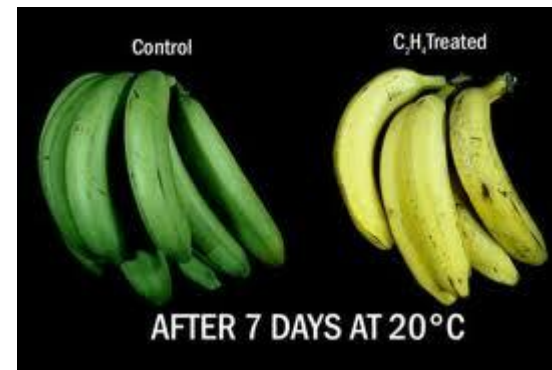
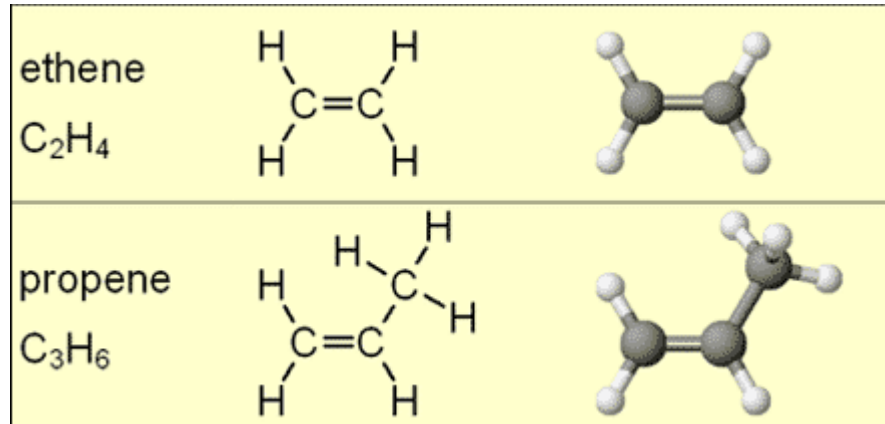
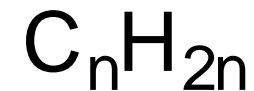
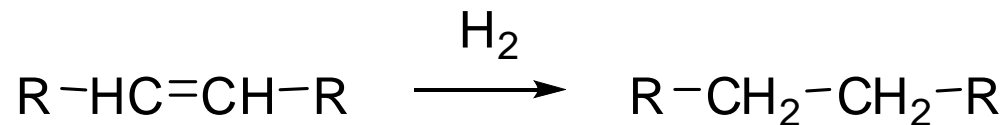


Alkeny

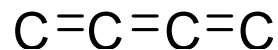




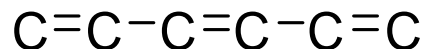
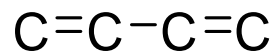
alkeny

Názvosloví alkenů

kumulované

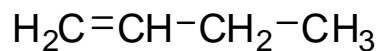


konjugované



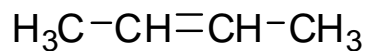
izolované





1 2 3 4

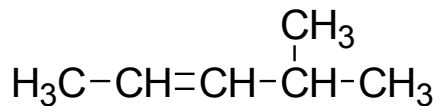
but-1-en



1 2 3 4

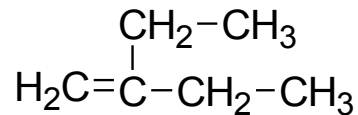
but-2-en

V případě rozvětvených uhlovodíků má násobná vazba při číslování prioritu.



1 2 3 4 5

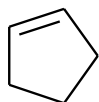
4-methylpent-2-en
(ne 2-methylpent-3-en)



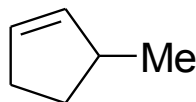
1 2 3 4

2-ethylbut-1-en

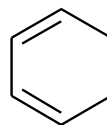
U cyklických uhlovodíků začíná číslování na dvojně vazbě.



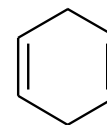
cyklopenten



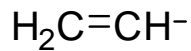
3-methylcyklopenten



1,3-cyklohexadien



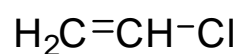
1,4-cyklohexadien



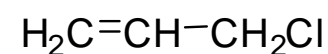
vinyl
(ethenyl)



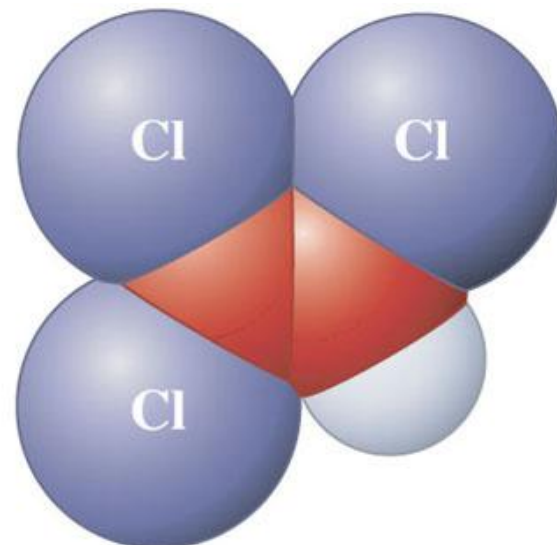
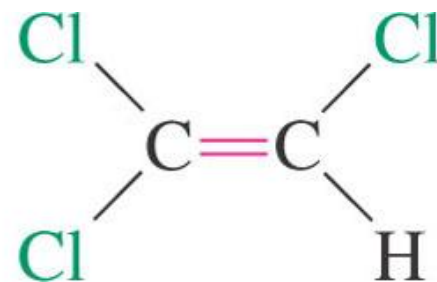
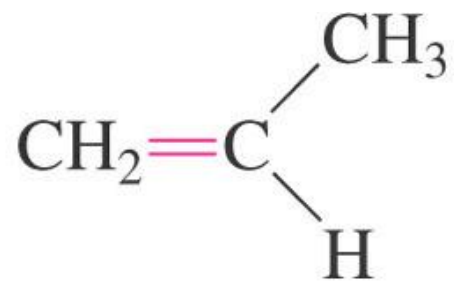
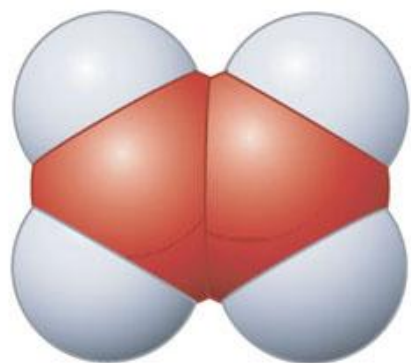
allyl
(3-propenyl)



vinylchlorid



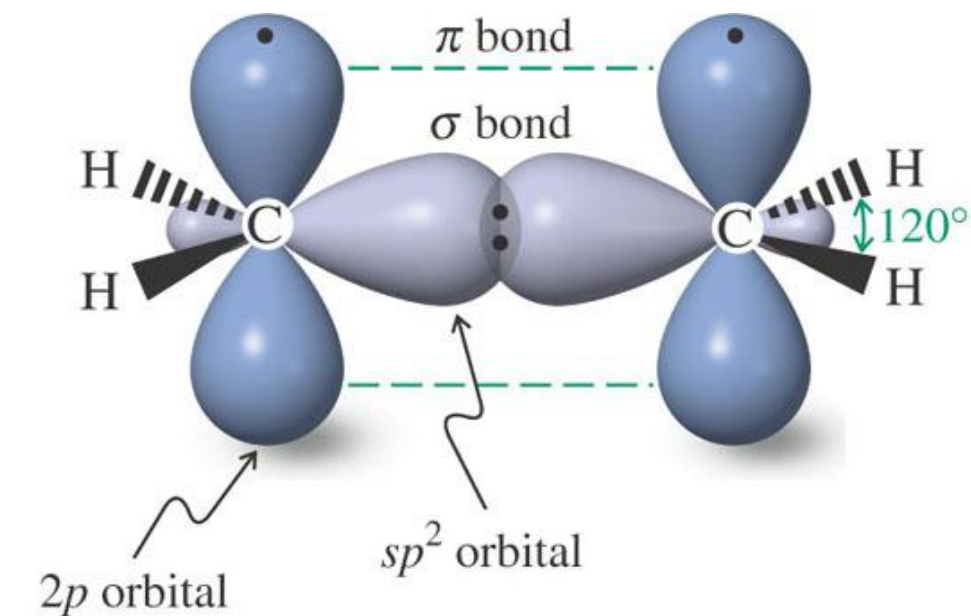
allylchlorid



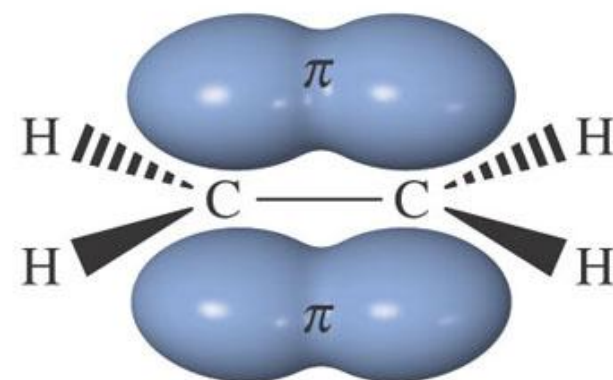
Alkeny. Vlastnosti dvojn  vazby

Vlastnosti	C-C	C=C
1. Počet p�ipojen�ch atomu	4	3
2. Rotace	ano	ne
3. Geometrie vazby	mnoho konformac�	plan�rn�
4. Uhel mezi vazbami	109.5�	120�
5. D�lka vazby (�)	1.54	1.34

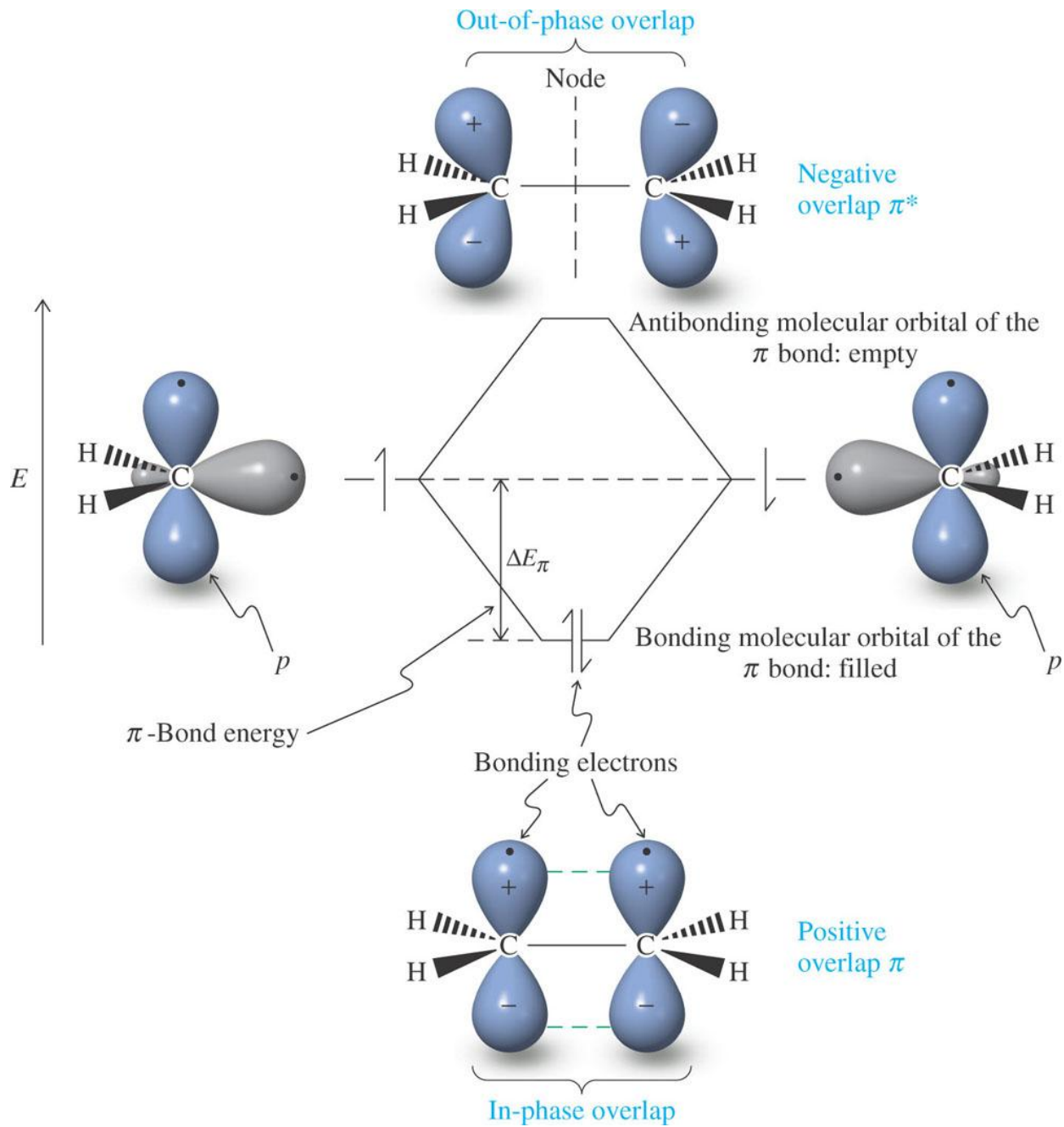
Orbitalov  model dvojn  vazby



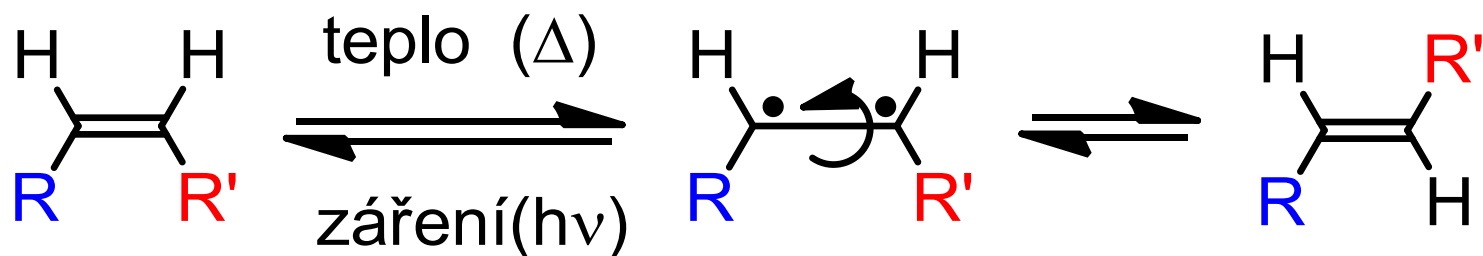
A



B

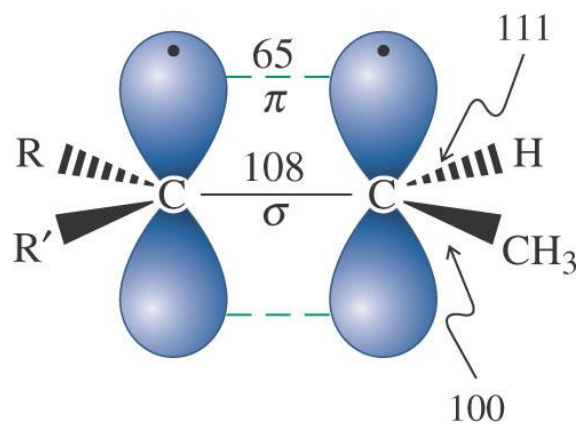
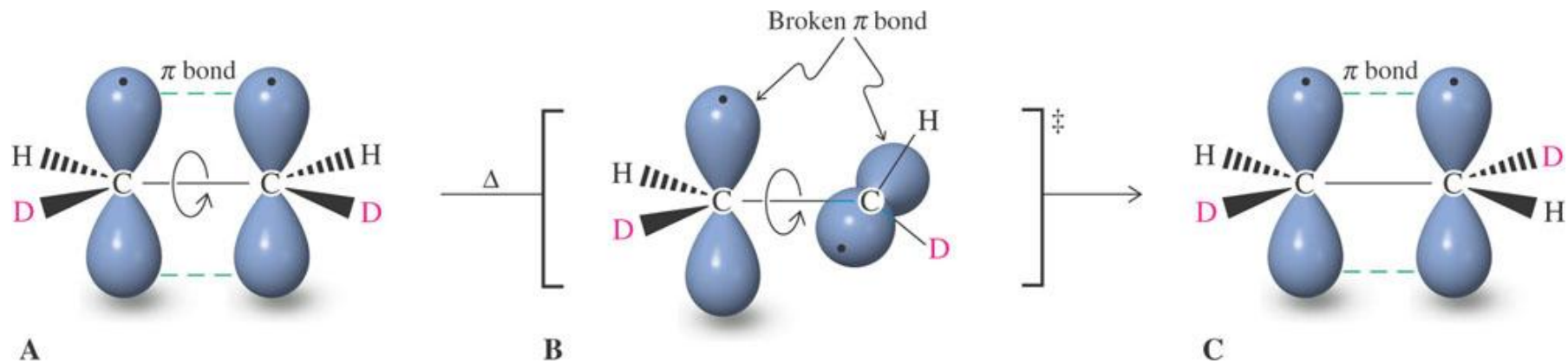


Cis a trans izomerie a izomerizace alkenů

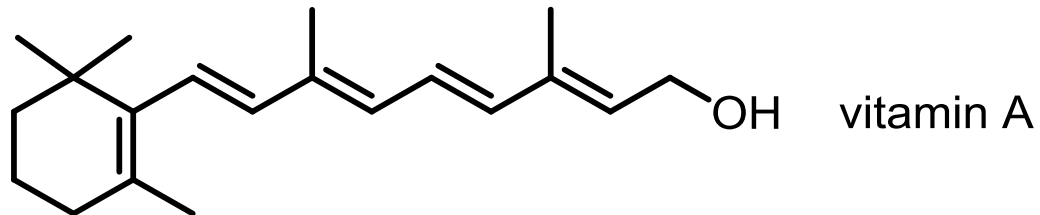
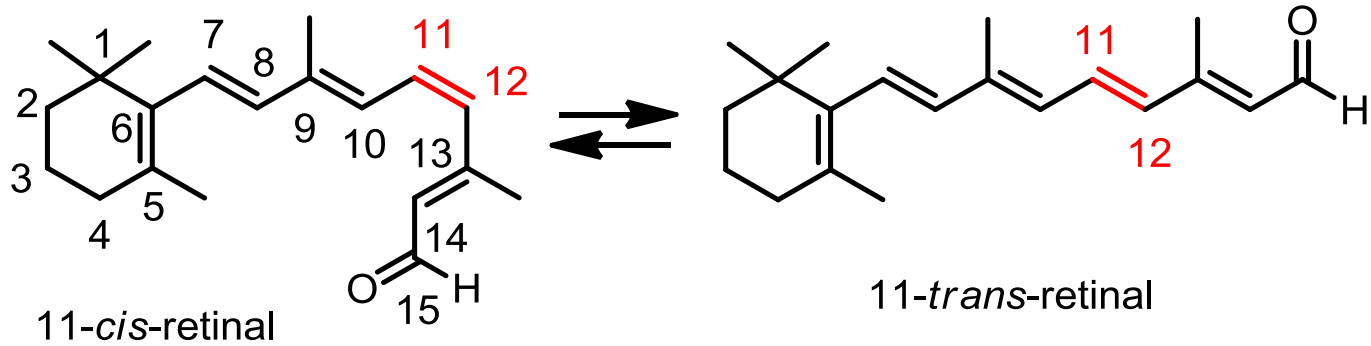
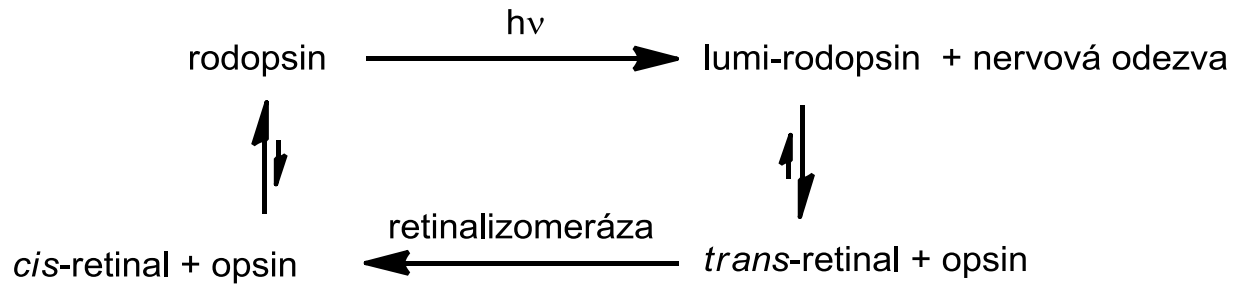


Z- (zusammen)

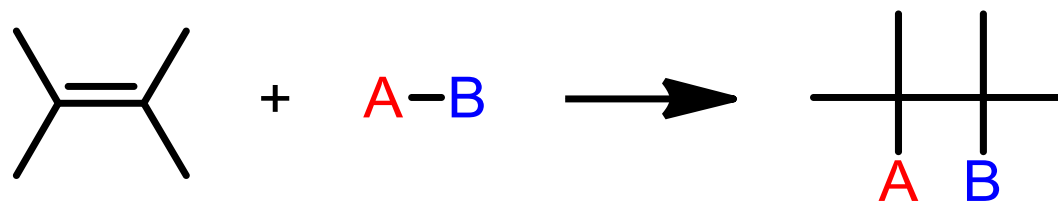
E- (entgegen)



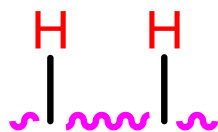
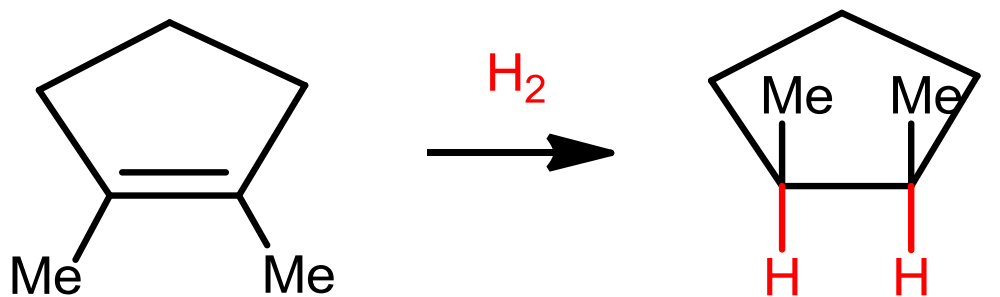
Chemie zraku



Adiční reakce alkenů



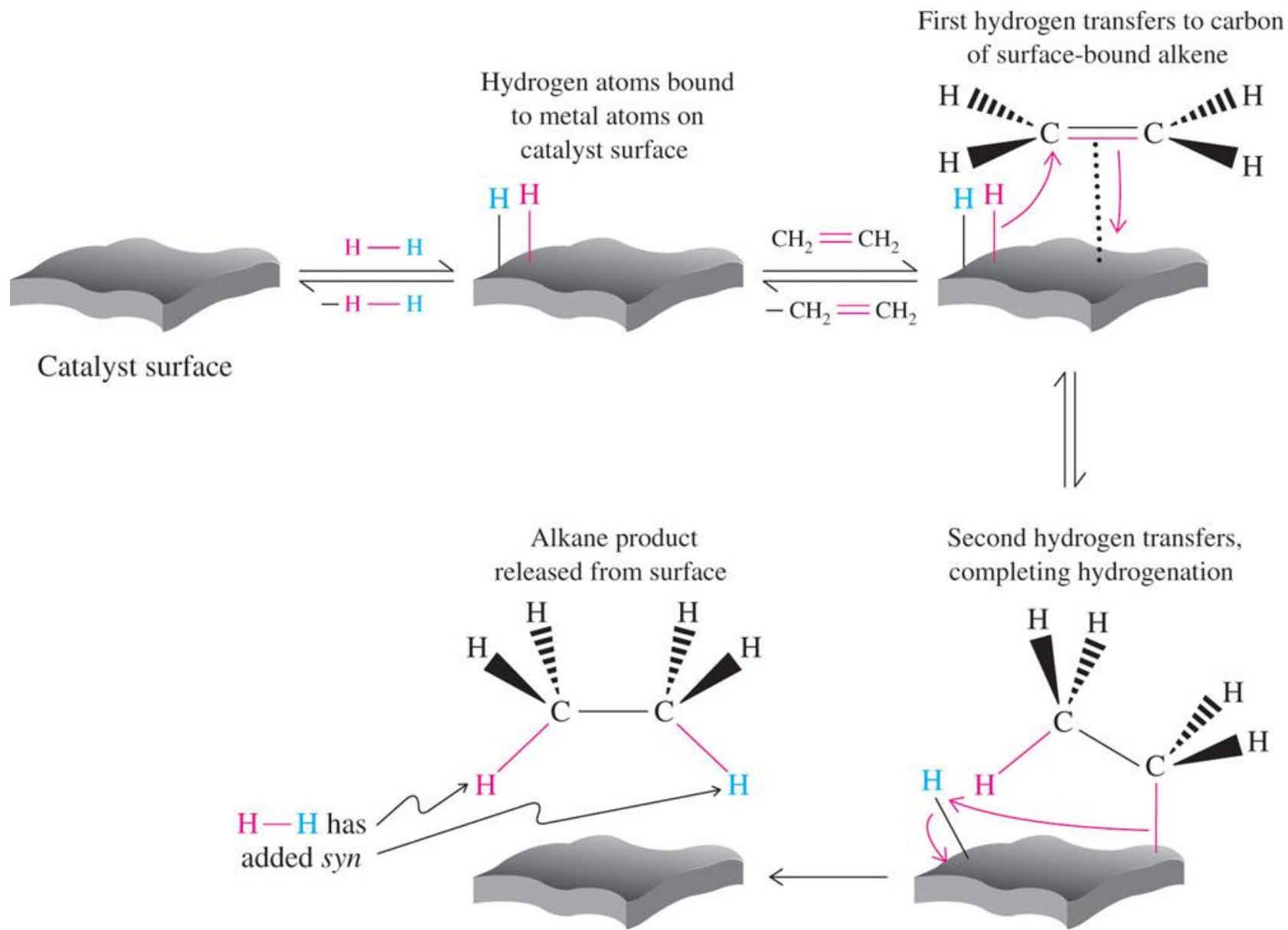
Adice vodíku

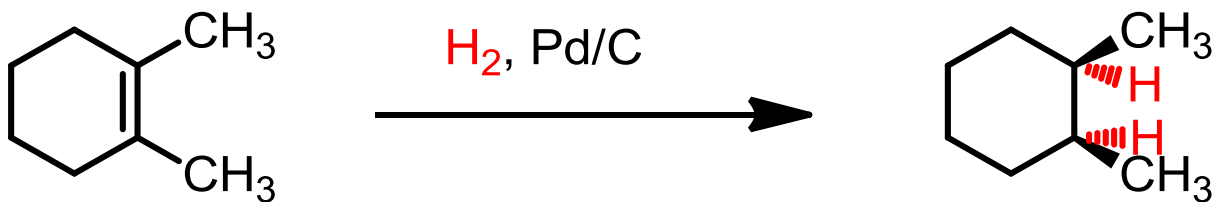
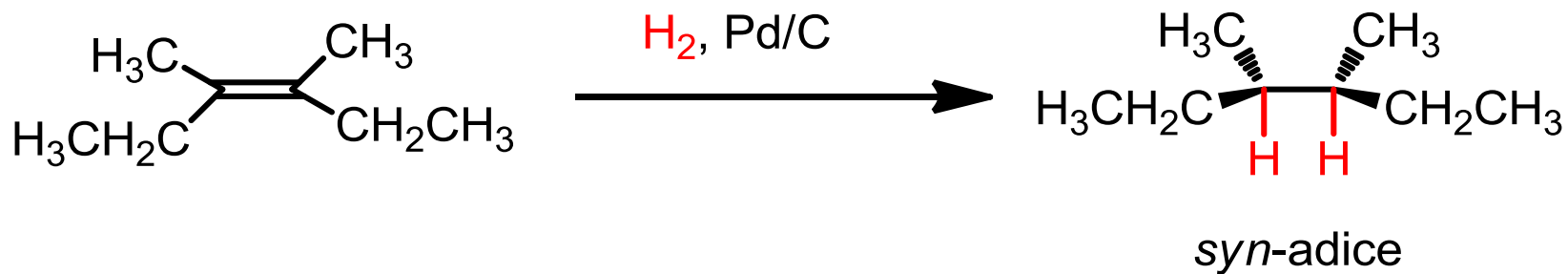
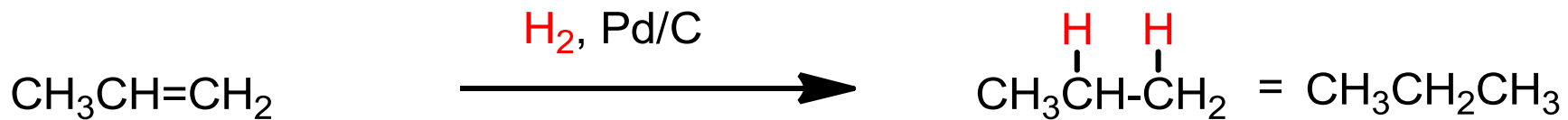


katalyzátor

Pt, Pd

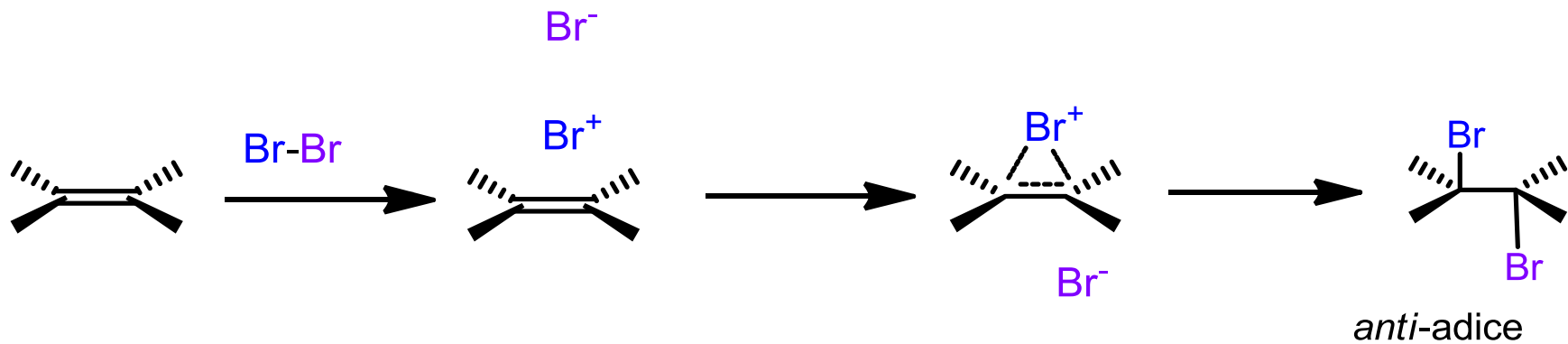
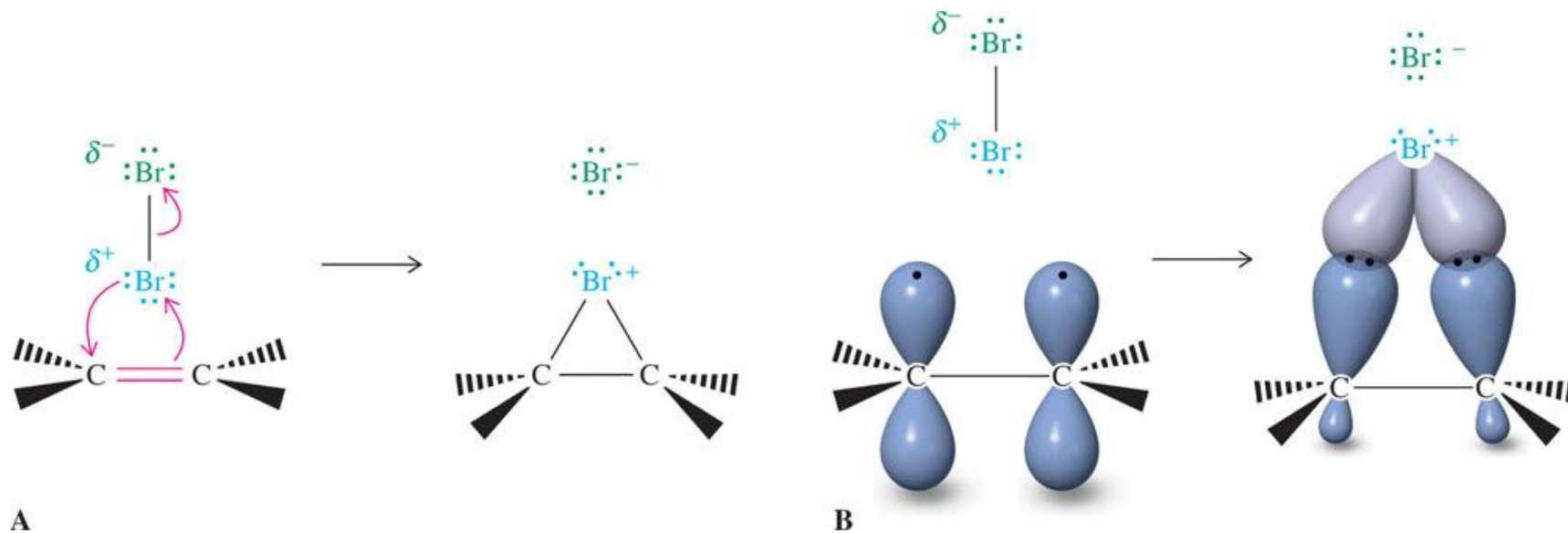
katalyzátor

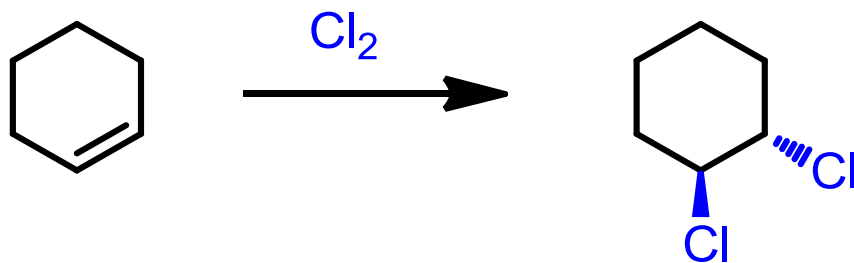
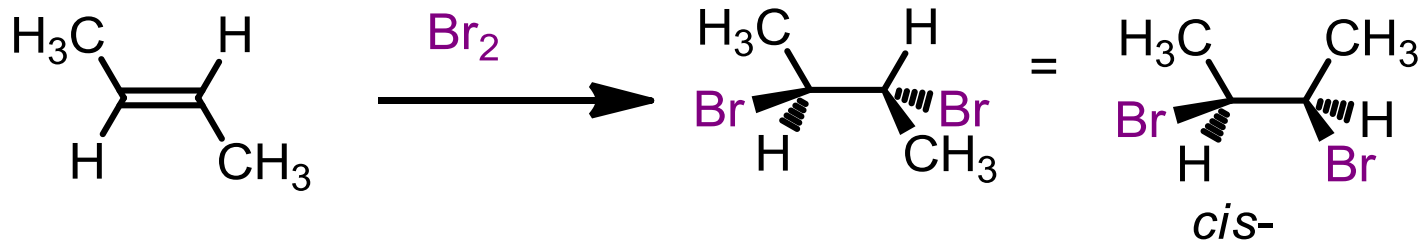
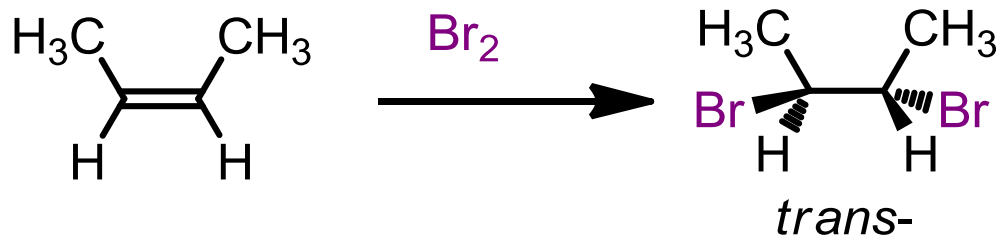
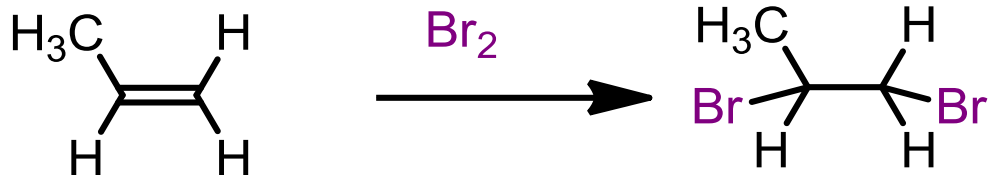
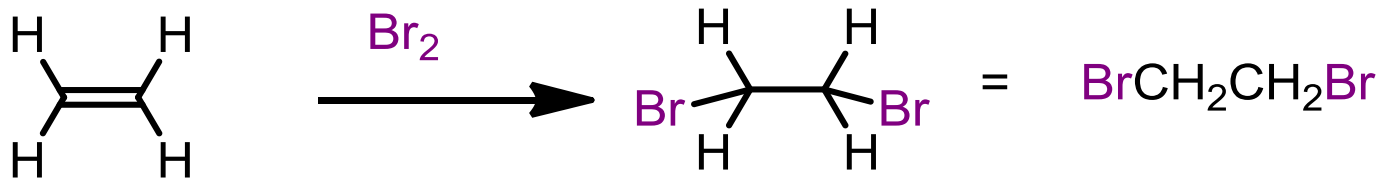




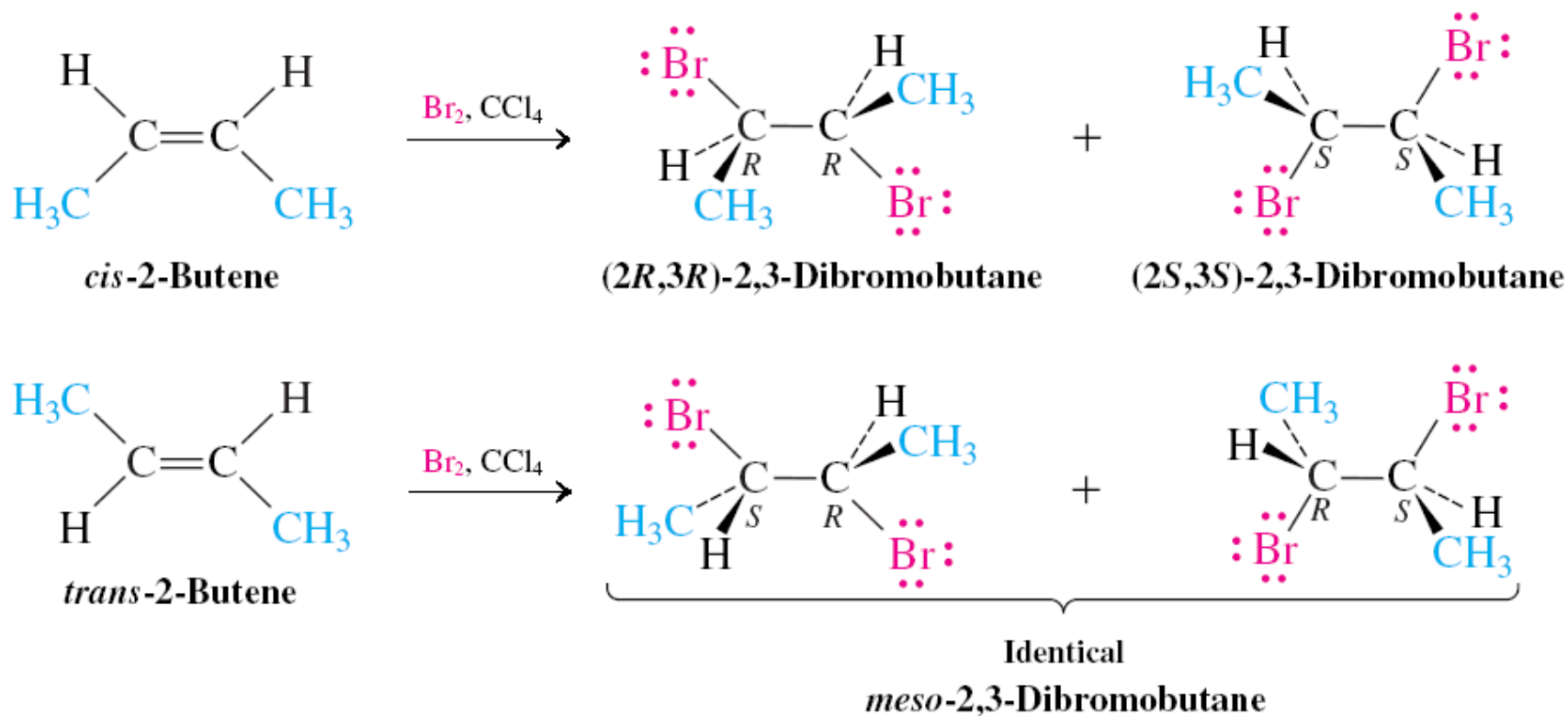
Elektrofilní adice

Adice halogenů (symetrických činidel)



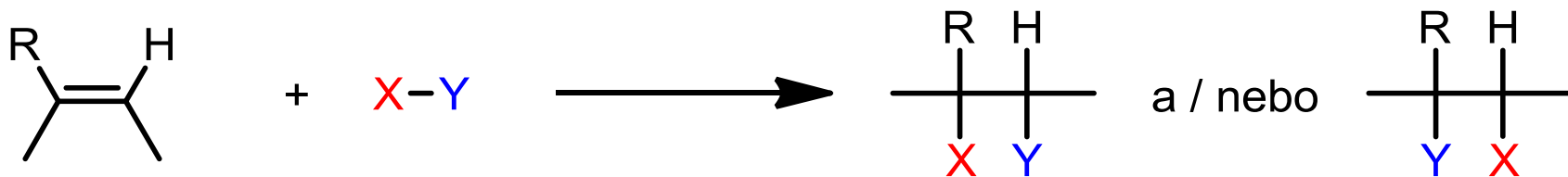


Stereospecific 2-Butene Bromination



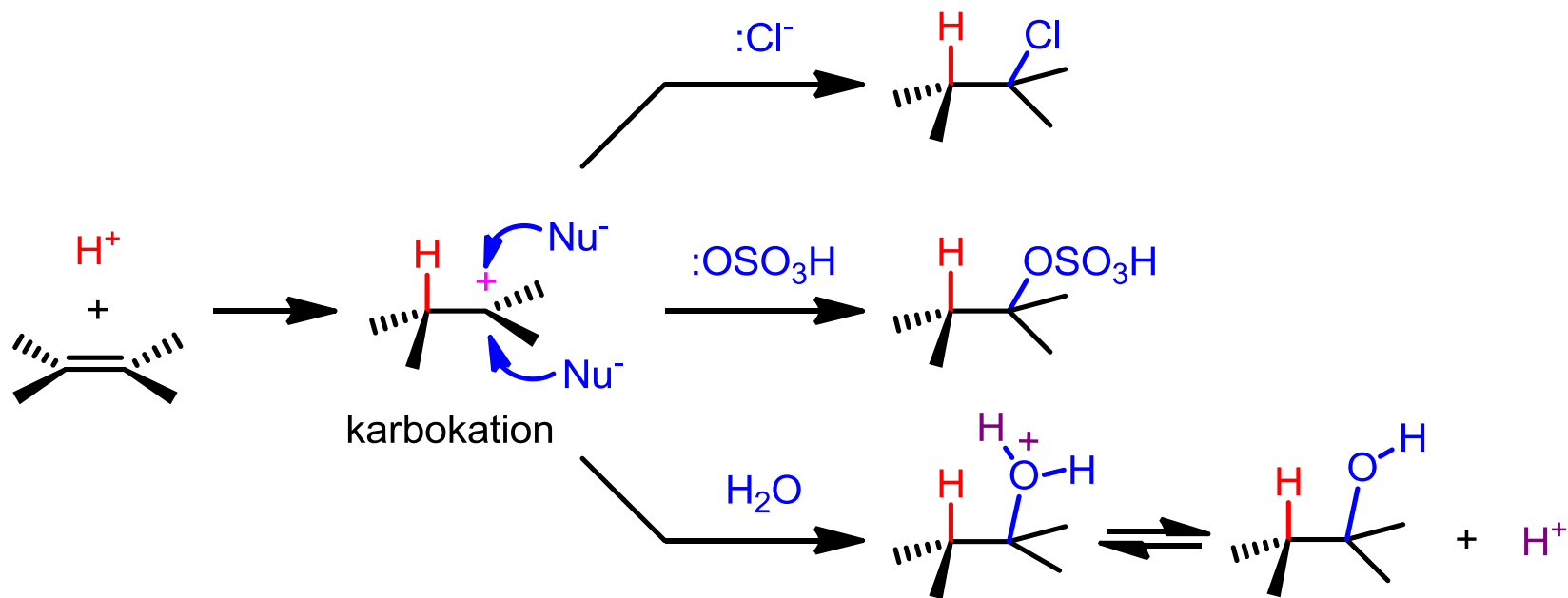
Elektrofilní adice

Adice nesymetrických činidel

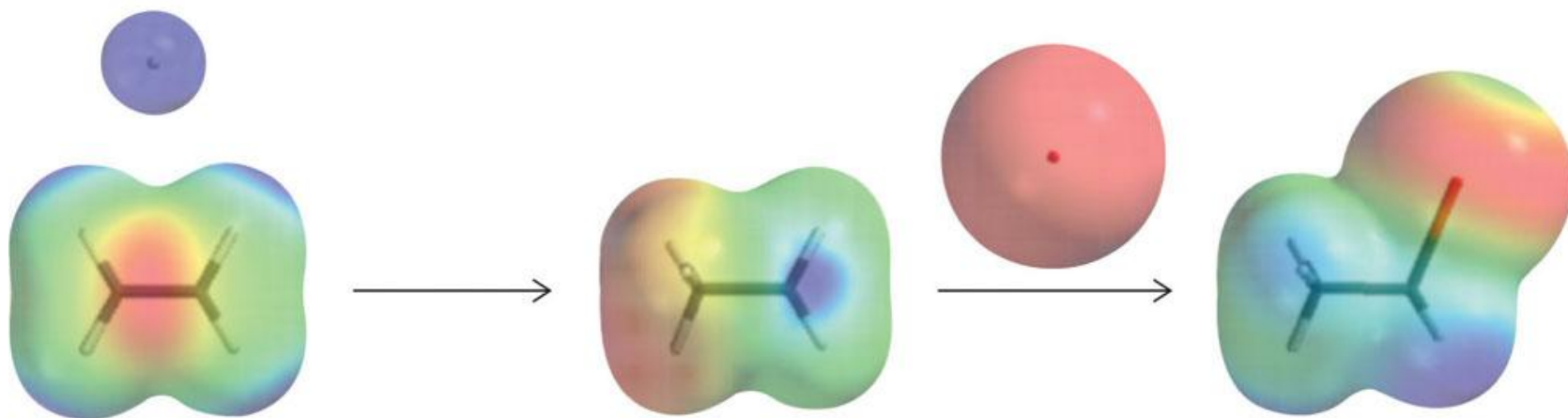
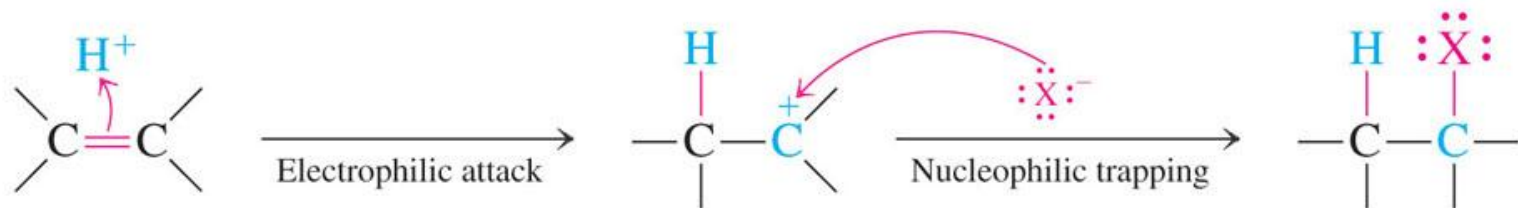


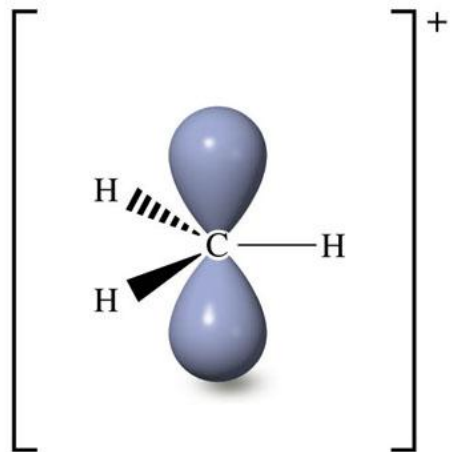
nesymetricky
substituovaný
alken

nesymetrické
činidlo



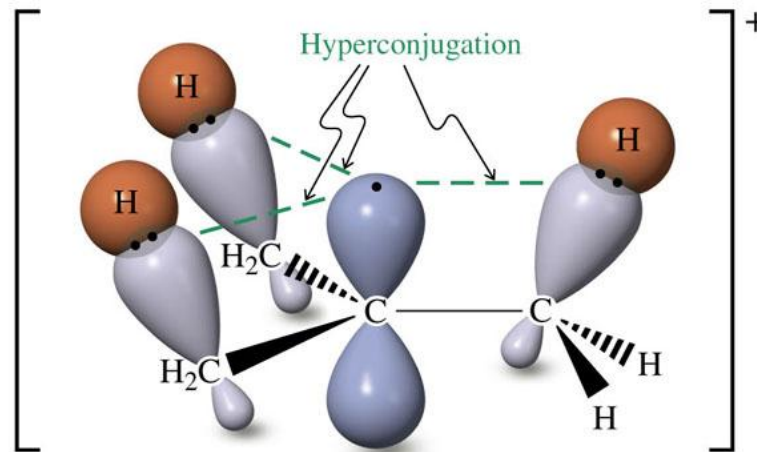
Mechanism of Electrophilic Addition of HX to Alkenes





Methyl cation

A

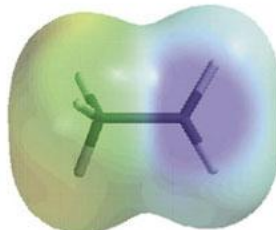


1, 1-Dimethylethyl cation
(*tert*-Butyl cation)

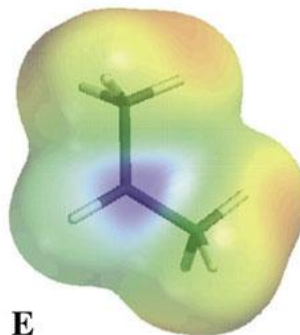
B



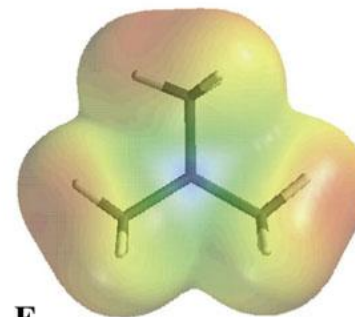
C



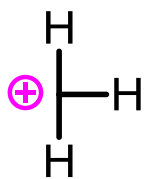
D



E

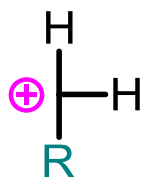


F



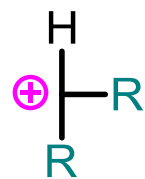
methylový

<



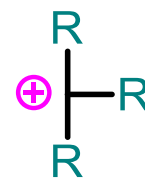
primární

<<



sekundární

<



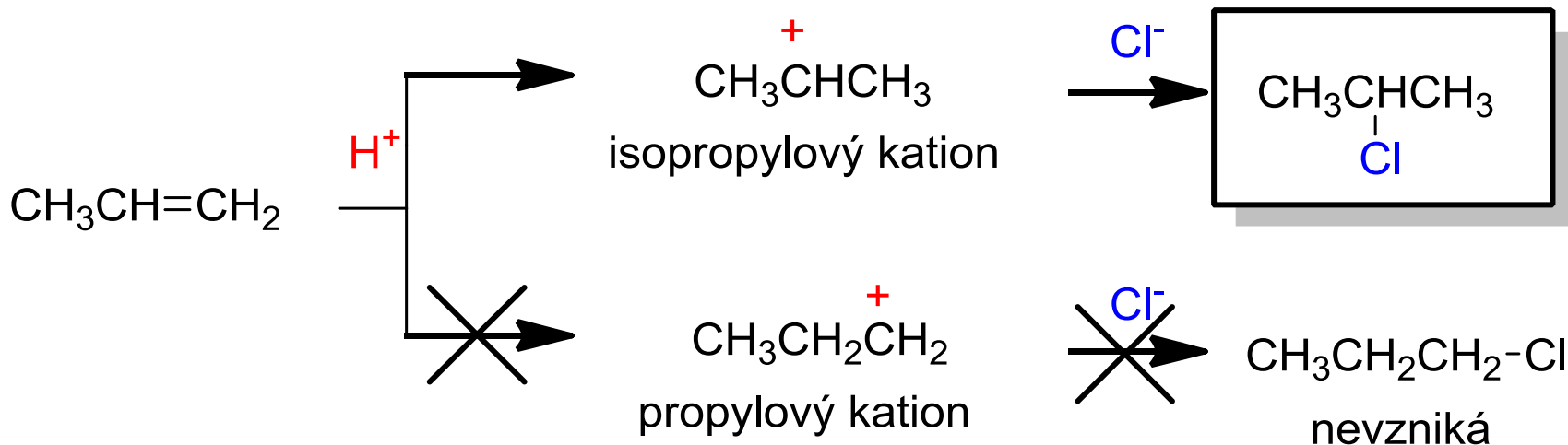
terciární

nejméně stabilní



nejstabilnější

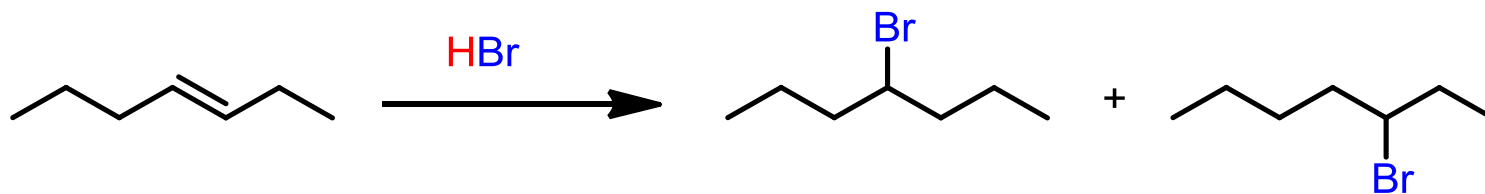
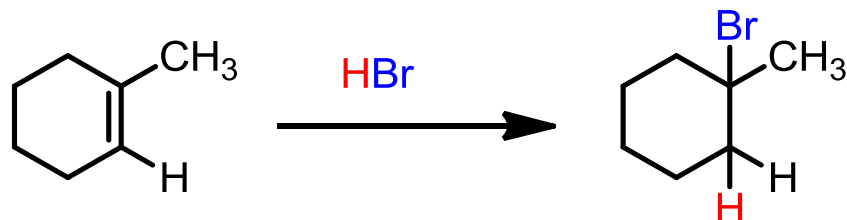
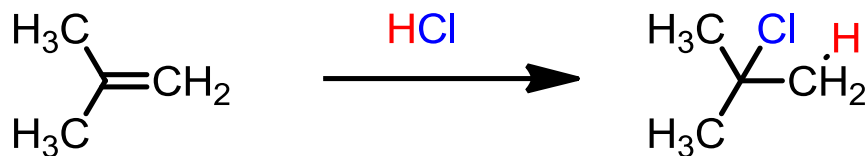
Markovnikovo pravidlo



Markovnikovo pravidlo: Adice nesymetrického činidla na nesymetrický alken probíhá tak, že **elektropozitivní částice** činidla se aduje na uhlíkový atom dvojně vazby, na který je navázán **větší počet vodíkových atomů**.

Markovnikovo pravidlo: adice nesymetrických činidel na nesymetrickou dvojnou vazbu probíhá tak, aby vzniknul co **nejstabilnější karbokation** jako meziprodukt

Adice halogenvodíků



Adice vody

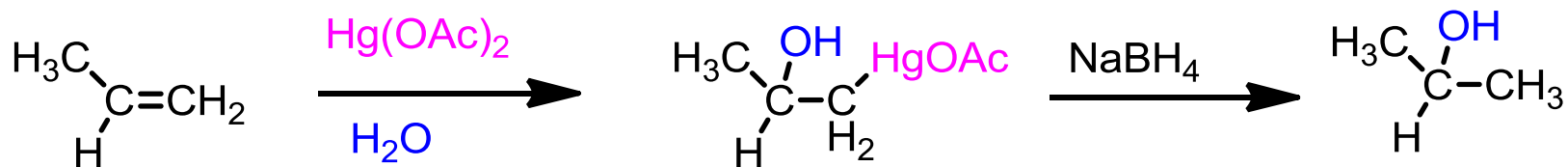
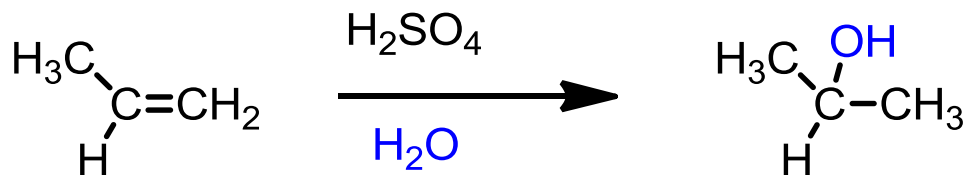
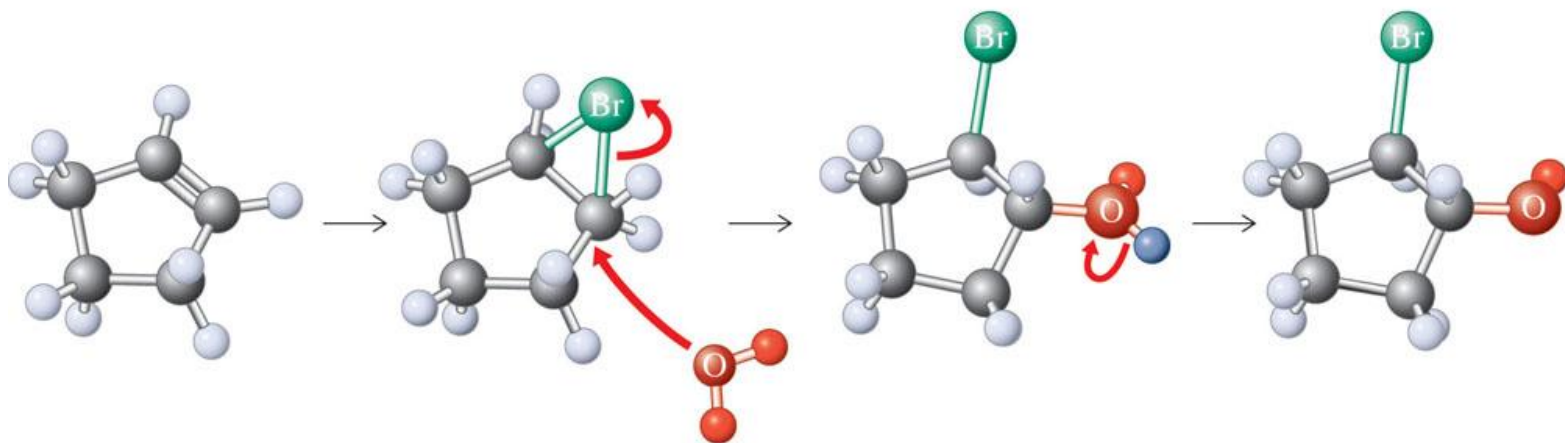
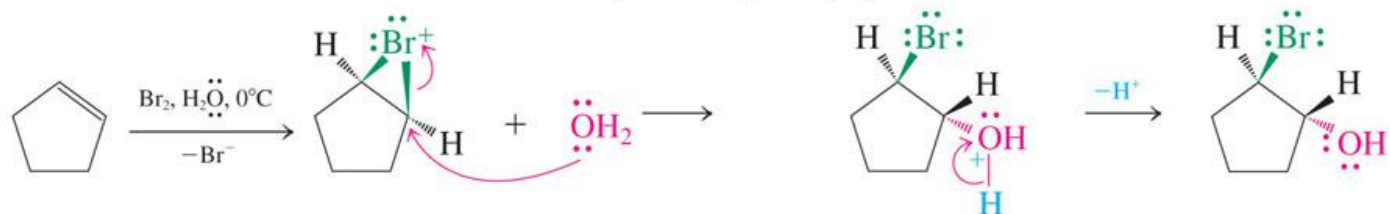


Table 12-2 Reagents A–B That Add to Alkenes by Electrophilic Attack

$ \begin{array}{c} \text{H} & & \text{CH}_3 \\ & \diagdown & / \\ & \text{C}=\text{C} & \\ & / & \diagdown \\ \text{H} & & \text{CH}_3 \end{array} + \delta^+ \text{A}-\text{B}^{\delta-} \longrightarrow \begin{array}{c} \text{H} & \text{CH}_3 \\ & \\ \text{H}-\text{C}-\text{C}-\text{CH}_3 \\ & \\ \text{A} & \text{B} \end{array} $		
Name	Structure	Addition product to 2-methylpropene
Bromine chloride	$:\ddot{\text{Br}}-\ddot{\text{Cl}}:$	$:\ddot{\text{Br}}\text{CH}_2\text{C}(\text{CH}_3)_2$ $:\ddot{\text{Cl}}:$
Cyanogen bromide	$:\ddot{\text{Br}}-\text{CN}:$	$:\ddot{\text{Br}}\text{CH}_2\text{C}(\text{CH}_3)_2$ $\text{CN}:$
Iodine chloride	$:\ddot{\text{I}}-\ddot{\text{Cl}}:$	$:\ddot{\text{I}}\text{CH}_2\text{C}(\text{CH}_3)_2$ $:\ddot{\text{Cl}}:$
Sulfenyl chlorides	$\text{R}\ddot{\text{S}}-\ddot{\text{Cl}}:$	$\text{R}\ddot{\text{S}}\text{CH}_2\text{C}(\text{CH}_3)_2$ $:\ddot{\text{Cl}}:$
Mercuric salts	$\text{XHg}-\text{X}^a, \text{H}\ddot{\text{O}}\text{H}$	$\text{XHgCH}_2\text{C}(\text{CH}_3)_2$ $:\ddot{\text{O}}\text{H}$
<p>^aX here denotes acetate.</p>		

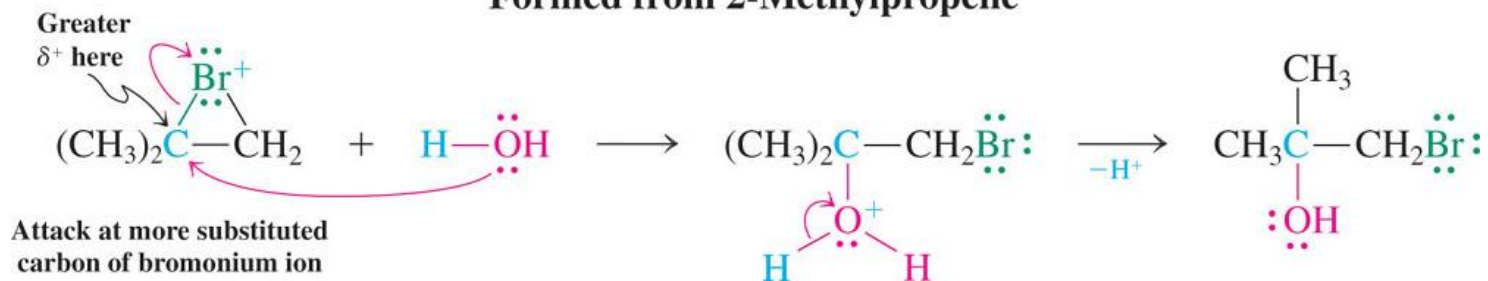
Bromoalcohol (Bromohydrin) Synthesis



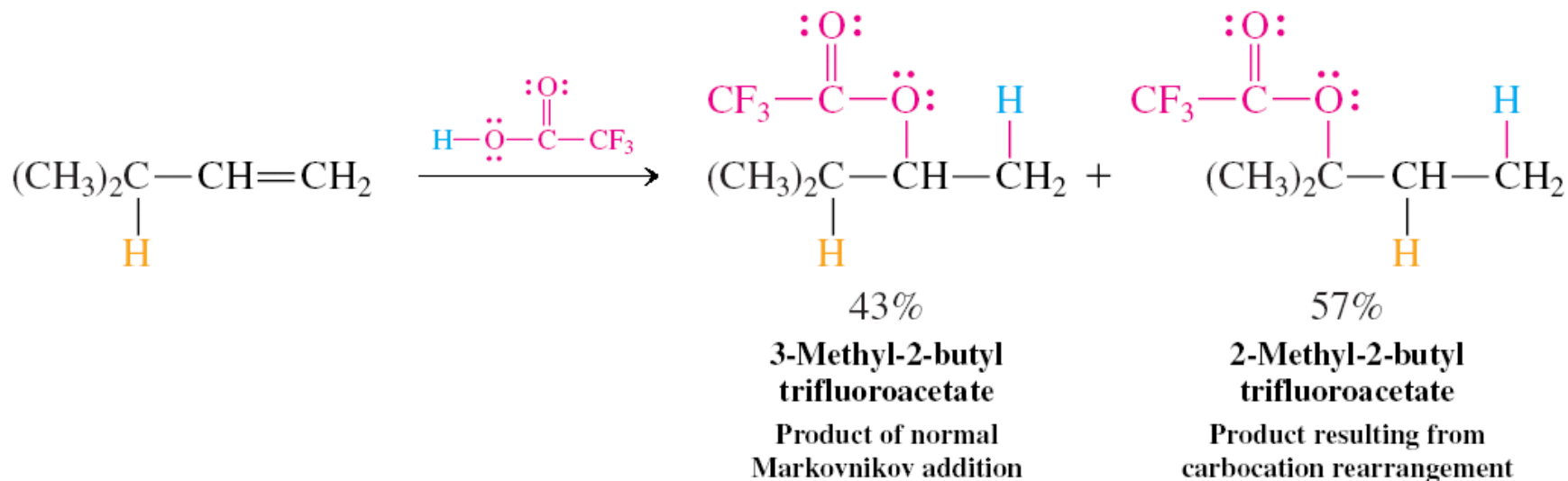
Cyclopentene

trans-2-Bromocyclopentanol

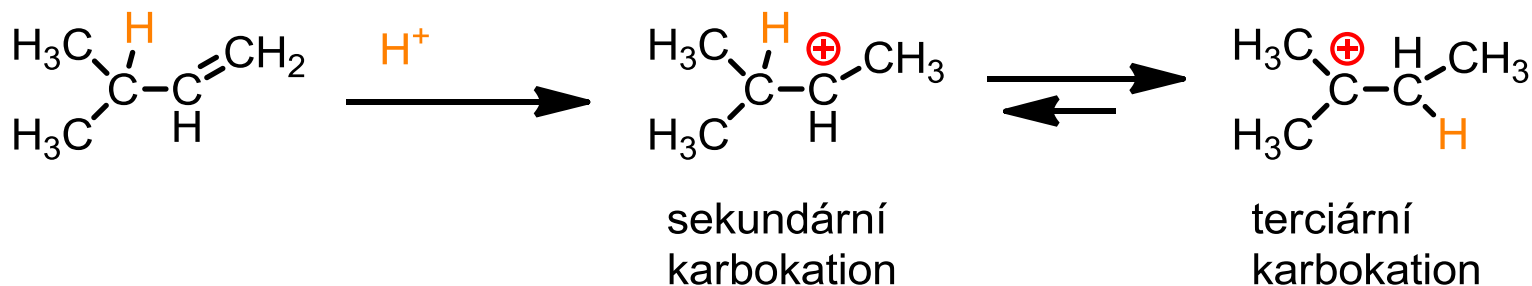
Regioselective Opening of the Bromonium Ion Formed from 2-Methylpropene



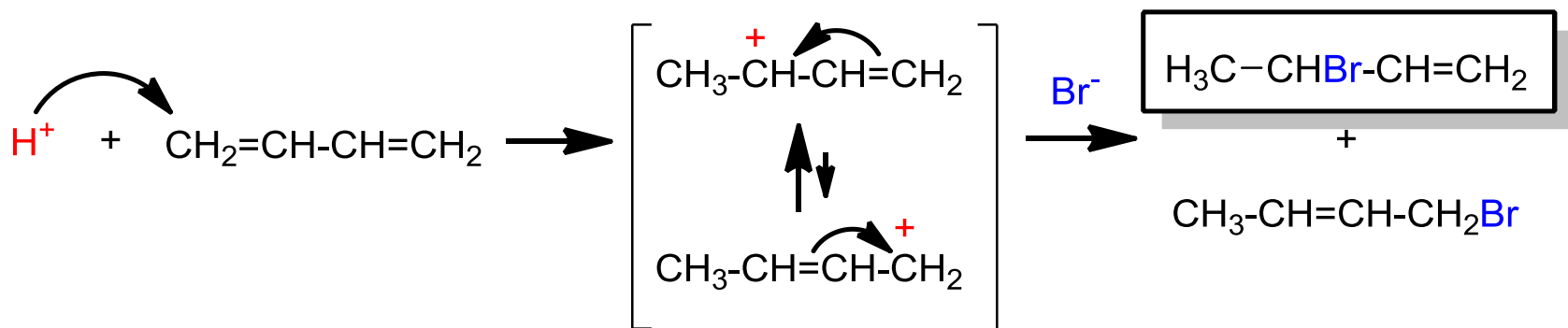
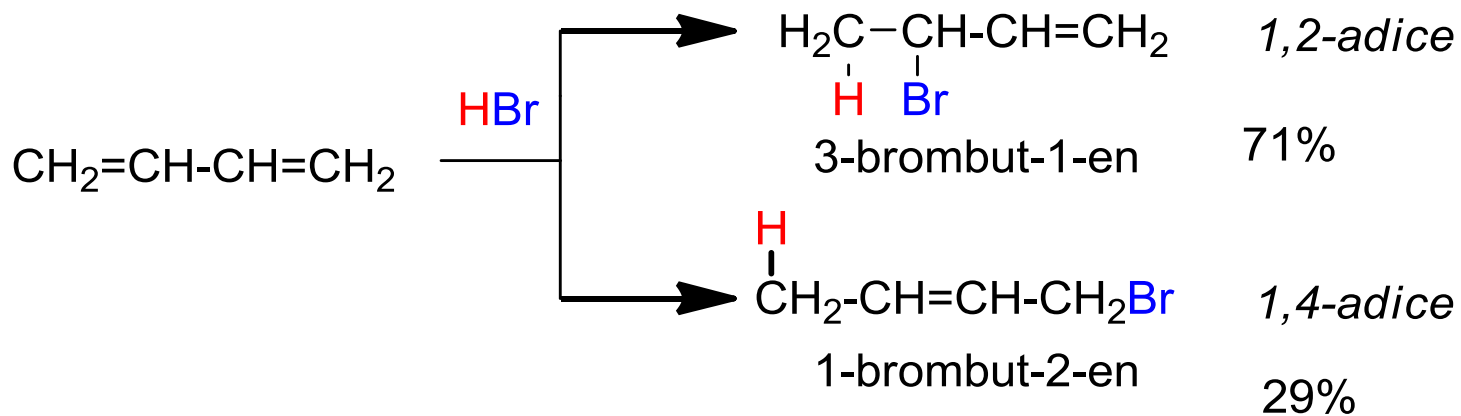
Addition of Trifluoroacetic Acid to 3-Methyl-1-butene



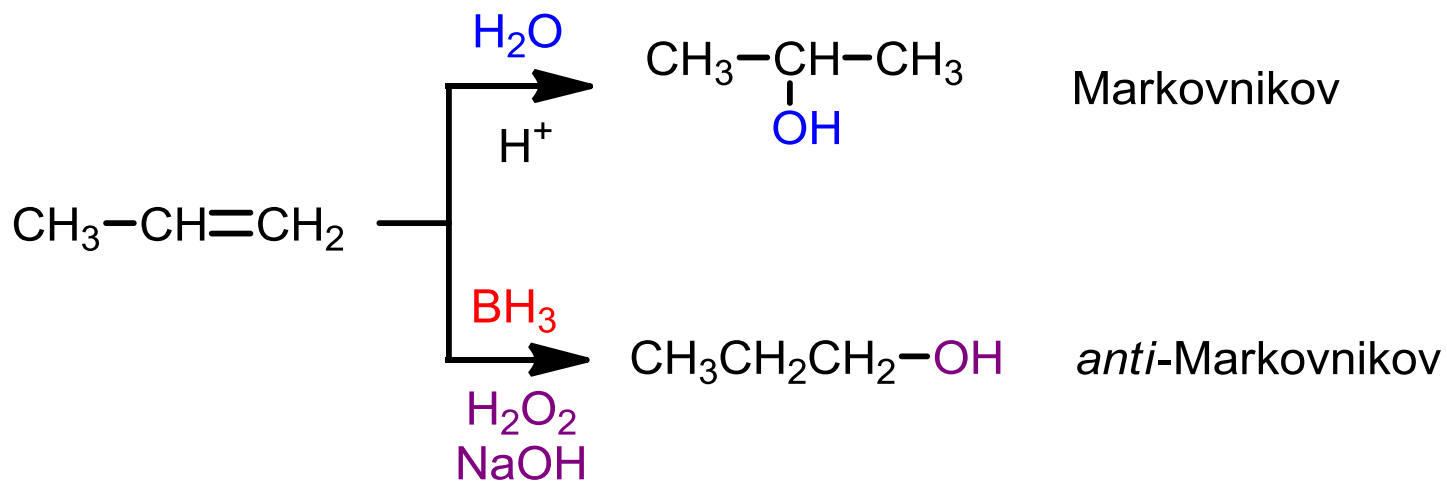
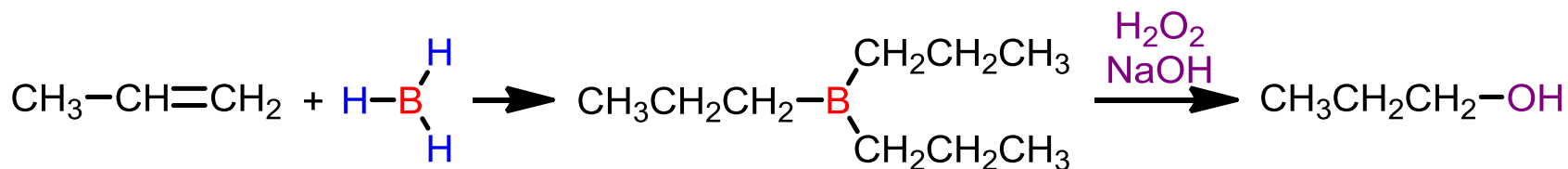
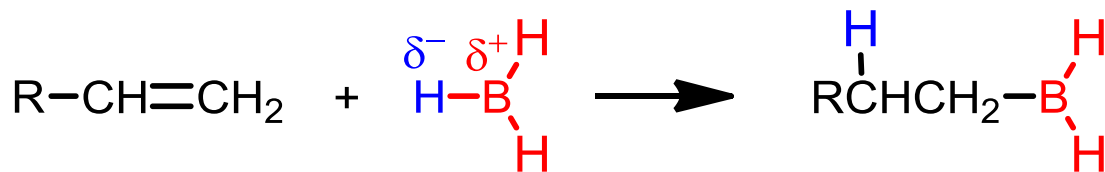
Přesmyk karbokationtu

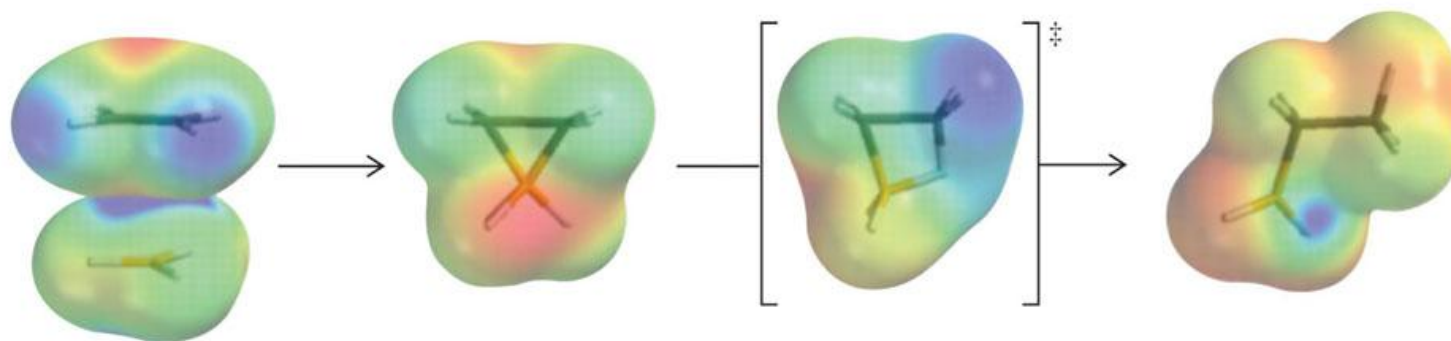
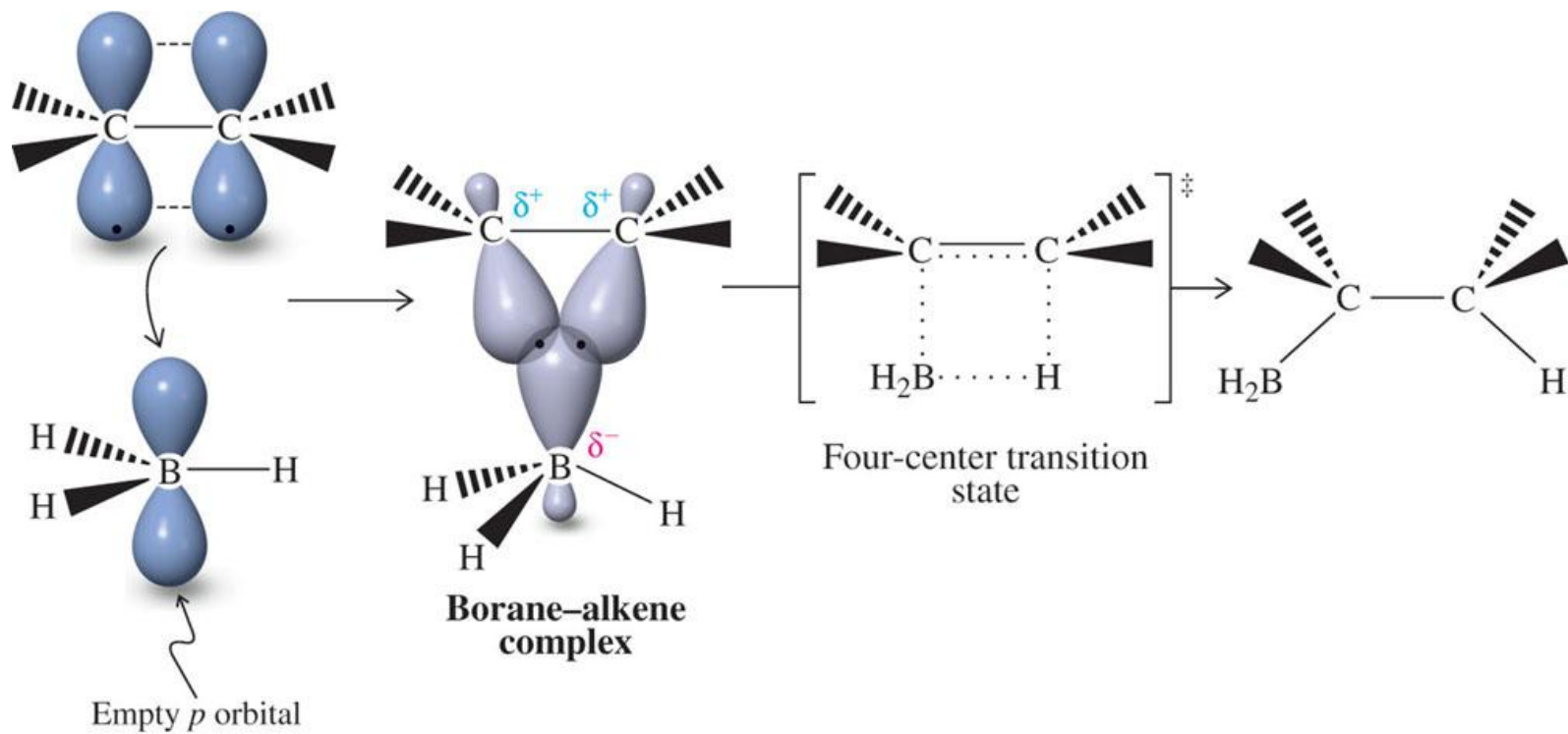


Adice na konjugované dieny



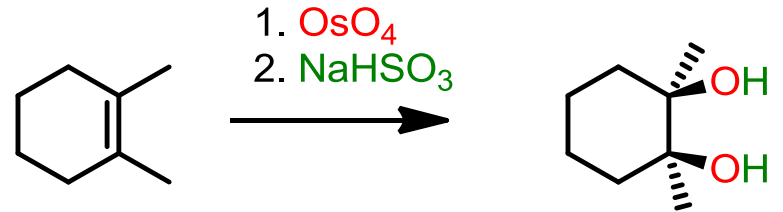
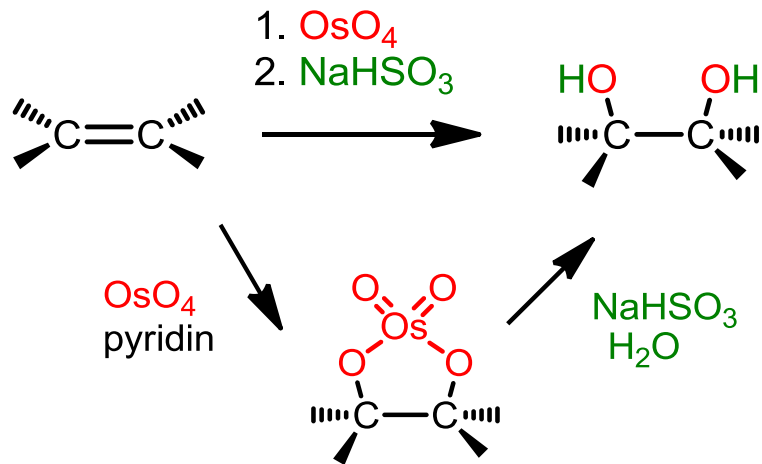
Hydroborace alkenů



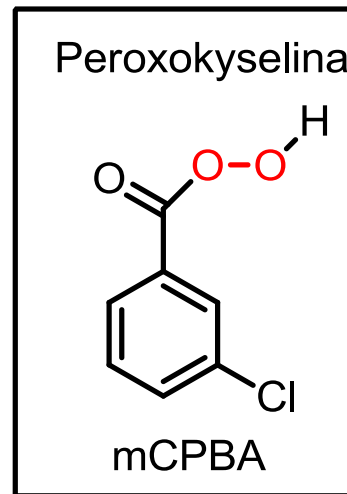
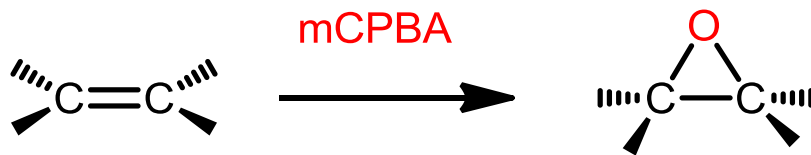


Oxidační transformace alkenů

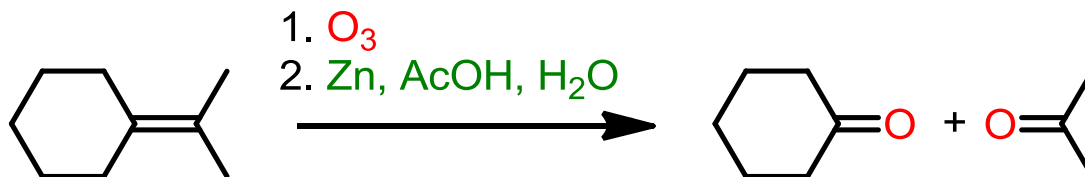
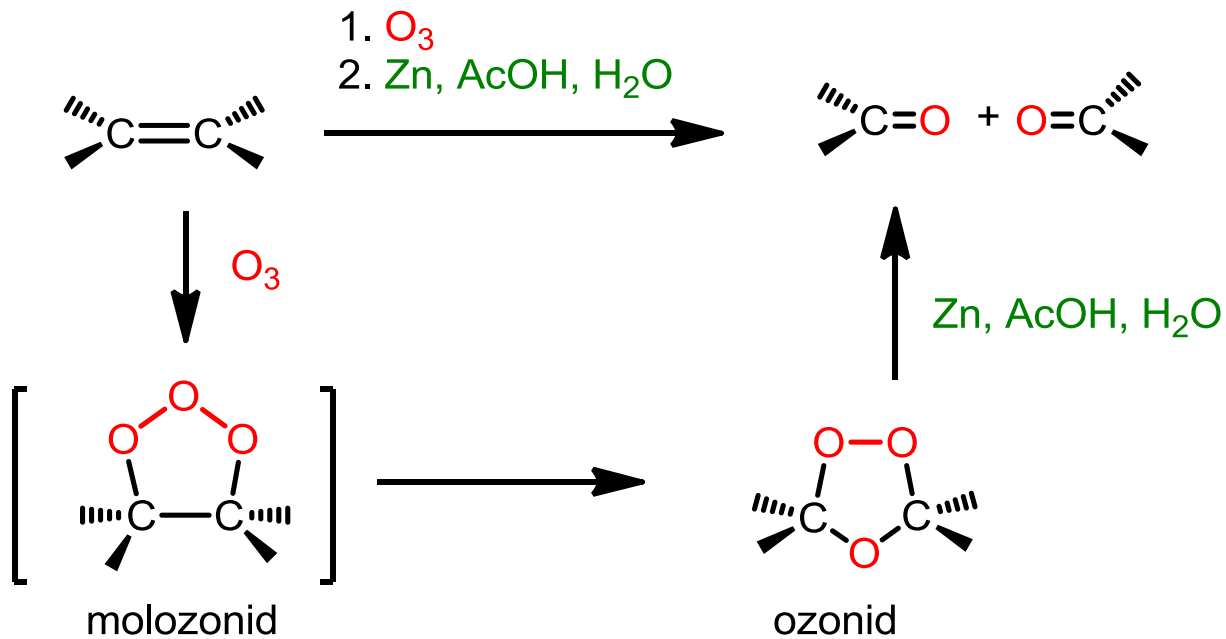
Dihydroxylace



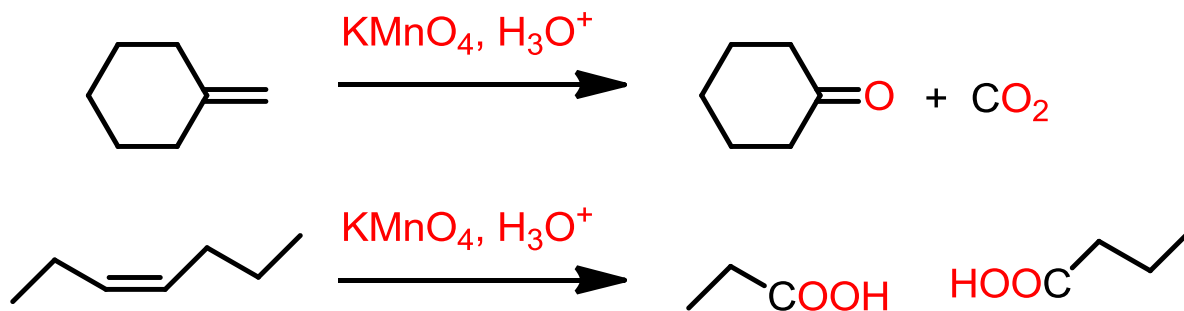
Epoxidace



Ozonizace

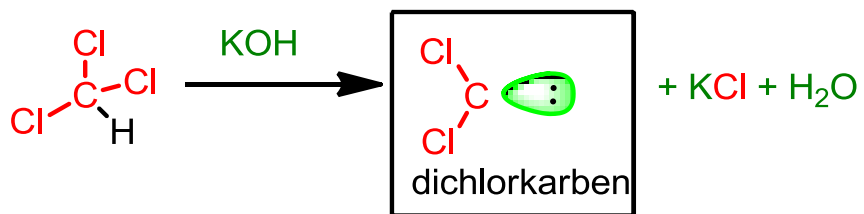
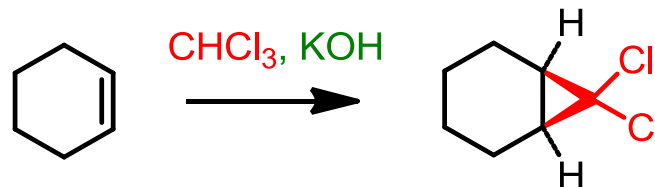
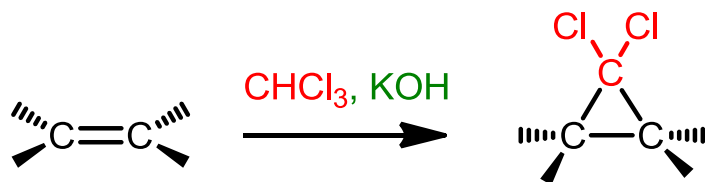


Oxidativní štěpení

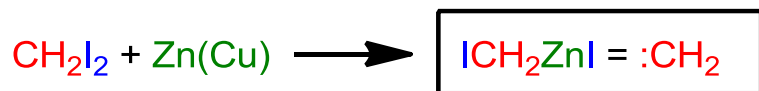
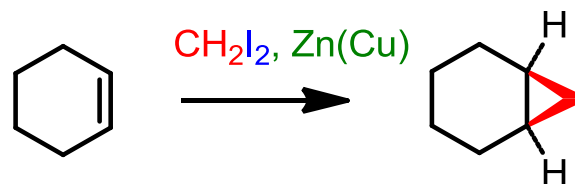
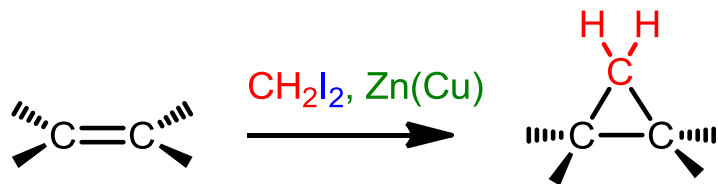


Cyklopropanace

Adice karbenu



Simmons-Smithova reakce



Příprava alkenů - eliminace

