and is present in blood and urine. It is listed as a food additive and is popularly found in nail polish remover.

**C4**



Relevant Compound:

[K+].[O-]C(=O)C(O)C(=O)O

Potassium Bitartrate

A byproduct in winemaking, often used in cooking as cream of tartar. It can also be used to make a household cleaning agent, used as a purgative, and is the primary reference standard pH buffer for the National Institute of Standards and Technology.

**C5**




Relevant Compound:

CC(=O)OC=C

Cyanoacrylate

Cyanoacrylate, more commonly known as "Super Glue" or "Crazy Glue" is a common household adhesive. Be careful, however, as cyanoacrylate is not your childhood Elmer's Glue. This adhesive binds your nylon from running and holds broken ornaments together for years. Keep a sander handy in case Cyanoacrylate ends up on your fingernails.

**C6**




Relevant Compound:

NC1=CC=CC=C1C(=O)O

Niacin

Niacin, or niacinamide, is an essential nutrient for humans. A component of Vitamin B3 complex. Niacin by itself can be used as medication to treat high blood cholesterol. Found in a variety of foods, such as energy drinks.

**C7**




Relevant Compound:

O=Cc1ccccc1

Benzaldehyde

Occurring naturally in apples, almonds, apricots and cherries. Benzaldehyde is used to create almond flavor and scent for foods, scented products and cosmetics.

**C8**




Relevant Compound:

C1=CC=C2C(=C1)C=CC=C2

piperonal

Naturally occurring compound in some plants. Used as common fragrances (such as room fresheners and perfumes) and artificial flavors to give a vanilla or floral scent.

**C9**




Relevant Compound:

CC(N)C(O)C1=CC=C(O)C=C1

Pedrolon; Hydroxyamphetamine Hydrobromide (C9H14BrNO)

Pedrolon is an important amphetamine metabolite with sympathomimetic effects. It is a hydrophilic, and it is used to dilate the pupils for ophthalmic use.

**C10**



Relevant Compound:


C1=CC2=C(C1)C(=O)C2

Camphor

IUPAC -1,7,7-trimethylbicyclo[2.2.1]heptan-2-one

Naturally found in from the camphor laurel tree or synthesized from turpentine, camphor is a chiral compound used in skin products because of its fragrance, for similar reasons. It is also used in moth balls as a moth repellent when clothes are stored away.

**C11**



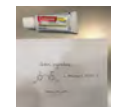
Relevant Compound:

CCOC(=O)CCc1ccccc1

2-Phenethyl Propionate

This chemical is commonly used in perfumes and as a food additive due to its floral, nutty scent. It is derived from phenylacetic acid, which does not contain the enzyme that triggers peanut allergies. It is also a natural pesticide and the first ingredient listed in EcoSMART's "organic" insect repellent.

**C12**




Relevant Compound:

ClC1=CC=C(Cl)C=C1

Triclosan

Antigingivitis, ingredient in many toothpastes, soaps and detergents. Generally a antimicrobial agent

**C13**




Relevant Compound:

C1=CC=C2C(=C1)C(=O)N2

Fluconazole

Used to treat and prevent fungal infections, for instance yeast infections. Because of its predictable absorption, it provides systemic treatment and is considered by WHO to be one of the most effective and safe medicines.

**C14**




Relevant Compound:

O=C(O)C1=CC=C(O)C=C1

Ellagic Acid

A natural phenol antioxidant, ellagic acid is found in many fruits and nuts, such as walnuts, peaches, cranberries, strawberries, and grapes. They are good antioxidants, thus it is a healthy consumption of three servings of homemade peach and walnut cobble.

**C15**




Relevant Compound:

CCCCCCCCOC(=O)C1=CC=C(O)C=C1

octyl salicylate (also known as octisalate)

An organic molecule used in sunscreen. It absorbs UVB rays and has a slight floral fragrance. This compound is degraded by the sun, so it must be reapplied often.

**C16**




Relevant Compound:

CCCCCCCCCCCCCCCC

palmitic acid

Common saturated fatty acid found in milk products and meat. Important component of palm oil, a major ingredient in Nutella

**C17**




Relevant Compound:

O=C1C=CC(=C2C=CC(=C12)O)O

Rosinidin

An O-methylated anthocyanidin. It can be found in the blueberry. It is a food plant rich in anthocyanidins, as well as in flowers like the Madagascar periwinkle (Madagascar was a little far...)

**C18**




Relevant Compound:

CN1CC2C(C1)C3=CC=CC=C3C2

Dextromethorphan hydrogen bromide

Cough suppressant found in a variety of over-the-counter cold and flu products.

**C19**




Relevant Compound:

CCCCCCCCCCCCCCCC

Pristane

Occurs naturally in shark liver oil, which has anti-cancer properties and boosts the immune system.

**C20**



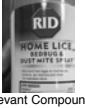
Relevant Compound:

O=C1C=CC(=C2C=CC(=C12)O)O

Erythrosine

Is primarily used for food coloring and is commonly known as Red No. 3. It is found in the candy and dye that my mom sent me in an Easter basket this year!!

**C21**



Relevant Compound:

CC1=C(C)C(=O)C=C1

Permethrin

An important artificial insecticide used commercially also by the military to eradicate lice and mites. It acts by disrupting neuron function. It is classified as a pyrethroid, and is similar to naturally occurring pyrethrin insecticides.

**C22**




Relevant Compound:

OC1=CC=C(O)C=C1

Bloodolol

A stimulant laxative drug, the active ingredient in the commonly used over-the-counter laxative Dulcolax.

**C23**




Relevant Compound:

O=C1C=CC(=C2C=CC(=C12)O)O

Onenin

An anthocyanin that is one of the red pigments found in purple grapes and red wine.

**C24**




Relevant Compound:

CCCCCCCCCCCCCCCC

Tween-80

Commonly found in bath bombs. It helps dissolve ingredients in a solvent in which they normally do not dissolve and as its fragrance ingredient. It can also be used to form emulsions in food and cosmetics.

**C25**




Relevant Compound:

CN1CC2C(C1)C3=CC=CC=C3C2

Meclizine

Antihistamine important active ingredient in many medications that treat the symptoms of motion sickness, nausea, vomiting, dizziness. Can also be used to treat symptoms of vertigo

**C26**



Relevant Compound:

CCCCCCCCCCCCCCCC

Cerotic Acid

White crystalline solid found in beeswax and carnauba wax from palm leaves. Carnauba wax produces a glossy finish on the coating of Skittles candy. Cerotic acid buildup can lead to adrenoleukodystrophy, a disease characterized by progressive demyelination and adrenal insufficiency.