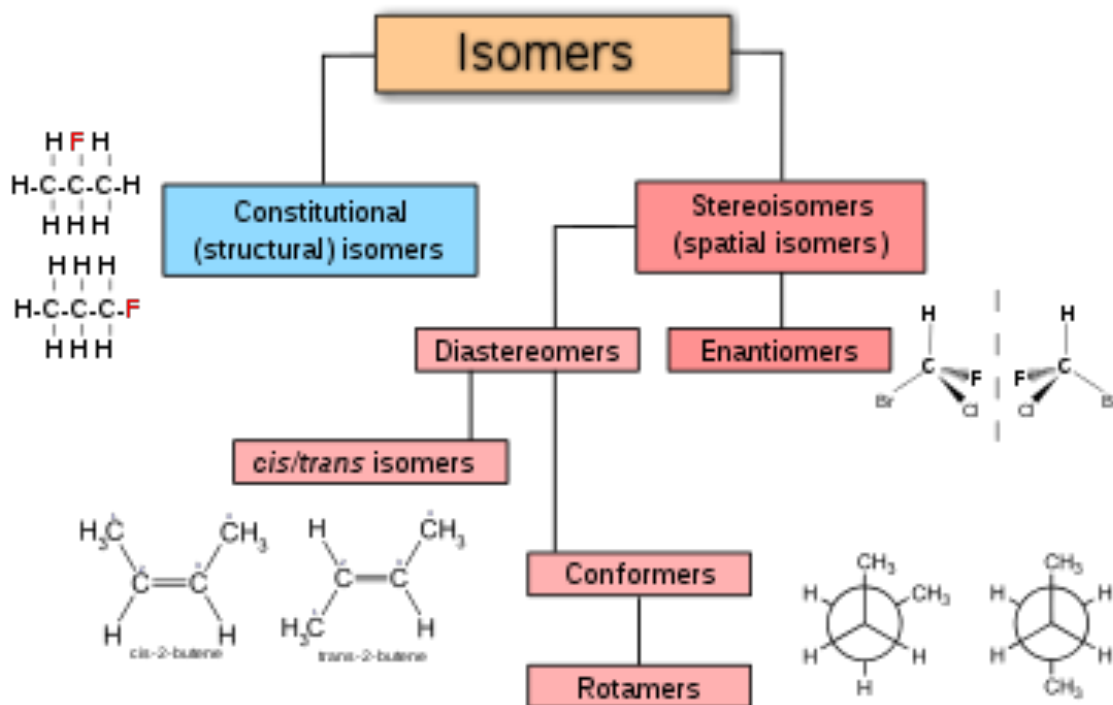


Stereochemistry

220C

10/6/26



ΔH° at 25°C

	Polyatomic Molecules	
	kcal/mol	kJ/mol
C—H	99	414
C—C	83	347
C=C	146	610
C $\equiv$ C	200	836
C—O	86	359
C=O ¹	192	803
C=O ²	166	694
C=O ³	176	736
C=O ⁴	179	748
C—N	73	305
C=N	147	615
C $\equiv$ N	213	890
C—F	116	485
C—Cl	81	339
C—Br	68	284
C—I	51	213
O—H	111	464
O—O	35	146
O—Cl	52	217

electrons. Avogadro's number of photons (6×10^{23}). Since the energy is proportional to the frequency ($E = h\nu$), an einstein of light represents a different amount of energy depending on the wavelength of the light.

TABLE 27-1 Energies Associated with the Wavelength of Light Absorbed

λ , nm	Energy	
	kcal/mol	kJ/mol
200	143.0	598
250	114.4	479
300	95.3	399
350	81.7	342
400	71.5	299
450	63.5	266
500	57.2	239
550	52.0	218
600	47.7	200
650	44.0	184
700	40.8	171

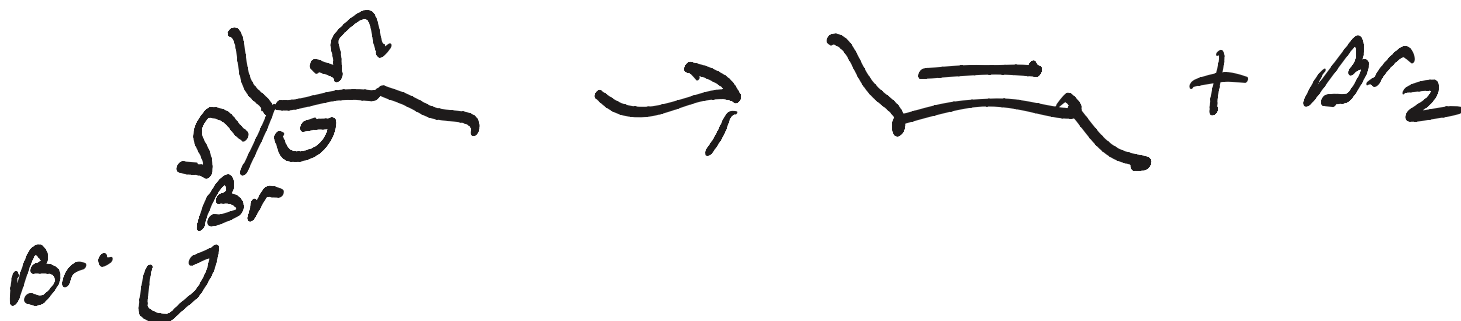
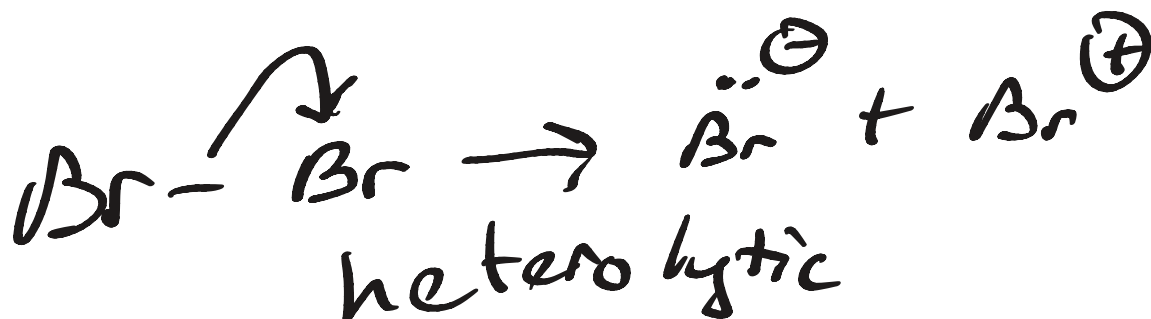
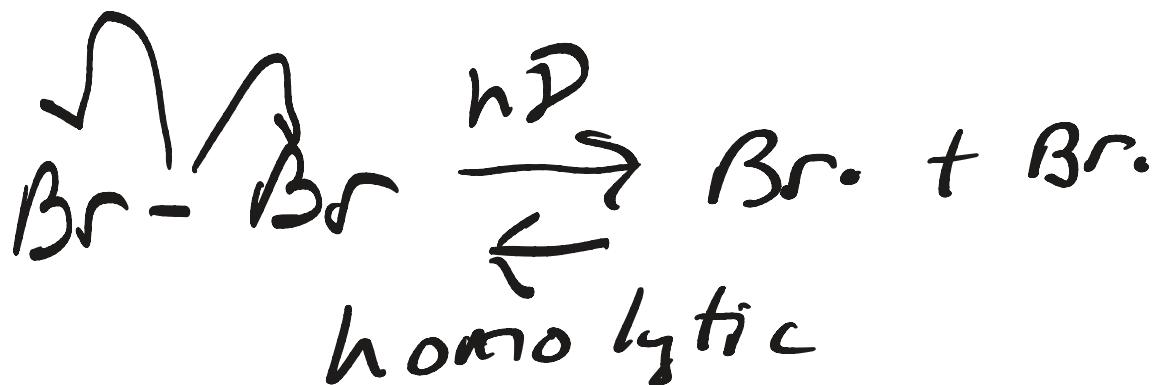
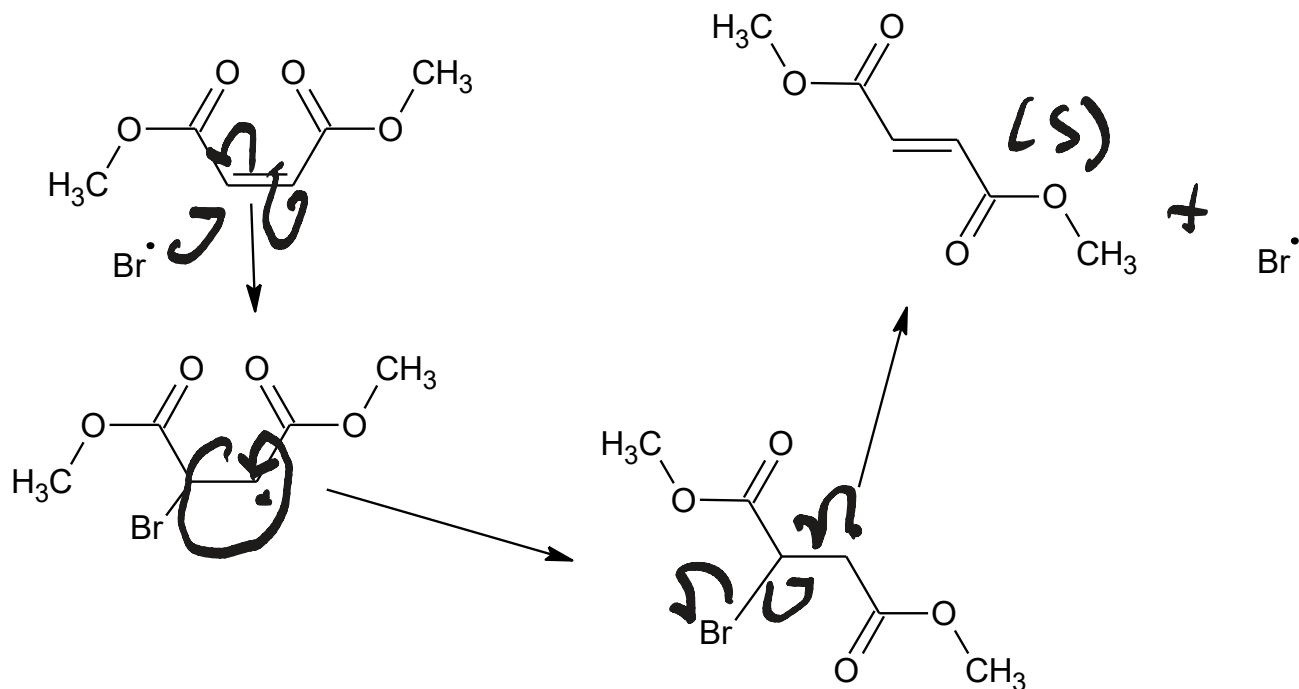
... breaking or making of bonds during a chem-
... is known as the heat of ...

Bonding in Organic Molecules

TABLE 2-4 Average Bond Energies,

Diatomic Molecules

	kcal/mol	kJ/mol
H—H	104.2	436
F—F	37.5	157
Cl—Cl	58.0	243
Br—Br	46.3	194
I—I	36.5	153
H—F	135.9	568
H—Cl	103.1	431
H—Br	87.4	365
H—I	71.4	299
O=O	119.1	498
N≡N	225.9	945



$$mp, \% \text{ yield} \leftarrow \begin{array}{l} \text{good yield} \\ 65\% \\ 20-40 \end{array}$$

$$\frac{\text{actual (g)}}{\text{expected (g)}} \times 100$$

1 1/2 hours

+ theoretical



$$\frac{\text{g DMM}}{\text{m.w. DMM g/mol}} = \# \text{ moles DMM}$$

$$\begin{aligned} & \# \text{ moles DMM} \left(\frac{1 \text{ mol DMF}}{1 \text{ mol DMM}} \right) \\ & \# \text{ moles DMF} \times \text{m.w. DMF g/mol} \\ & = \text{g DMF} \end{aligned}$$