

ORGANIC CHEMISTRY 2 LECTURE GUIDE 2019

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Lesson VI.1. Nomenclature of Carbonyls

Prioritizing functional groups

Hierarchy of functional group priorities for naming:

Carboxylic Acid

(A)

Acid Chloride

(B)

Aldehyde

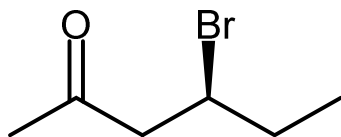
(C)

Alcohol

Notes

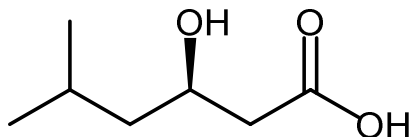
Lesson VI.1. Nomenclature of Carbonyls*Naming Ketones*

Ketones: 1) Use the *-one* ending; 2) number to indicate which C has the =O on it:



A

A ketone has priority over an alcohol. Name the alcohol as a "*hydroxy*" substituent:

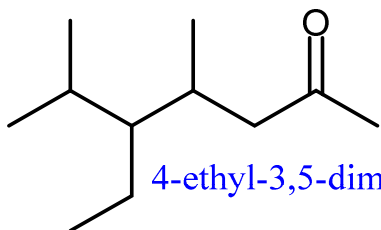


B

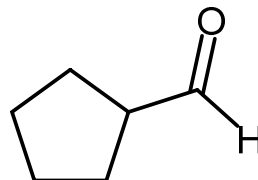
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Lesson VI.1. Nomenclature of Carbonyls*Naming Aldehydes*

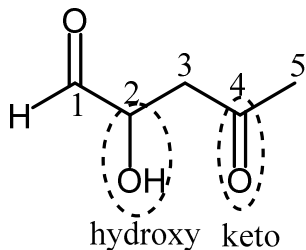
Aldehydes: 1) Use the *-al* ending; 2) it is always at the end; 3) as a substituent, name it “carbaldehyde” or “formyl”



4-ethyl-3,5-dimethylhexanal

cyclopentanecarbaldehyde
or formylcyclopentane

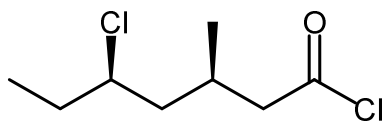
An aldehyde has priority over an alcohol or a ketone. Name the alcohol as a “hydroxy” substituent and ketone as a “keto” or “oxo” substituent:



Notes

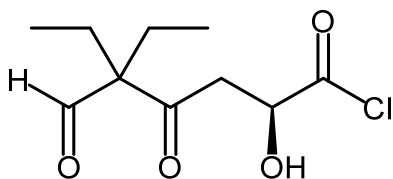
Lesson VI.1. Nomenclature of Carbonyls*Naming acid chlorides*

Acid chlorides: 1) Use the “-oyl chloride” ending; 2) the acid chloride is always at the end, so it does not need a number to indicate its position.



A

Acid Chloride has priority over aldehyde, ketone and alcohol functional groups:

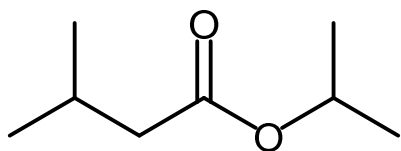


B

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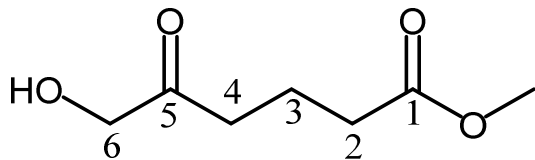
Lesson VI.1. Nomenclature of Carbonyls*Naming esters*

Esters: 1) place the name of the substituent on the non-carbonyl O in front of the name; 2) use the “-oate” ending. 3) the ester is always on the end, so the name will not need a number indicating its position.



A

A carboxylic acid has priority over all of the other carbonyl functional groups other than carboxylic acid that are covered in this Lesson.

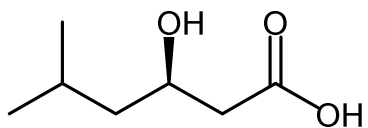


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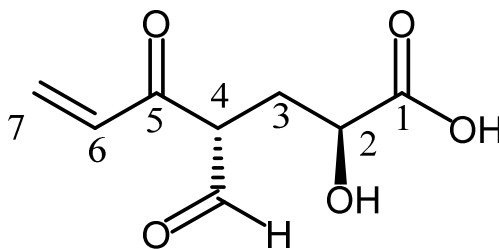
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Lesson VI.1. Nomenclature of Carbonyls*Naming carboxylic acids*

Carboxylic acids: 1) use “-oic acid” in place; 2) it is always on the end



A carboxylic acid has priority over all of the other carbonyl functional groups in this Lecture Guide.



(2S, 4R)-4-formyl-2-hydroxy-5-ketohept-6-enoic acid

Notes