ERRATA

Organic Chemistry, 7th Edition, by Marc Loudon and Jim Parise
Date of this release: January 23, 2024

* Means that the correction has made it into the 1st printing and should be visible in the proofs.

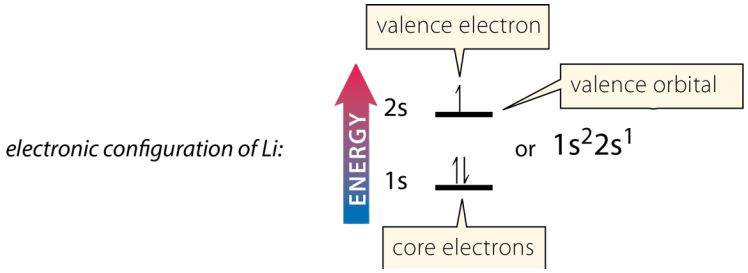
‡ Means that the correction did not make it into final proofs and will be made in the next printing. Note that some items with this mark were corrected in the loose-leaf edition but not in the bound textbook.

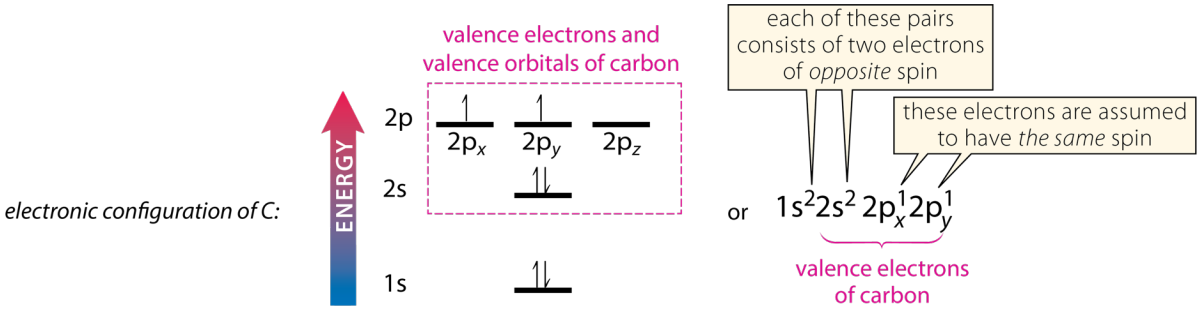
How do I know what printing I have? Look at the reverse side of the title page, where you will see all sorts of publication information. On the last line, you will see a series of digits. These digits will begin with the number of your printing. Thus, 1 2 3 4 5 6 is a first printing; 2 3 4 5 6 is a second printing; and 3 4 5 6 is a third printing.

Chapter 1

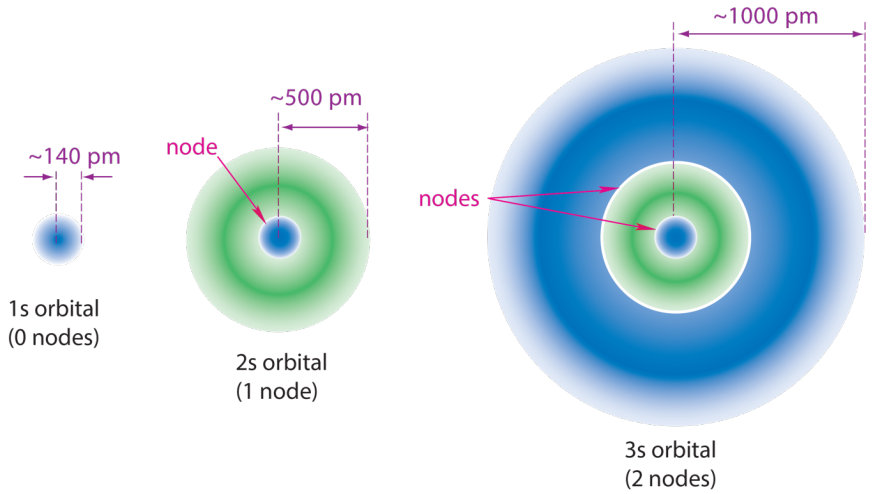
*p. 6 In the caption for Fig. 1.2, the 3s in the third line from the bottom should be 3d.

‡p. 8 In the paragraph above display 1.8, 3rd line, following "2s electron." insert the sentence, "The orbitals containing the valence electrons are the **valence orbitals**." In displays 1.8 and 1.9, replace art to label the valence orbitals:





‡p. 12 In Figure 1.6, the pointer arrows should be corrected to point to the nodes (the thin white circles). The corrected figure is as follows:



orbital cross sections showing electron probability

*p. 20 In Problem 1.9, first line, add the word for to read: "Draw two Lewis structures for each of the following molecules …".

‡p. 24 On Display 1.29, under the top right Figure, the color of the "5" has to be corrected to match the other numbers.

‡p. 27 In the second paragraph, fourth line, replace the word nitrogen with the word oxygen to read, " …in which the oxygen has a negative charge …"

‡p. 30 In Display 1.37 at the bottom of the page, a pair of electron dots in the second column is misplaced; these dots should be under the oxygen.

$$H_3C \overset{143\ pm}{\text{———}} \ddot{O}H$$

‡p. 37 The second-to-last line of the Study Problem 1.6 solution should read as follows: "Hence, the C≡C (triple) bond is shorter than the C═O (double) bond, which is shorter than the C—C (single) bond." (The order shown with letters is correct.)

‡p. 42 In Figure 1.11, center the items within the dashed red box.

‡p. 43 In Displays 1.65 and 1.66, the right rear hydrogen in the ethylene model should be behind the bond, and the front bond should penetrate the carbon periphery.

‡p. 46 The sentence above the Focused Problems change the word "linear" to "undefined," to read: "The geometry at a terminal atom is undefined because it is connected to only one other atom."

‡p. 49 In Display 1.80, in the central pointer box with red type , replace the word "molecular" with the word "molecule" to read, "…for the water molecule".

*p. 53 In Problem 1.29, item (b) should be H_2^-, *not* He_2^-.

‡p. 54 There are errors in this page and Fig. 1.14 on the following page which imply that the lowest-energy MO of methane has no nodes. All of the bonding MOs of methane have one node (like the carbon orbitals from which they are derived). The node in the MO of lower energy is not visible in Fig. 1.14 (p. 55) because it is internal to the MO; we would need a "cutaway" diagram to see this node. The nodes of the three degenerate MOs of higher energy are planar nodes that separate the regions of different phase.

Therefore, lines 4, 5, and 6 of the final paragraph should read: "…bonding MO of lower energy and three degenerate bonding MOs of higher energy."

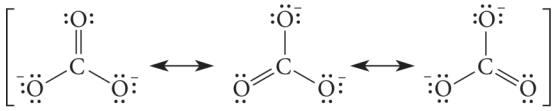
The last line of this paragraph should then read, "…are derived, have one planar node,"

‡p. 55 In Fig. 1.14, delete the two red comments, "1 node" and "0 nodes."

‡p. 55 In display 1.88, comp has cut off the last line of text.

‡p. 59 In the second paragraph, second line, after "resultant dipole moment." insert the sentence, "Molecules with significant dipole moments are **polar molecules**."

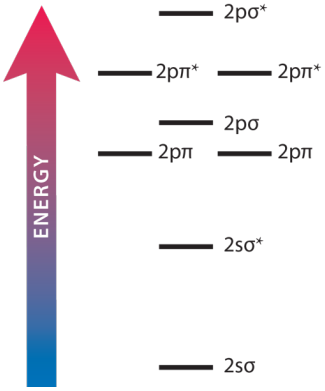
‡p. 63 In the structure associated with Problem 1.49, the electron dots are missing on the lower left oxygen in the middle structure. The corrected structure is as follows.



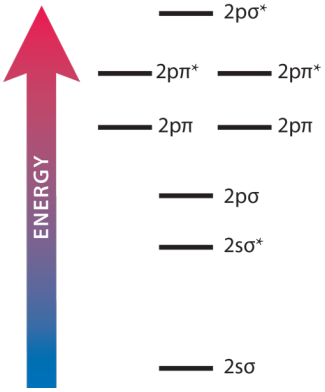
carbonate ion

*p. 64 In the second line of Problem 1.56, change the word "three" to "four."

‡p. 64 The position of the 2pσ energy level in Fig. P1.59 should be moved upward so that it is just above the 2pπ levels. The corrected Fig. P1.59 is as follows:

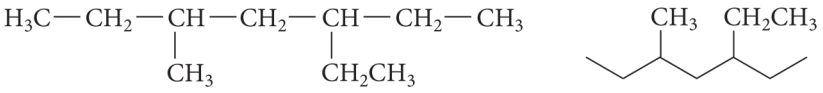


‡p. 66 The solution to Problem 1.70(e) should read: "The relative energies of the MOs you constructed are shown in the following diagram. Add the available …" A new energy-level diagram should be provided just below this part.



Chapter 2

‡p. 79 In the display associated with Rule 10, the skeletal structure is incorrect; the methyl group is on the wrong carbon. The correct display is as follows:



3-ethyl-5-methylheptane

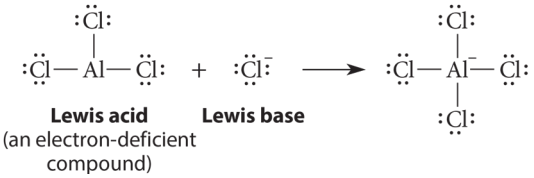
‡p. 86 In the blue box on the left, change "staggered" on the 9th line from the bottom to "eclipsed," to read, "…increases the energy of the eclipsed conformation."

*p. 108 In Problem 2.32(c), the name of the compound should be 1-cyclopropyl-2,4-dimethylcyclohexane. (Change 3 to 2 in the name.)

‡p. 111 Add to Problem 2.54: "Assume that gasoline consists of octane isomers."

Chapter 3

‡p. 115 In the second display of Study Problem 3.1, the second caption should be "Lewis base" rather than "Lewis acid."



Lewis acid (an electron-deficient compound) **Lewis base**

‡p. 115 In the title of Section 3.1C, the last word should be "Reactions," not "Reaction."

‡p. 142 In Table 3.2, the gradient on the right arrow should be reversed—dark at the top and light at the bottom. The arrow *direction* is correct.)

‡p. 150 In Focused Problem 3.31, the acetic acid is dissolved in one liter of pure water. (The amount of water is missing.)

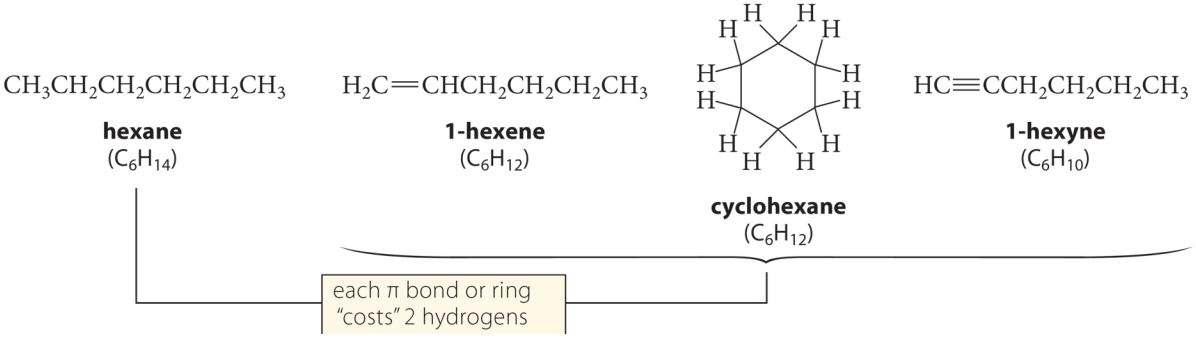
‡p. 152 In Table 3.2, the pK_a of water should be 14.0, as it is elsewhere in the book.7E.F03.02

‡p. 159 Add border and fill in Figure 3.3 per spec.

Chapter 4

p. 176 Fix the lobe alignment in the π^* molecular orbital.

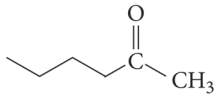
‡p. 192 In the first display of Sec. 4.3, the name of the last structure should be 1-hexyne, not 1-hexene.



p. 233 In Problem 4.65, the calculation should be carried out at 25 °C (298 K).

Chapter 5

‡p. 273 In wording of Problem 5.28(b) change "pentanal" to "2-hexanone." Change the structure to 2-hexanone:



2-hexanone

Chapter 6

‡Page 312 In Display 6.38 at the bottom of the page, the cross-reference to Eq. 6.38 within the art (not the equation number itself) should be changed to Eq. 6.39.

‡Page 319 Delete periods following parts (e) and (f) of Problem 6.30.

Chapter 7

‡p. 335 In the caption for Fig. 7.5, delete the sentence describing the inset and close up. (There is no inset.) Also delete the parentheses around the las sentence. The caption should then read:

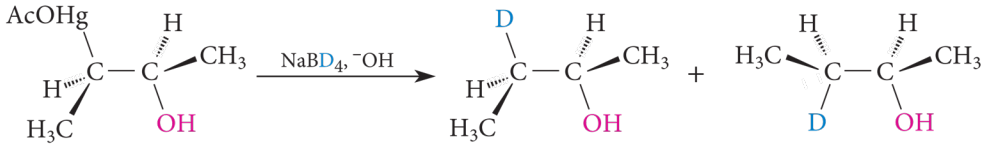
FIGURE 7.5 Relative enthalpies of cyclohexane conformations in kJ mol^{-1}. (The enthalpies in kcal mol^{-1} are in parentheses.) The half-chair conformation is explained in Focused Problem 7.1 at the end of this section.

‡p. 354 In Display 7.40b, the caption for the middle compound should be 17β-estradiol. (No hyphen before the β.)

‡p. 357 The text in the line above Eq. 7.43 should read "… at exactly the same rates to give fumaric acid in exactly the same yield." (Replace "malic" with "fumaric".)

‡p. 362 The statement of Problem 7.24 should end with a period and not a question mark.

‡p. 372 In Eq. 7.71 and the sentence above it, the amounts of products should be described as "nearly equal," rather than "equal," because diastereomers *must* be formed in different amounts. In this case, no difference was detected in the amounts of the two products, but the detection method used probably has a ±10% error.



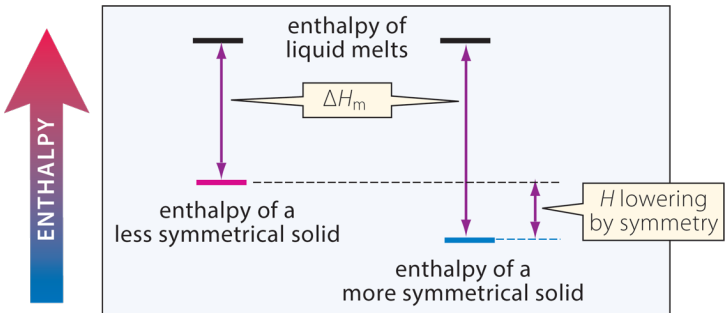
(racemate) (nearly equal amounts of each; both are racemic)

‡p. 374 In the second line of Problem 7.36, delete the first of the two words "in."

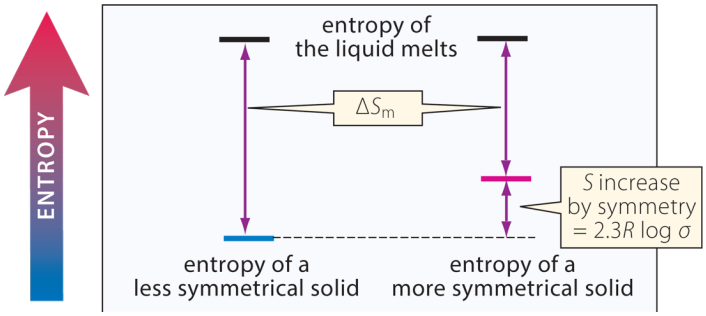
Chapter 8

‡p. 403 In the last line of p. 403, replace "covalent" with "noncovalent."

‡p. 410 Change the captions under the energy diagrams in Display 8.45 to read "less symmetrical" and "more symmetrical," respectively. In addition, it is the enthalpy of the less symmetrical solid that is lowered, not the ΔH.



‡p. 411 Change the captions under the energy diagrams in Display 8.47 to read "less symmetrical" and "more symmetrical," respectively. In addition, it is the entropy of the more symmetrical solid that is raised, not the ΔS.



‡p. 411 In the paragraph below Display 8.47, interchange 1,3- and 1,4- in the second and third lines.

‡p. 412 In Problem 8.16, delete the (b) under the structures. This line is a continuation of part (a). Change (c) to (b).

‡p. 415 In the third line below Eq. 8.51 insert the word "or" before 1.99.

‡p. 424 In Eq. 8.66b, there should be a minus sign before the $T\Delta S$, so the equation reads:

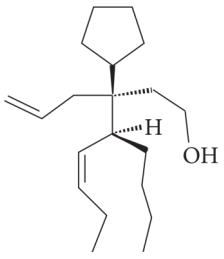
$$-T\Delta S^\circ_{\text{inter}} = -T\Delta S^\circ_s + T\Delta S^\circ_{\text{mixing}}$$

‡p. 426 Equation 8.68 at the top of the page is missing a subscript on the first ΔG°(solid). The correct equation is

$$\Delta G^\circ_s(\text{solid}) = \Delta G^\circ_{m,298} + \Delta G^\circ_s(\text{liquid})$$

‡p. 441 In Problem 8.27, the reference should be to Display 8.80 on p. 437 (not Display 8.81).

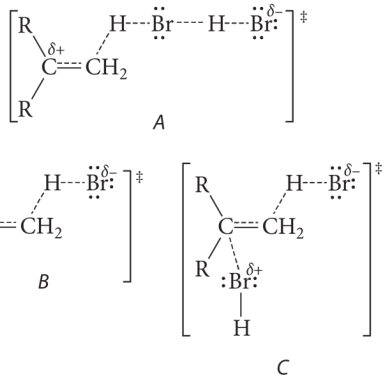
‡p. 446 In Problem 8.51(b), the structure should show the stereochemistry at carbons 3 and 4. The corrected structure is



p. 443 In Problem 8.39(c), change 1,2-propanethiol to 2-propanethiol

Chapter 9

‡Page 499 In the display associated with Skills Objectives Problem 9.36, the partial charges are not correct. The corrected display should be as follows. (The procedure for drawing transition states is given on text p. 214.)



Chapter 10

‡Page 511 Reword Problem 10.2 to read: Write the appropriate fishhook or curved-arrow notation for each of the following transformations. For parts (a) and (b), indicate whether the reactions are homolytic or heterolytic, and tell how you know.

For par (c) of the same problem, delete the first phrase, "Using the Fishhook notation." The part should read, "Derive a resonance structure for the following free radical."

‡Page 521 In the callout for Further Exploration 10.1, omit the words "Old 5.3."

‡Page 538 In the second line of text under heading D, replace the word "alkynes" with "alkanes." to read: "…considerably greater acidity than alkenes or alkanes."

‡Page 553 In the text below Eq. 10.83c the equation cross reference should be to Eq. 10.83b.

‡Page 557 In Problem 10.39(a), the calculation in the hint should be replaced by $4a + 2b + 2c + 2d + e + h - 8f - 5g$. That is, the equation given results in a correct number but the wrong sign.

‡Page 557 The objective prior to Problem 10.40 is missing the cross-reference, which should be 10.3D. The objective prior to Problem 10.41 is also missing the cross-reference, which should be 10.3A,B.

‡Page 560 In Problem 10.57(a), the heat of formation of ethanethol should be –46.15 kJ mol^{-1}; that is, the magnitude is correct, but the sign should be negative.

‡Page 563 In Problem 10.69(b), the negatively charged nitrogen in the structure should have two nonbonding electron pairs.

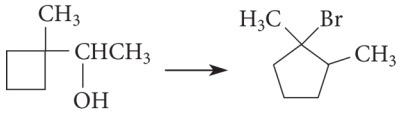
Chapter 11

‡Page 566 In Eq. 11.6, the name of the conjugate-base alkoxide should be sodium 2-butanolate.

‡Page 580 The problem number for Problem 11.17 should be boldface.

‡Page 584 In Focused Problem 11.21a, delete the reference to Problem 11.44a. The first line of the problem should read, "According to the mechanism of the reaction shown in Eq. 11.42b,"

‡Page 588 In Focused Problem 11.23c, the first structure is incorrect. The correct structures should be as follows"



‡Page 596 In the second line of Point 5 at the bottom of the page, substitute the word "species" for each of the words "Molecules."

‡Page 609 In Eq. 11.89b, the structure of diethyl disulfide should be replaced by EtS—SEt.

‡Page 616 In Problem 11.51, add the words "in pyridine" so that the problem reads, "Write the curved-arrow mechanism for the reaction of cyclohexanol with thionyl chloride in pyridine."

‡Page 619 In Problem 11.71, the minus sign in the lowest carboxylate group is obscured and should be raised to the normal superscript position:

‡Page 622 In Problem 11.80(c), the caption on the first compound should be methylpropene, not 2-methyl-propene.

Chapter 12

‡Page 673 In the last sentence above the Focused Problem set, the reference to Problem 12.87 should be to Problem 12.86.

Chapter 13

‡Page 720 In Problem 13.24, replace the fractional transmission values 0.1 and 0.5 with the per cent transmission values 10 and 50, respectively.

‡Page 720 In Problem 13.26, add the sentence, "Assume that the force constants for the two vibrations are identical."

‡Page 724 In the first line of Problem 13.45(b), change the double bond to a triple bond, to read: "If the bond dissociation of the ≡C—H"

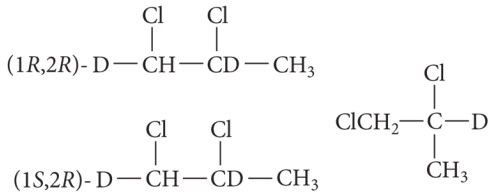
Chapter 14

‡Page 755 In the second line below Display 14.20, the second subscript is wrong. The text should read, "J_{ab} and J_{ac} are the same (2.9 Hz)." That is, the subscript *bc* should be *ac*.

‡Page 769 In Focused Problem 14.27, replace "fluoromethane" by "fluoromethane."

‡Page 776 In Fig. 14.22, the alkyne (2nd structure from the top) is missing the other bond to carbon.

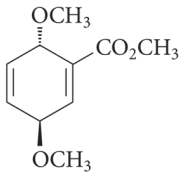
‡Page 794 In Problem 14.55(c), a deuterium is missing on the two diastereomers. The structures should be as follows:



‡Page 794 For Compound *A,* on the second line, delete the word "carbon." On the 3rd line, insert the word "Carbon" to read "Carbon NMR:"

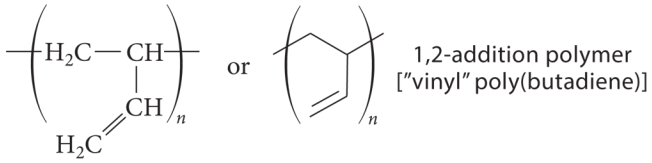
Chapter 15

‡Page 828 The structure in Focused Problem 15.20(a) is missing a double bond; it should be as follows:



‡Page 832 In the first line of Sec. 15.5, second paragraph, add parentheses to "polybutadiene" to read "poly(butadiene)."

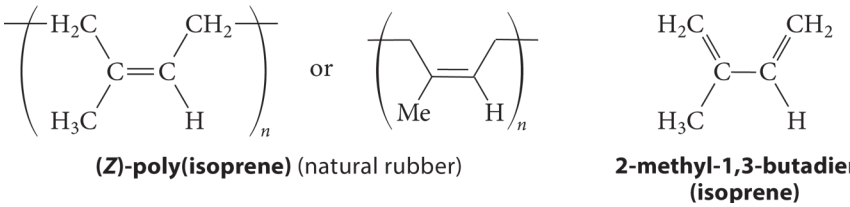
‡Page 833 The caption for the polymer name in the last line of Display 15.43 should be changed to ["vinyl" poly(butadiene)].



‡Page 833 In the first line of text below Display 15.44, add parentheses to the polymer name to read "poly(butadiene),".

‡Page 833 In the line of text above Display 15.45, add parentheses to the polymer name to read "poly(isoprene)," .

‡Page 833 In Display 15.45, add parentheses to the polymer name to read "(*Z*)-poly(isoprene)".



(*Z*)-poly(isoprene) (natural rubber)

2-methyl-1,3-butadiene (isoprene)

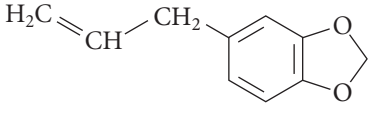
‡Page 834 In the third line of text at the top of the page, change "(polyisoprene)" to "[poly(isoprene)]". On the fourth line of text, add parentheses to "polyisoprene" to read "poly(isoprene)".

‡Page 837 In Focused Problem 15.27, delete the letter (a); change the letter (b) to (a), and change the letter (c) to (b).

‡Page 838 In Problem 15.28, structure *B* should have a hydrogen on the nitrogen.

A *B*

‡Page 839 In the second display, the spelling of the last compound should be safrole, not saffrole. Also, the structure is missing a CH_2 group. The correct structure and spelling are as follows:



safrole
(oil of sassafras)

‡Page 859 In the first line of Problem 15.38(a), correct the name of the cation to read, "2,4-pentadien-1-yl cation" to match the name under the structure that follows.

‡Page 862 In the objective, "Apply the Frost circle… ," change the word "determining" to "determine."

‡Page 866 In the second line of Problem 15.83, change "is" to "are."

‡Page 867 In Problem 15.88, in the third line of text below the structures, delete the statement, "(Don't try to explain any percentages.)"

Chapter 16

‡Page 876 Replace the word "isomers" with the word "compounds" because the two compounds in part (c) are not isomers.

‡Page 910 In Problem 16.37(c), the name should be "4-Methylbenzenethiol." (The 1- in the name is superfluous.)

Chapter 17

Chapter 18

‡p. 1014 In Problem 18.51, the formula for triflate in the note at the bottom of the problem is wrong; it should be —OSO_2CF_3.

Chapter 19

‡p. 1034 In Focused Problem 10.34(c), change "quintuplet" to "quintet." In Focused Problem 19.4d, eliminate the extra parenthesis after δ 1.4.

‡p. 1045 In Focused Problem 19.13b, the correct cross-reference should be to Eq. 19.34b.

‡p. 1076 Section 19.17 should be marked with a "Chemistry in the Real World" icon.

‡p. 1080 At the bottom of the first column, add a sub-objective:
(3) Reversible additions such as cyanohydride formation **19.8**

Then, at the top of the second column, re-number sub-objectives (3)–(8) to read (4)–(9) to accommodate the change.

‡p. 1079 In Fig. P19.43, the mass spectrum should have a black border per spec.

‡p. 1085 In Problem 19.77, in the second line below the structures, change the cross-reference from Sec. 10.8 to Sec. 11.8.

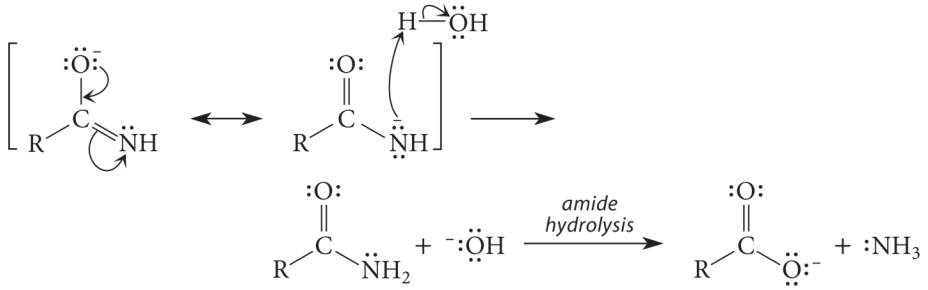
Chapter 20

‡p. 1125 In Problem 20.63f, the name of the target compound should be γ-valerolactone.

Chapter 21

‡p. 1145 In Problem 21.9, replace the word "isomers" with "compounds," to read: "Which of the two compounds in each…"

‡p. 1153 In Eq. 21.44b, there is an extra pair of electrons on the structure on the lower left. The corrected equation is as follows:



‡p. 1189 In Problem 21.60k, the ester that is treated with methanol is glyceryl trioleate (which is actually the structure in Problem 21.41).

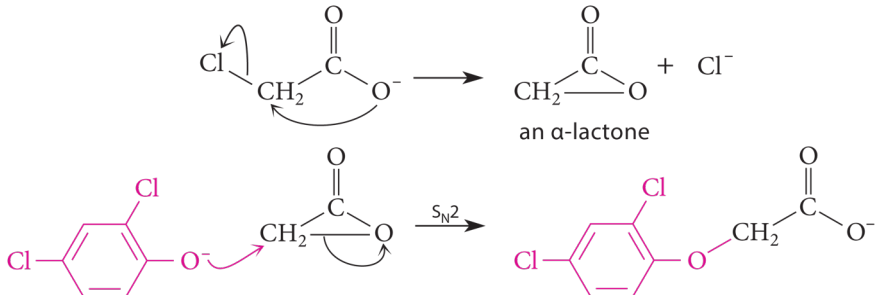
Chapter 22

‡p. 1202 In Eq. 22.21b, the hydronium ion on the right side has an extra electron pair.

‡p. 1204 In Eq. 22.26b, in the second resonance structure the carbonyl carbon should not have a positive charge.

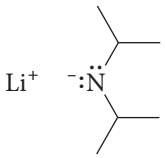
‡p. 1208 In Eq. 22.35b there is an incorrect electron pair near the R group in the R_2CH group of the lowest structure.

‡p. 1209 The discussion in this section implies that, in Eq. 22.38 and 22.39, the nucleophile reacts in an S_N2 reaction with the chloroacetate anion. Another possible mechanism is an anchimeric-assistance mechanism involving an α-lactone intermediate:



The α-lactone is formed because of the proximity effect, which is discussed in Sec. 12.8B. The α-lactone, being highly strained, is rapidly opened by the nucleophile, which is phenoxide in Eq. 22.38 (shown above) or cyanide in Eq. 22.39. (This mechanism is addressed in Focused Problem 12.35 on text p. 658.) It is also possible that the "normal" S_N2 mechanism and the α-lactone mechanism occur with similar rates. A stereochemical experiment using enantiomerically pure 2-chloroacetate-2-*d* could probe the mechanism, as discussed in Sec. 12.8C on text p. 658. The α-lactone mechanism would result in retention of configuration at the asymmetric carbon, whereas the normal S_N2 mechanism would result in inversion of configuration at this carbon.

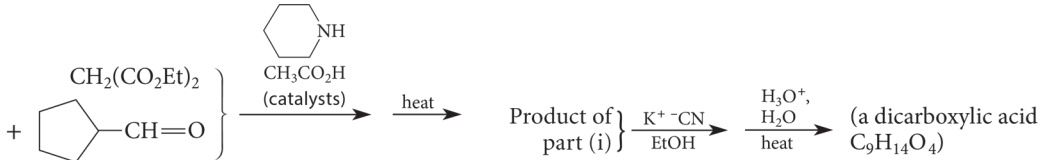
‡p. 1217 In Display 22.56, a methyl branch is missing in the structure of lithium diisopropylamide (LDA) The correct structure is as follows:



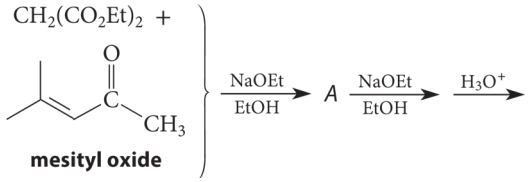
lithium diisopropylamide (LDA)

‡p. 1264 In Study Problem 22.7, in the line above Eq. 22.137, the name of the ketone should be 3-buten-2-one.

‡p. 1268 In Problem 22.67(i), replace the conditions over the second arrow with heat. In Problem 2.67(j), change the formula of the product to $C_9H_{14}O_4$.

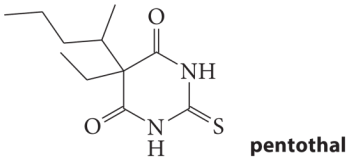


‡p. 1269 In Problem 22.71, the structure of mesityl oxide has an extra carbon. The corrected first part of the equation is



mesityl oxide

‡p. 1273 In Problem 22.93, the structure of pentothal should have an ethyl group rather than a methyl group.



pentothal

Chapter 23

‡p. 1298 In Problem 23.23a and b, the stereochemical designation of the two compounds should be, in part (a), (1*R*,2*R*), and, in part (b), (1*R*,2*S*).

‡p. 1301 The margin callout for the Further Exploration is misnumbered; it should be to Further Exploration 23.3. (The title is correct.)

Chapter 24

‡p. 1344 In Problem 24.7, change the word “chain” to “chair.”

‡p. 1355 In Problem 24.20, delete the hyphen from the word “galacturonic.”

‡p. 1374 In Problem 24.39, delete “the most stable,” so the problem now reads, “…draw chair conformations of…”

‡p. 1374 In Problem 24.44, replace “fill in the details for” with “write a mechanism for the”

‡p. 1376 In Problem 24.53(f), the O in 2-*O*-methyl should be italic.

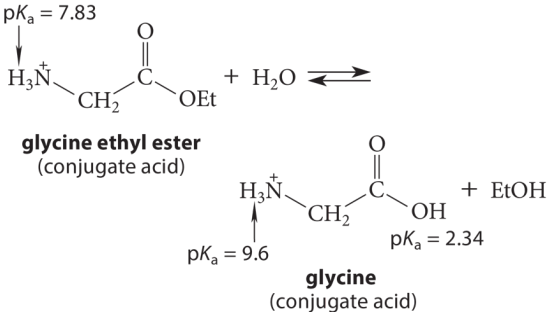
Chapter 25

‡p. 1388 On the first line of text below the first display, omit "Å" and close up.

‡p. 1419 In Problem 25.21(c), add parentheses within the name to read "Ethyl 3-(ethylthio)hexanoate." This is required to show that the substituent is a 3-ethylthio group on an ordinary ester rather than a 3-ethyl group on a thioester.

‡p. 1423 Make the following changes to Problem 25.40: Change the first sentence to read, "The $\Delta G°$ for hydrolysis of the conjugate acid of glycine ethyl ester to the conjugate acid of glycine, shown in the following equation, is –8.24 kJ mol^{-1} (–1.97 kcal mol^{-1})."

Replace the diagram with the following:

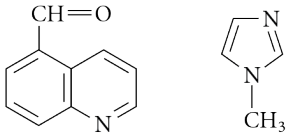


(The calculation is for the amine-protonated compounds rather than the neutral amines.)

Chapter 26

‡p. 1466 The structures in Problem 26.28(b) and (c) are wrong. They should be:

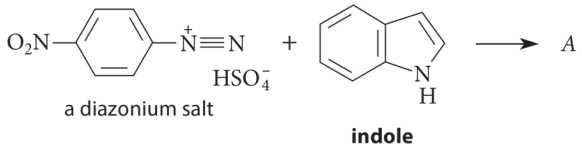
(a) (b)



‡p. 1466 In Figure P26.30 at the bottom of the page, delete the (h) at the top left of the figure. This Figure goes with part (g) of Problem 26.30, but this is clear from the reference in the problem.

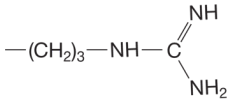
‡p. 1468 In Problem 26.44(a), the last line should be, "and T at the 3′ end." (Substitute "at" for the last "and.")

‡p. 1470 In Problem 26.53, the H_2N— (amino) group in the structure should be a O_2N— (nitro) group. The correct structure is

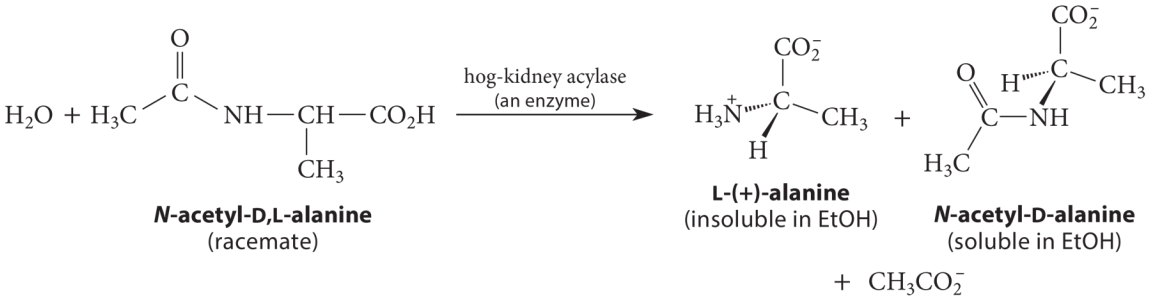


Chapter 27

‡p. 1479 In the second page of Table 27.1, the structure of the side chain for the amino acid arginine is missing an NH group. The corrected structure is



‡p. 1493 In Eq. 27.30, the positive charge in the first product should be on the nitrogen:



‡p. 1495 In the line of text below the structure of the Fmoc group at the bottom of the page, the cross-reference should be to Eq. 27.39.

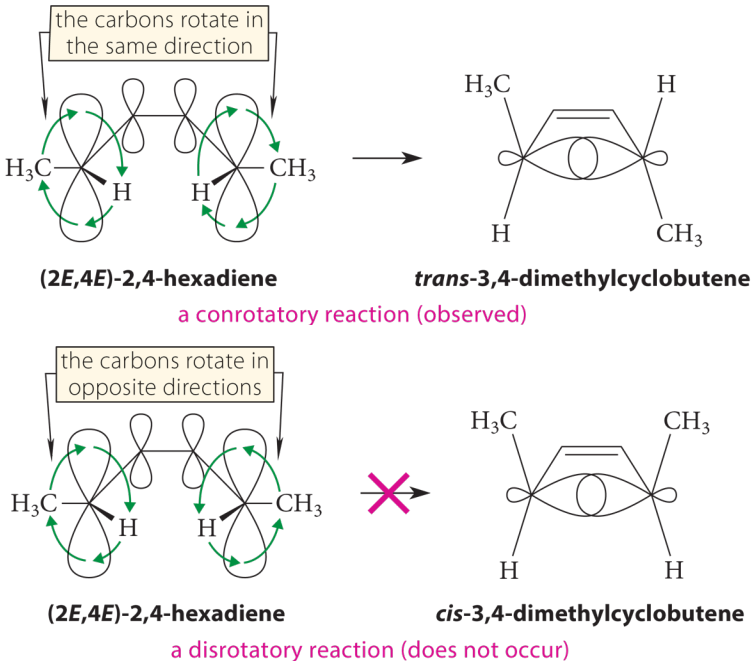
‡p. 1544 In Problem 27.52(d), the formula in parentheses should be corrected to $C_7H_9NO_4$.

‡p. 1545 In Problem 27.61, the six masses should be 614.4, 598.4, 470.3, 371.2, 300.2, and 114.1.

‡p. 1549 In Problem 27.93(b), the separation should be by anion-exchange chromatography rather than cation-exchange chromatography.

Chapter 28

‡p. 1562 The green wedged bonds in the two displays should be black. The green motion arrows shows how these black bonds move.



Index

‡p. I-26 In the entry beginning "2,4-pentadien-1-yl system," middle column, the pi(p) should be pi(π).

‡p. I-35 The page reference is missing in the entry for Zinc(0) in the third column, third entry from the bottom. The page reference should be 1245–1246. The full entry should read

Zinc(0), reagent for forming Reformatsky reagents, 1245–1246

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