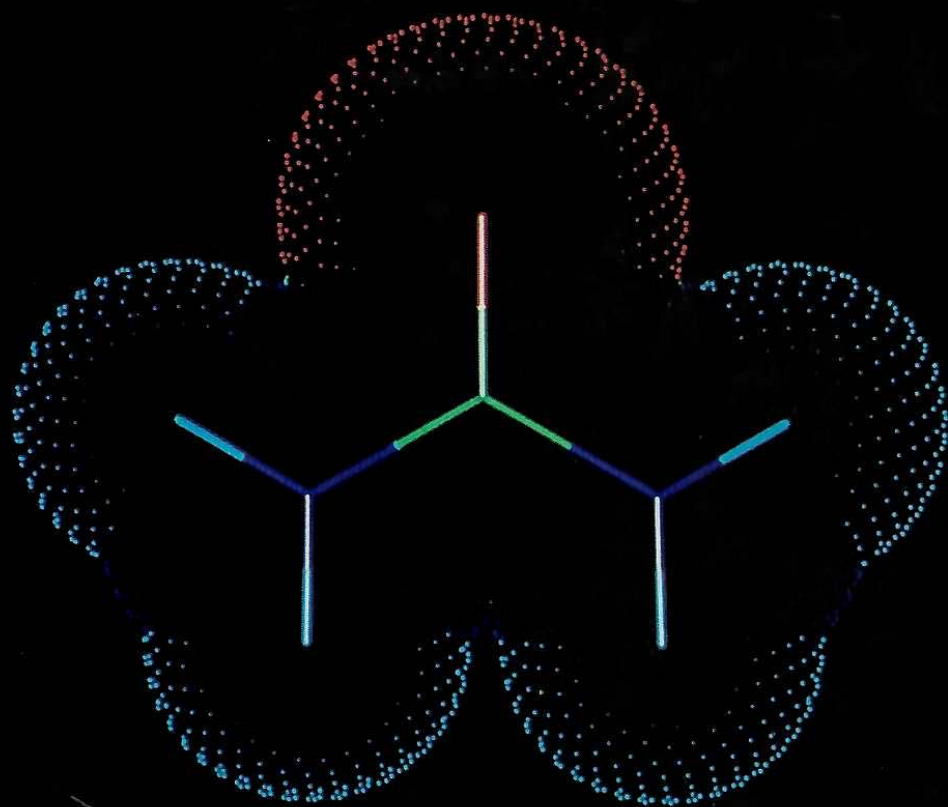


SOLOMONS



ORGANIC CHEMISTRY

FIFTH EDITION

Sarepta Exhibit 1076, page 1

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ORGANIC CHEMISTRY

T. W. GRAHAM SOLOMONS

University of South Florida



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Fig. 14-38 Disonics, Inc.

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10 9 8 7 6 5 4 3 2 1

Periodic Table of the Elements

Periods	Group I A		Key						
↓			atomic mass	12.011	electronic configuration atomic number				
			electronegativity	2.5					
			symbol	C					
			name	Carbon					
1	1.0079 2.2 1s H 1 Hydrogen								
2	6.941 1.0 [He]2s Li 3 Lithium	9.01218 1.5 [He]2s ² Be 4 Beryllium							
3	22.98977 1.0 [Ne]3s Na 11 Sodium	24.305 1.2 [Ne]3s ² Mg 12 Magnesium	III B	IV B	V B	VI B	VII B	VII	
4	39.0983 0.9 [Ar]4s K 19 Potassium	40.08 1.0 [Ar]4s ² Ca 20 Calcium	44.9559 1.2 [Ar]3d ⁴ 4s ² Sc 21 Scandium	47.88 1.3 [Ar]3d ² 4s ² Ti 22 Titanium	50.9415 1.5 [Ar]3d ³ 4s ² V 23 Vanadium	51.996 1.6 [Ar]3d ⁵ 4s Cr 24 Chromium	54.9380 1.6 [Ar]3d ⁵ 4s ² Mn 25 Manganese	55.847 1.6 [Ar]3d ⁶ 4s ² Fe 26 Iron	58.9332 1.7 [Ar]3d ⁷ 4s ² Co 27 Cobalt
5	85.4678 0.9 [Kr]5s Rb 37 Rubidium	87.62 1.0 [Kr]5s ² Sr 38 Strontium	88.9059 1.1 [Kr]4d ⁵ 5s ² Y 39 Yttrium	91.22 1.2 [Kr]4d ² 5s ² Zr 40 Zirconium	92.9064 1.2 [Kr]4d ⁴ 5s Nb 41 Niobium	95.94 1.3 [Kr]4d ⁵ 5s Mo 42 Molybdenum	98.906 1.4 [Kr]4d ⁵ 5s Tc 43 Technetium	101.07 1.4 [Kr]4d ⁷ 5s Ru 44 Ruthenium	102.9055 1.5 [Kr]4d ⁵ 5s Rh 45 Rhodium
6	132.9054 0.9 [Xe]6s Cs 55 Cesium	137.33 1.0 [Xe]6s ² Ba 56 Barium	138.9055 1.1 [Xe]5d ⁶ 6s ² *La 57 Lanthanum	178.49 1.2 [Xe]4f ¹⁴ 5d ² 6s ² Hf 72 Hafnium	180.9479 1.3 [Xe]4f ¹⁴ 5d ³ 6s ² Ta 73 Tantalum	183.85 1.4 [Xe]4f ¹⁴ 5d ⁴ 6s ² W 74 Tungsten	186.207 1.5 [Xe]4f ¹⁴ 5d ⁵ 6s ² Re 75 Rhenium	190.2 1.5 [Xe]4f ¹⁴ 5d ⁶ 6s ² Os 76 Osmium	192.22 1.6 [Xe]4f ¹⁴ 5d ⁷ 6s ² Ir 77 Iridium
7	(223) 0.9 [Rn]7s Fr 87 Francium	226.0254 1.0 [Rn]7s ² Ra 88 Radium	227.0278 1.0 [Rn]6d ⁷ 7s ² †Ac 89 Actinium	(261) [Rn]5f ¹⁴ 6d ² 7s ² Unq 104 Unnilquadium	(262) [Rn]5f ¹⁴ 6d ³ 7s ² Unp 105 Unnilpentium	(263) [Rn]5f ¹⁴ 6d ⁴ 7s ² Unh 106 Unnilhexium			

Key	
atomic mass	12.011
electronegativity	2.5
	[He]2s ² 2p ²
symbol	C
name	Carbon
	6
	electronic configuration
	atomic number

* Lanthanides

† Actinides

140.12 1.1 [Xe]4f ² 6s ² Ce 58 Cerium	140.9077 1.1 [Xe]4f ³ 6s ² Pr 59 Praseodymium	144.24 1.1 [Xe]4f ⁴ 6s ² Nd 60 Neodymium	145 1.1 [Xe]4f ⁵ 6s ² Pm 61 Promethium	150.4 1.1 [Xe]4f ⁶ 6s ² Sm 62 Samarium	151.96 1.0 [Xe]4f ⁷ 6s ² Eu 63 Europium	157.25 1.1 [Xe]4f ⁷ 6s ² Gd 64 Gadolinium
232.0381 1.1 [Rn]6d ² 7s ² Th 90 Thorium	231.0359 1.1 [Rn]5f ² 6d ⁷ 7s ² Pa 91 Protactinium	238.029 1.2 [Rn]5f ³ 6d ⁷ 7s ² U 92 Uranium	237.0482 1.2 [Rn]5f ⁴ 6d ⁷ 7s ² Np 93 Neptunium	(244) 1.2 [Rn]5f ⁶ 7s ² Pu 94 Plutonium	(243) 1.2 [Rn]5f ⁷ 7s ² Am 95 Americium	(247) ≈1.2 [Rn]5f ⁷ 6d ⁷ 7s ² Cm 96 Curium

158.9254 1.1 [Xe]4f ⁹ 6s ² Tb 65 Terbium	162.50 1.1 [Xe]4f ¹⁰ 6s ² Dy 66 Dysprosium
(247) ≈1.2 [Rn]5f ⁹ 7s ² Bk 97 Berkelium	(251) ≈1.2 [Rn]5f ¹⁰ 7s ² Cf 98 Californium

6 electronic configuration atomic number

VII

58.9332 1.7 [Ar]3d ⁷ 4s ²	26	Co	27
Cobalt			
102.9055 1.5 [Kr]4d ⁹ 5s	44	Rh	45
Rhodium			
192.22 1.6 [Xe]4f ¹⁴ 5d ⁹ 6s ²	76	Ir	77
Iridium			

157.25 1.1 [Xe]4f ⁷ 5d ⁶ 6s ²	63	Gd	64
Gadolinium			
(247) ~1.2 [Rn]5f ⁷ 6d ¹ 7s ²	95	Cm	96
Curium			

										Noble Gases 0							
										4.0026 1s ²	2						
										He Helium							
		III A		IV A		V A		VI A		VII A							
10.81 2.0 [He]2s ² 2p	5	12.011 2.5 [He]2s ² 2p ²	6	14.0067 3.1 [He]2s ² 2p ³	7	15.9994 3.5 [He]2s ² 2p ⁴	8	18.9984 4.1 [He]2s ² 2p ⁵	9	20.179 [He]2s ² 2p ⁶	10						
B Boron		C Carbon		N Nitrogen		O Oxygen		F Fluorine		Ne Neon							
26.9815 1.5 [Ne]3s ² 3p	13	28.0855 1.7 [Ne]3s ² 3p ²	14	30.97376 2.1 [Ne]3s ² 3p ³	15	32.06 2.4 [Ne]3s ² 3p ⁴	16	35.453 2.8 [Ne]3s ² 3p ⁵	17	39.948 [Ne]3s ² 3p ⁶	18						
Al Aluminum		Si Silicon		P Phosphorus		S Sulfur		Cl Chlorine		Ar Argon							
I B		II B															
58.70 1.8 [Ar]3d ⁸ 4s ²	28	63.546 1.8 [Ar]3d ¹⁰ 4s	29	65.38 1.7 [Ar]3d ¹⁰ 4s ²	30	69.72 1.8 [Ar]3d ¹⁰ 4s ² 4p	31	72.59 2.0 [Ar]3d ¹⁰ 4s ² 4p ²	32	74.9216 2.2 [Ar]3d ¹⁰ 4s ² 4p ³	33	78.96 2.5 [Ar]3d ¹⁰ 4s ² 4p ⁴	34	79.904 2.7 [Ar]3d ¹⁰ 4s ² 4p ⁵	35	83.80 [Ar]3d ¹⁰ 4s ² 4p ⁶	36
Ni Nickel		Cu Copper		Zn Zinc		Ga Gallium		Ge Germanium		As Arsenic		Se Selenium		Br Bromine		Kr Krypton	
106.4 1.4 [Kr]4d ¹⁰	46	107.868 1.4 [Kr]4d ¹⁰ 5s	47	112.41 1.5 [Kr]4d ¹⁰ 5s ²	48	114.82 1.5 [Kr]4d ¹⁰ 5s ² 5p	49	118.69 1.7 [Kr]4d ¹⁰ 5s ² 5p ²	50	121.75 1.8 [Kr]4d ¹⁰ 5s ² 5p ³	51	127.60 2.0 [Kr]4d ¹⁰ 5s ² 5p ⁴	52	126.9045 2.2 [Kr]4d ¹⁰ 5s ² 5p ⁵	53	131.30 [Kr]4d ¹⁰ 5s ² 5p ⁶	54
Pd Palladium		Ag Silver		Cd Cadmium		In Indium		Sn Tin		Sb Antimony		Te Tellurium		I Iodine		Xe Xenon	
195.09 1.4 [Xe]4f ¹⁴ 5d ⁹ 6s	78	196.9665 1.4 [Xe]4f ¹⁴ 5d ¹⁰ 6s	79	200.59 1.5 [Xe]4f ¹⁴ 5d ¹⁰ 6s ²	80	204.37 1.4 [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p	81	207.2 1.6 [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ²	82	208.9804 1.7 [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ³	83	(209) 1.8 [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁴	84	(210) 2.0 [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁵	85	(222) [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁶	86
Pt Platinum		Au Gold		Hg Mercury		Tl Thallium		Pb Lead		Bi Bismuth		Po Polonium		At Astatine		Rn Radon	

158.9254 1.1 [Xe]4f ⁹ 6s ²	65	162.50 1.1 [Xe]4f ¹⁰ 6s ²	66	164.9304 1.1 [Xe]4f ¹¹ 6s ²	67	167.26 1.1 [Xe]4f ¹² 6s ²	68	168.9342 1.1 [Xe]4f ¹³ 6s ²	69	173.04 1.1 [Xe]4f ¹⁴ 6s ²	70	174.967 1.1 [Xe]4f ¹⁵ 6s ²	71
Tb		Dy		Ho		Er		Tm		Yb		Lu	
Terbium		Dysprosium		Holmium		Erbium		Thulium		Ytterbium		Lutetium	
(247) ~1.2 [Rn]5f ⁹ 7s ²	97	(251) ~1.2 [Rn]5f ¹⁰ 7s ²	98	(254) ~1.2 [Rn]5f ¹¹ 7s ²	99	(257) ~1.2 [Rn]5f ¹² 7s ²	100	(258) ~1.2 [Rn]5f ¹³ 7s ²	101	259 [Rn]5f ¹⁴ 7s ²	102	260 [Rn]5f ¹⁵ 7s ²	103
Bk		Cf		Es		Fm		Md		No		Lr	
Berkelium		Californium		Einsteinium		Fermium		Mendelevium		Nobelium		Lawrencium	