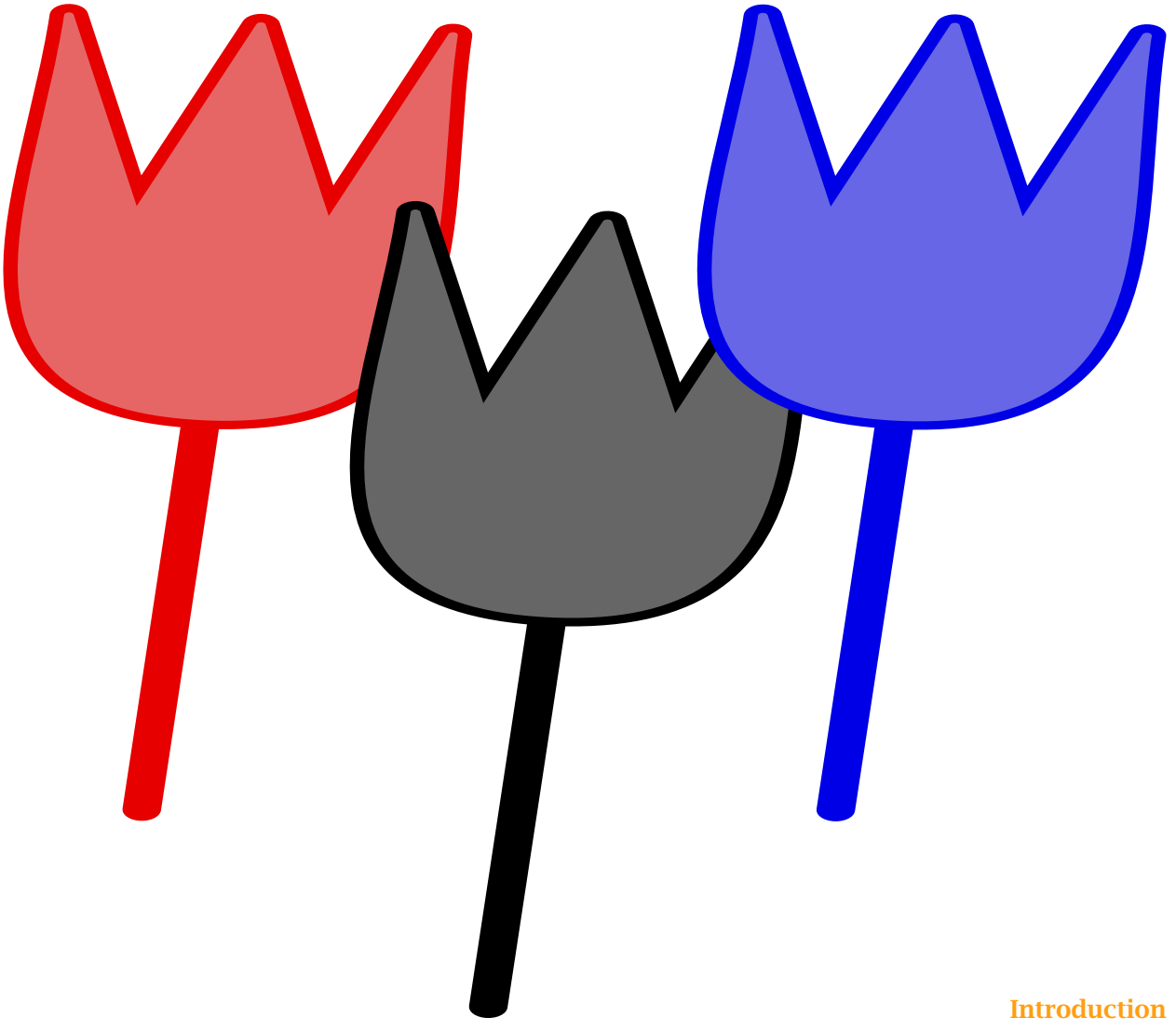
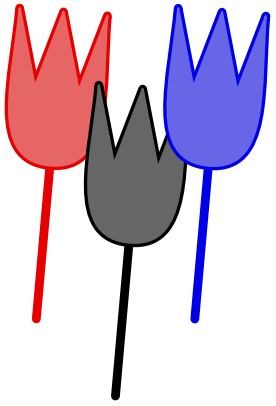
ConTeXt
up-to-date
1998/2

ppchTeX examples



Pragma ADE
Ridderstraat 27
8061GH Hasselt NL



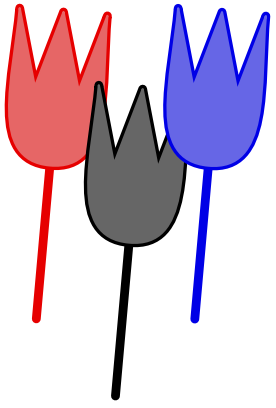
Introduction

This second issue of ConTEXt up–to–date is dedicated to PPCHTEX. Most of the chemical examples presented here originate from a range of learning materials that PRAGMA ADE developed and typeset through a number of years. The last few years, examples were donated by Tobias Burnus, Dirk Kuipers et.al. and we offer our thanks to their contribution. Special thanks goes to Richard Müller, who provided some DNA/RNA components. In all we think that the novice user of PPCHTEX will find this document a useful tool to become more acquainted with PPCHTEX.

We have tried to categorize and index the structures and equations, but in the end it seemed best to let the reader leave through these pages until a structure or an equation comes up that looks (somewhat) simular to the one he wants to typeset. Keep in mind that many examples come from educational documents and therefore are not always correct due to the purpose they serve.

This file is generated by pdfTEX, using CONTEXT and PPCHTEX in combination with PICTEX (positioning and text) and METAPOST (drawing graphics). The use of METAPOST as graphics engine permits us to think of more advanced features: suggestions are welcome.

If you can find no alternative for your structure or equation, you can contact us via the mailing list of PPCHTEX. We will come back to you as soon as possible.



$\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}\;\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}\;\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}\;\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}$

$\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}\;\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}\;\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}\;\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}$

$\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}\;\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}\;\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}\;\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}\,\overset{\oplus}{\mathrm{CH}}$

$\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}\;\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}\;\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}\;\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}\,\overset{\delta}{\mathrm{CH}}$

```
\chemical{\TL{\oplus}{CH}} \chemical{\L {\oplus}{CH}}
\chemical{\LC{\oplus}{CH}} \chemical{\BL{\oplus}{CH}}
\chemical{\TR{\oplus}{CH}} \chemical{\R {\oplus}{CH}}
\chemical{\RC{\oplus}{CH}} \chemical{\BR{\oplus}{CH}}
\chemical{\LT{\oplus}{CH}} \chemical{\T {\oplus}{CH}}
\chemical{\RT{\oplus}{CH}} \chemical{\LB{\oplus}{CH}}
\chemical{\B {\oplus}{CH}} \chemical{\RB{\oplus}{CH}}

\blank

\chemical{\TL{\delta}{CH}} \chemical{\L {\delta}{CH}}
\chemical{\LC{\delta}{CH}} \chemical{\BL{\delta}{CH}}
\chemical{\TR{\delta}{CH}} \chemical{\R {\delta}{CH}}
\chemical{\RC{\delta}{CH}} \chemical{\BR{\delta}{CH}}
\chemical{\LT{\delta}{CH}} \chemical{\T {\delta}{CH}}
\chemical{\RT{\delta}{CH}} \chemical{\LB{\delta}{CH}}
\chemical{\B {\delta}{CH}} \chemical{\RB{\delta}{CH}}

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\chemical{\X\TL{\oplus}{CH}} \chemical{\X\L {\oplus}{CH}}
\chemical{\X\LC{\oplus}{CH}} \chemical{\X\BL{\oplus}{CH}}
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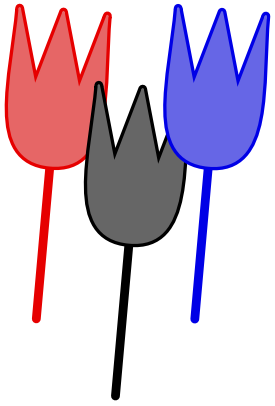
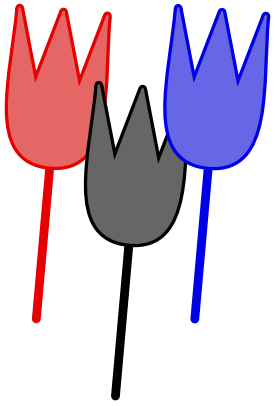
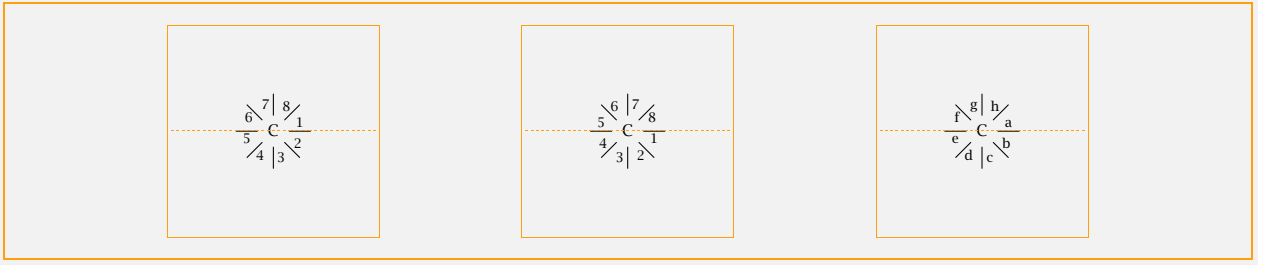


```
\chemical{\X\TR{\oplus}{CH}} \chemical{\X\R {\oplus}{CH}}
\chemical{\X\RC{\oplus}{CH}} \chemical{\X\BR{\oplus}{CH}}
\chemical{\X\LT{\oplus}{CH}} \chemical{\X\T {\oplus}{CH}}
\chemical{\X\RT{\oplus}{CH}} \chemical{\X\LB{\oplus}{CH}}
\chemical{\X\B {\oplus}{CH}} \chemical{\X\RB{\oplus}{CH}}

\blank

\chemical{\X\TL{\delta}{CH}} \chemical{\X\L {\delta}{CH}}
\chemical{\X\LC{\delta}{CH}} \chemical{\X\BL{\delta}{CH}}
\chemical{\X\TR{\delta}{CH}} \chemical{\X\R {\delta}{CH}}
\chemical{\X\RC{\delta}{CH}} \chemical{\X\BR{\delta}{CH}}
\chemical{\X\LT{\delta}{CH}} \chemical{\X\T {\delta}{CH}}
\chemical{\X\RT{\delta}{CH}} \chemical{\X\LB{\delta}{CH}}
\chemical{\X\B {\delta}{CH}} \chemical{\X\RB{\delta}{CH}}
```





```
\hbox to \hsize \bgroup \hss

\startchemical
  \chemical[ONE,SB,Z0,ZTN][C]
\stopchemical

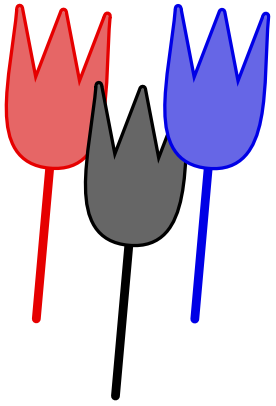
\hss

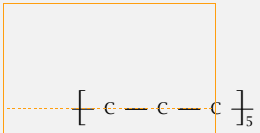
\startchemical
  \chemical[ONE,SB,Z0,ZBN][C]
\stopchemical

\hss

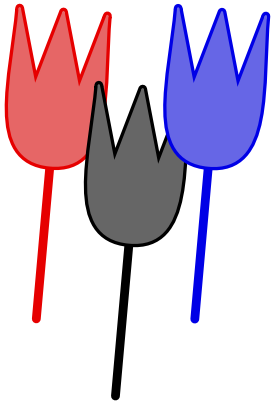
\startchemical
  \chemical[ONE,SB,Z0,ZTT][C,a,b,c,d,e,f,g,h]
\stopchemical

\hss \egroup
```





```
\startchemical
  \chemical
    [ONE,ZT5,Z0,SB15,MOV1,Z0,SB15,MOV1,SB15,Z0,ZT1]
    [\[,C,C,C,\]{5}]
\stopchemical
```



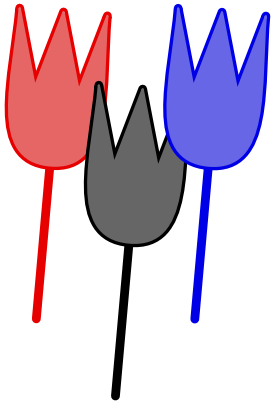
```
\hbox to \hsize \bgroup \hss

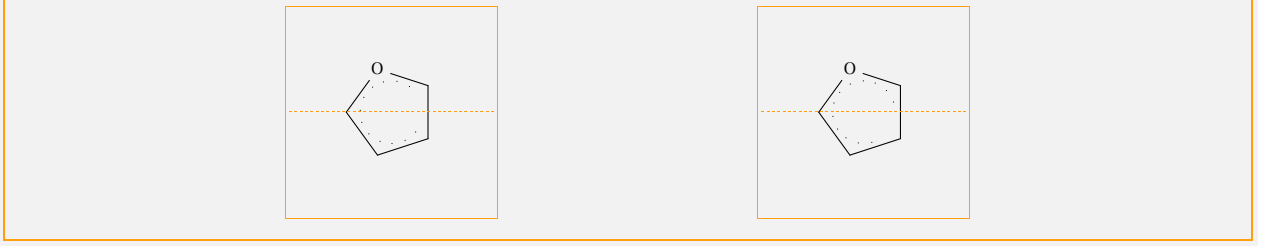
\startchemical
  \chemical
    [SIX,B1234,CD1..5,+SB5,-SB6,Z6,Z0]
    [\T{\ominus}{O},\oplus]
\stopchemical

\hss

\startchemical
  \chemical
    [SIX,B1234,CCD1..5,+SB5,-SB6,Z6,Z0]
    [\T{\ominus}{O},\oplus]
\stopchemical

\hss \egroup
```





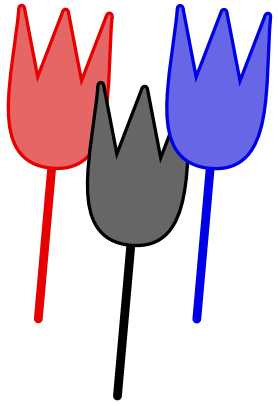
```
\hbox to \hsize \bgroup \hss

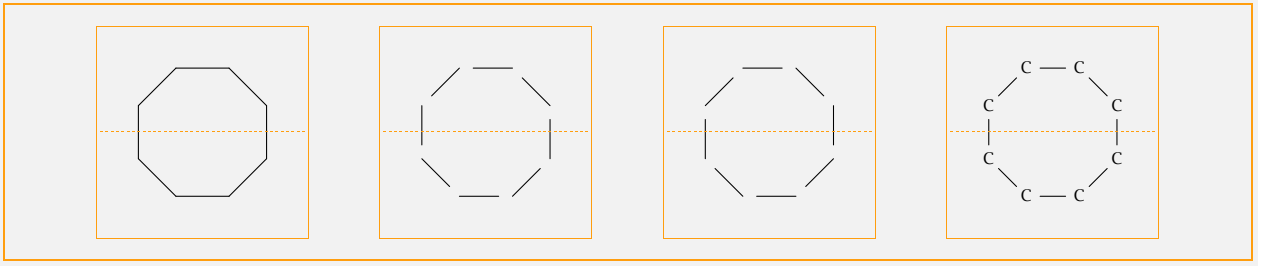
\startchemical
  \chemical[FIVE,B123,CD1235,+SB4,-SB5,Z5][O]
\stopchemical

\hss

\startchemical
  \chemical[FIVE,B123,CCD1235,+SB4,-SB5,Z5][O]
\stopchemical

\hss \egroup
```





```
\hbox to \hsize \bgroup \hss

\startchemical
  \chemical[EIGHT,B]
\stopchemical

\hss

\startchemical
  \chemical[EIGHT,-SB]
\stopchemical

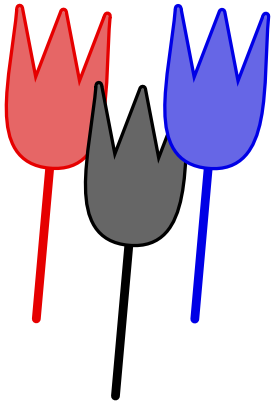
\hss

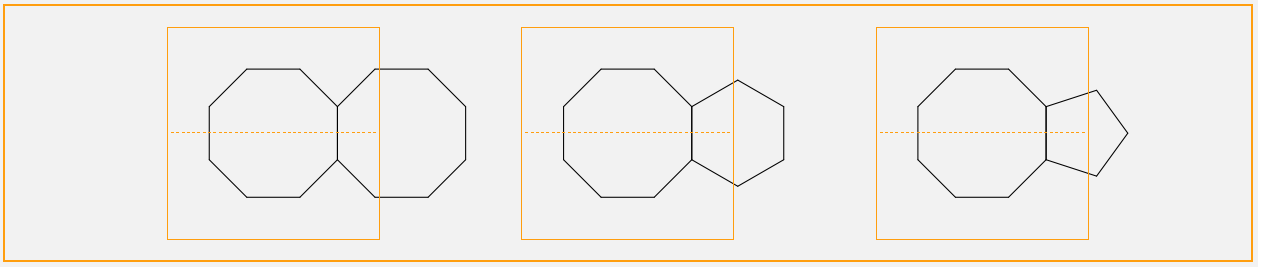
\startchemical
  \chemical[EIGHT,+SB]
\stopchemical

\hss

\startchemical
  \chemical[EIGHT,SB,Z][C,C,C,C,C,C,C,C]
\stopchemical

\hss \egroup
```





```
\hbox to \hsize \bgroup \hss

\startchemical
  \chemical[EIGHT,B,MOV1,B]
\stopchemical

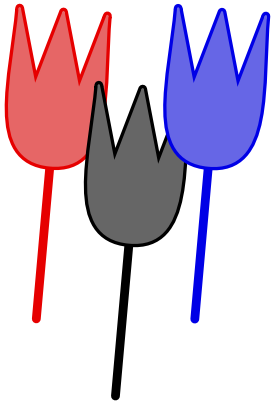
\hss

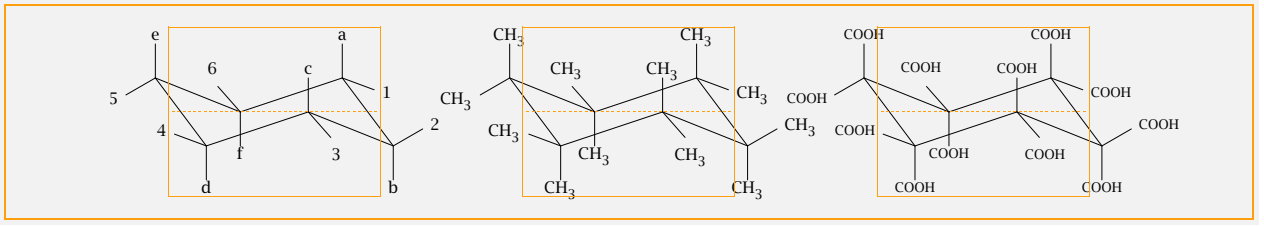
\startchemical
  \chemical[EIGHT,B,ADJ1,SIX,B]
\stopchemical

\hss

\startchemical
  \chemical[EIGHT,B,ADJ1,FIVE,ROT3,B]
\stopchemical

\hss \egroup
```






```
\setupchemical
  [width=5000]

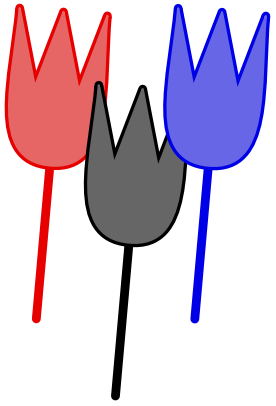
\hbox to \hsize \bgroup \hss

\startchemical[scale=small]
  \chemical
    [CHAIR,B,+R,-R,
     +RZ1,+RZ2,+RZ3,+RZ4,+RZ5,+RZ6,
     -RZ1,-RZ2,-RZ3,-RZ4,-RZ5,-RZ6]
    [a,b,c,d,e,f,1,2,3,4,5,6]
\stopchemical

\hss

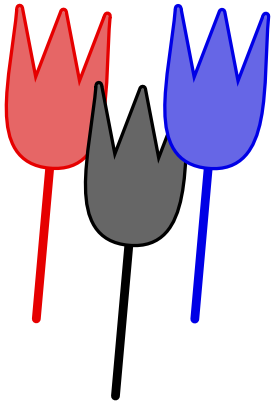
\startchemical[scale=small]
  \chemical
    [CHAIR,B,+R,-R,
     +RZ1,+RZ2,+RZ3,+RZ4,+RZ5,+RZ6,
     -RZ1,-RZ2,-RZ3,-RZ4,-RZ5,-RZ6]
    [CH_3,CH_3,CH_3,CH_3,CH_3,CH_3,CH_3,CH_3,CH_3,CH_3,CH_3,CH_3]
\stopchemical

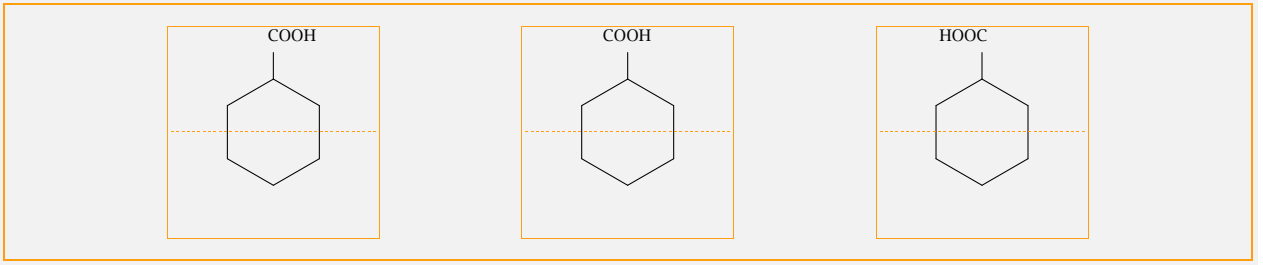
\hss
```



```
\startchemical[scale=small,size=small]
  \chemical
    [CHAIR,B,+R,-R,
     +RZ1,+RZ2,+RZ3,+RZ4,+RZ5,+RZ6,
     -RZ1,-RZ2,-RZ3,-RZ4,-RZ5,-RZ6]
    [COOH,COOH,COOH,COOH,COOH,COOH,
     COOH,COOH,COOH,COOH,COOH,COOH]
\stopchemical

\hss \egroup
```






```
\hbox to \hsize \bgroup \hss

\startchemical
  \chemical[SIX,B,R6,RZ6][\SL{COOH}]
\stopchemical

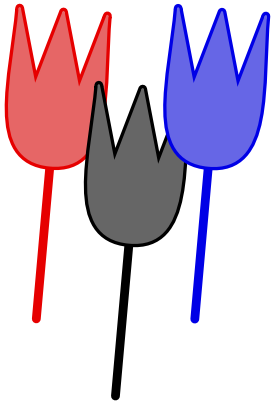
\hss

\startchemical
  \chemical[SIX,B,R6,RZ6][\SM{COOH}]
\stopchemical

\hss

\startchemical
  \chemical[SIX,B,R6,RZ6][\SR{HOOC}]
\stopchemical

\hss \egroup
```



$$\mathrm{S + O_2 \xrightarrow[\Delta T/H_2O]{} \overset{+IV\ -II}{S\,O_2}}$$

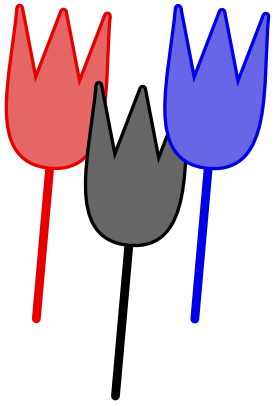
$$\mathrm{\overset{\delta}{C} + \underset{\delta}{C} + {}_{\delta}C + C_{\delta}}$$

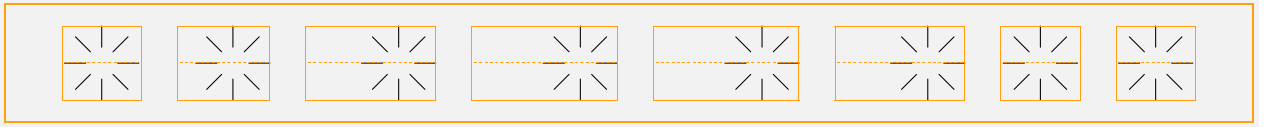
$$\mathrm{\overset{\oplus}{C} + \underset{\oplus}{C} + {}_{\oplus}C + C_{\oplus}}$$

```
\startformula
  \chemical{S}+\chemical{O_2}
  \chemical{GIVES}{\Delta T / H_2O}
  \chemical{\+{4}{S}\-{2}{O_2}}
\stopformula

\startformula
  \chemical{\T\delta{C}} +
  \chemical{\B\delta{C}} +
  \chemical{\L\delta{C}} +
  \chemical{\R\delta{C}}
\stopformula

\startformula
  \chemical{\T\oplus{C}} +
  \chemical{\B\oplus{C}} +
  \chemical{\L\oplus{C}} +
  \chemical{\R\oplus{C}}
\stopformula
```



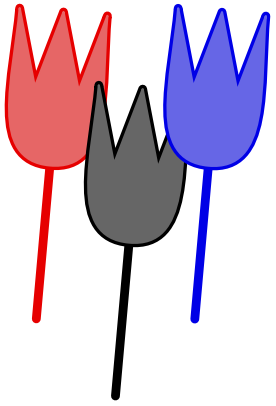


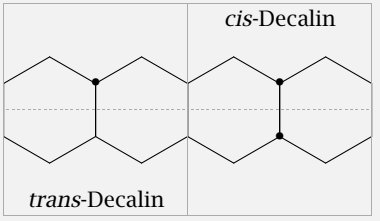
```
\setupchemical
  [height=fit,width=1500]

\hbox to \hsize \bgroup                                          \hss

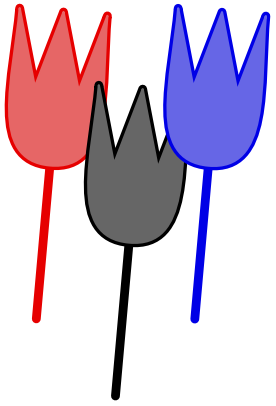
\startchemical \chemical[ONE,SB]                  \stopchemical \hss
\startchemical \chemical[ONE,3OFF1,SB]            \stopchemical \hss
\startchemical \chemical[ONE,MOV1,SB]             \stopchemical \hss
\startchemical \chemical[ONE,3OFF1,MOV1,SB]       \stopchemical \hss
\startchemical \chemical[ONE,MOV1,3OFF1,SB]       \stopchemical \hss
\startchemical \chemical[ONE,MOV1,3OFF1,OFF0,SB] \stopchemical \hss
\startchemical \chemical[ONE,MOV1,3OFF1,MOV0,SB] \stopchemical \hss
\startchemical \chemical[ONE,MOV1,MOV0,SB]        \stopchemical \hss

               \egroup
```






```
\startformula
  \startchemical[width=fit]
    \chemical[SIX,B,Z1,MOV1,B][\hbox{$\bullet$}]
    \bottext{{\sl trans}-Decalin}
  \stopchemical
  \startchemical[width=fit]
    \chemical[SIX,B,Z12,MOV1,B][\hbox{$\bullet$},\hbox{$\bullet$}]
    \toptext{{\sl cis}-Decalin}
  \stopchemical
\stopformula
```



In display mode:

$$K_b = \frac{[H_3O^+][OH^-]}{[H_2O]}$$

In text mode: $K_b=\frac{[H_3O^+][OH^-]}{[H_2O]}$

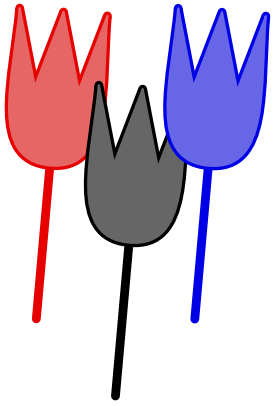
With adjusted brackets: $K_b=\frac{\left[H_3O^+\right]\left[OH^-\right]}{\left[H_2O\right]}$

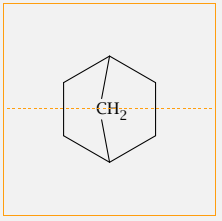
```
In display mode:

\startformula
K_b = {{[\chemical{H_3O^+}] [\chemical{OH^-}]}\over{[\chemical{H_2O}]}}
\stopformula

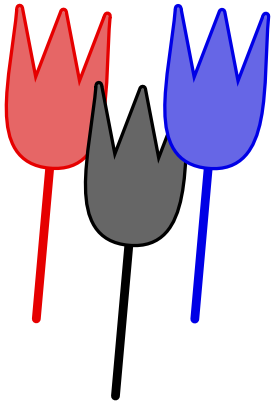
In text mode: $K_b = {[\chemical {H_3O^+}] [\chemical {OH^-}]} \over
{[\chemical {H_2O}]}$

With adjusted brackets: $K_b = {\big[ \chemical {H_3O^+}\big] \big[ \chemical
{OH^-}\big]} \over {\big[ \chemical {H_2O}\big]}$
```






```
\startchemical
  \chemical[SIX,B,MID,MIDZ][\SL{CH_2}]
\stopchemical
```

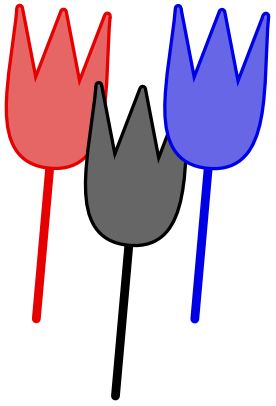


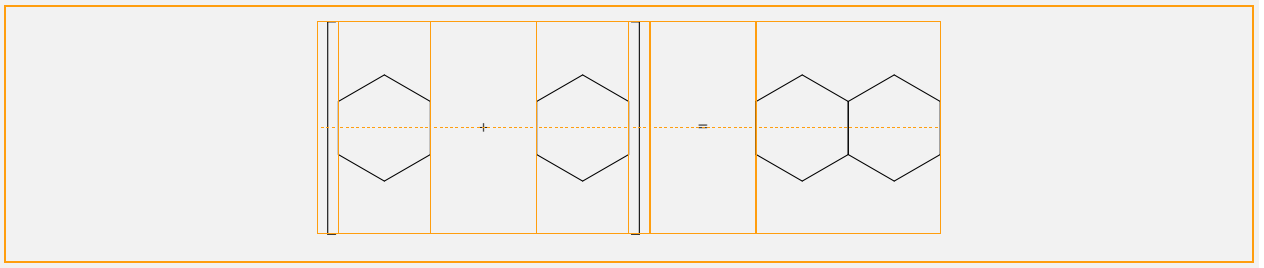
H_2O or H_2O when typeset in display mode becomes:

$$\overset{\text{liquid}}{H_2O}\ \text{or}\ \underset{\text{water}}{H_2O}$$

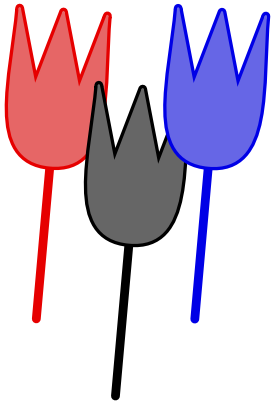
```
\chemical{H_2O}{liquid}{water} or $\chemical{H_2O}{liquid}{water}$ when
typeset in display mode becomes:

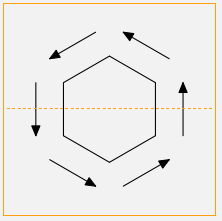
\startformula
\chemical{H_2O}{liquid}{water} \hbox{or} \chemical{H_2O}{water}
\stopformula
```

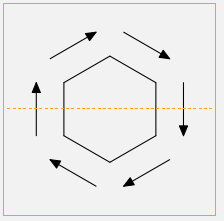




```
\startformula
  \startchemical[width=fit]  \chemical[OPENCOMPLEX]  \stopchemical
  \startchemical[width=fit]  \chemical[SIX,B]        \stopchemical
  \startchemical[width=2000] \chemical[PLUS]         \stopchemical
  \startchemical[width=fit]  \chemical[SIX,B]        \stopchemical
  \startchemical[width=fit]  \chemical[CLOSECOMPLEX] \stopchemical
  \startchemical[width=2000] \chemical[EQUAL]        \stopchemical
  \startchemical[width=fit]  \chemical[SIX,B,MOV1,B] \stopchemical
\stopformula
```







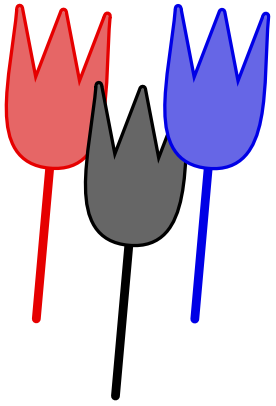
```
\hbox to \hsize \bgroup \hss

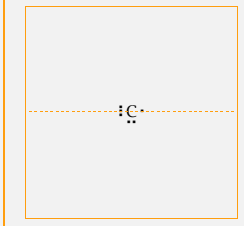
\startchemical
  \chemical[SIX,B,AU]
\stopchemical

\hss

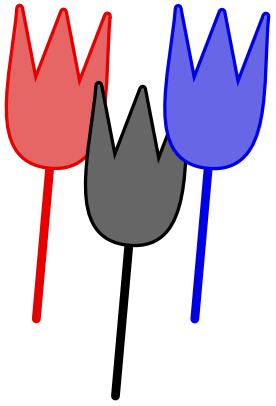
\startchemical
  \chemical[SIX,B,AD]
\stopchemical

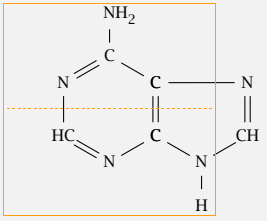
\hss \egroup
```



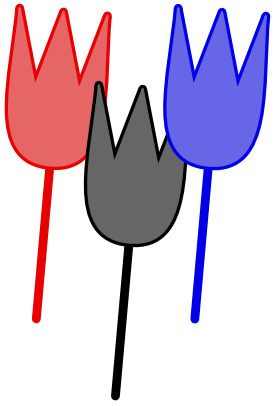


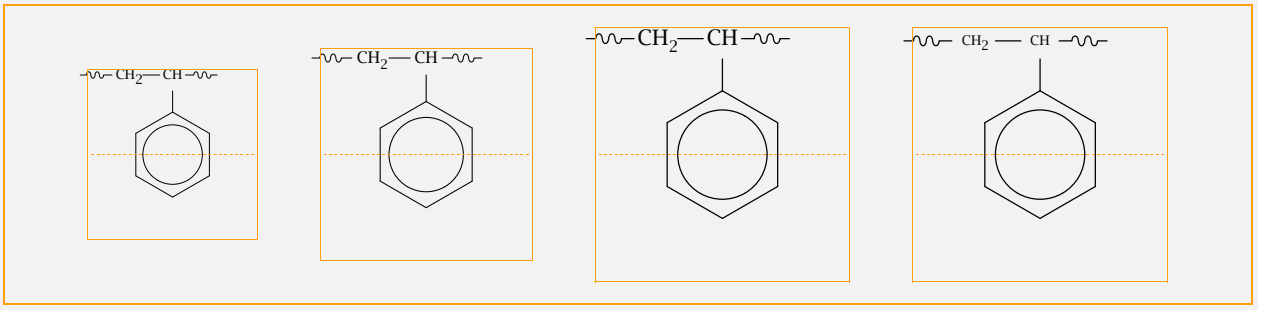
```
\startchemical
  \chemical[ONE,ZO,ES1,ED3,ET5][C]
\stopchemical
```



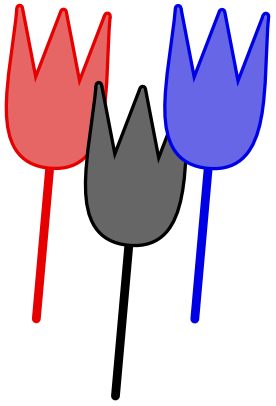



```
\startchemical
  \chemical[SIX,DB135,SB246,Z,SR6,RZ6][C,C,N,HC,N,C,NH_2]
  \chemical[SIX,MOV1,DB1,SB23,SS6,Z1..5,SR3,RZ3][N,CH,N,C,C,H]
\stopchemical
```

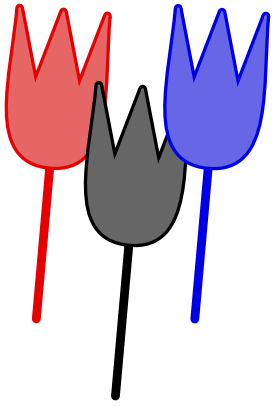


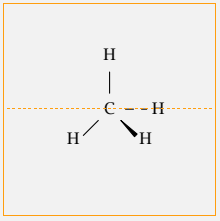


```
\hbox to \hsize \bgroup \hss
\startchemical[scale=small,size=small]
  \chemical[SIX,B,C,R6,PB:RZ6,ONE,CZ0,OE1,SB5,MOV5,CZ0,OFF5,OE5,PE][CH,CH_2]
\stopchemical
\hss
\startchemical[scale=medium,size=medium]
  \chemical[SIX,B,C,R6,PB:RZ6,ONE,CZ0,OE1,SB5,MOV5,CZ0,OFF5,OE5,PE][CH,CH_2]
\stopchemical
\hss
\startchemical[scale=big,size=big]
  \chemical[SIX,B,C,R6,PB:RZ6,ONE,CZ0,OE1,SB5,MOV5,CZ0,OFF5,OE5,PE][CH,CH_2]
\stopchemical
\hss
\startchemical[scale=big,size=small]
  \chemical[SIX,B,C,R6,PB:RZ6,ONE,CZ0,OE1,SB5,MOV5,CZ0,OFF5,OE5,PE][CH,CH_2]
\stopchemical
```

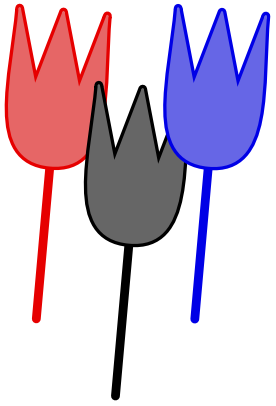


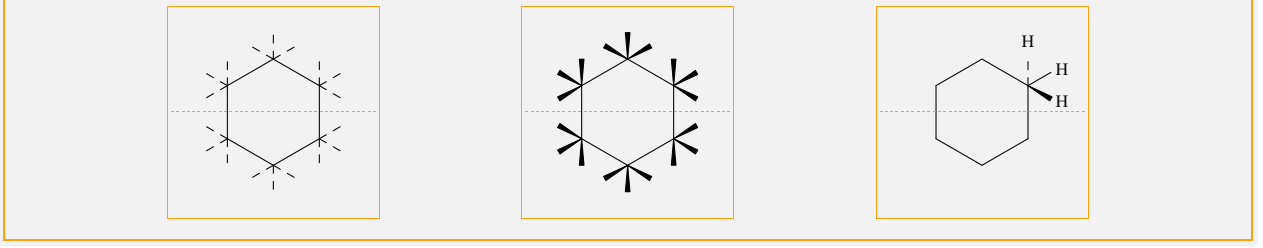
```
\hss \egroup
```






```
\startchemical
  \chemical[ONE,SD1,SB4,BB2,SB7,ZO1247][C,H,H,H,H]
\stopchemical
```






```
\hbox to \hsize \bgroup \hss

\startchemical
  \chemical[SIX,B,-RD,RD,+RD]
\stopchemical

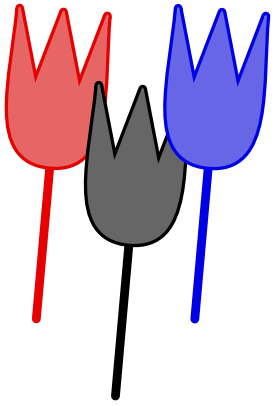
\hss

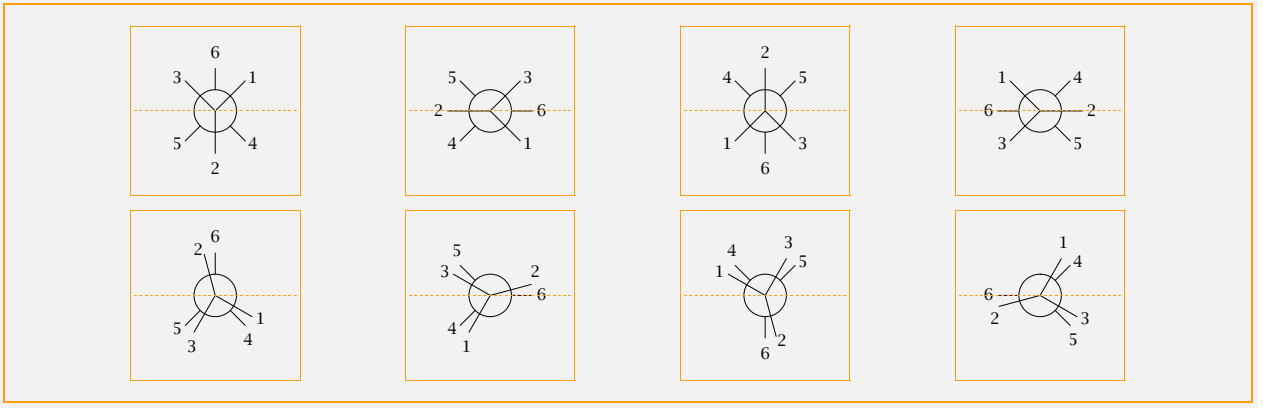
\startchemical
  \chemical[SIX,B,-RB,RB,+RB]
\stopchemical

\hss

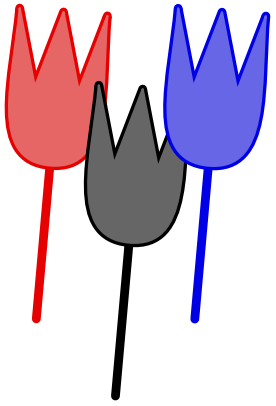
\startchemical
  \chemical[SIX,B,-RD1,R1,+RB1,-RZ1,RZ1,+RZ1][H,H,H]
\stopchemical

\hss \egroup
```






```
\setupchemical[scale=small]
\hbox to \hsize \bgroup \hss
\startchemical\chemical[NEWMAN,STAGGER,ROT1,CB][1,2,3,4,5,6]\stopchemical\hss
\startchemical\chemical[NEWMAN,STAGGER,ROT2,CB][1,2,3,4,5,6]\stopchemical\hss
\startchemical\chemical[NEWMAN,STAGGER,ROT3,CB][1,2,3,4,5,6]\stopchemical\hss
\startchemical\chemical[NEWMAN,STAGGER,ROT4,CB][1,2,3,4,5,6]\stopchemical\hss
                \egroup
\blank
\hbox to \hsize \bgroup \hss
\startchemical\chemical[NEWMAN,ECLIPSE,ROT1,CB][1,2,3,4,5,6]\stopchemical\hss
\startchemical\chemical[NEWMAN,ECLIPSE,ROT2,CB][1,2,3,4,5,6]\stopchemical\hss
\startchemical\chemical[NEWMAN,ECLIPSE,ROT3,CB][1,2,3,4,5,6]\stopchemical\hss
\startchemical\chemical[NEWMAN,ECLIPSE,ROT4,CB][1,2,3,4,5,6]\stopchemical\hss
                \egroup
```



In display mode we get:

$$A \longrightarrow B \rightleftharpoons C \longleftrightarrow D$$

or split over more commands:

$$A \longrightarrow B \rightleftharpoons C \longleftrightarrow D$$

In text mode we get $ABC \longrightarrow DEF \rightleftharpoons GHI \longleftrightarrow KLM$ but in display mode we see:

$$ABC \longrightarrow DEF \rightleftharpoons GHI \longleftrightarrow KLM$$

```
In display mode we get:

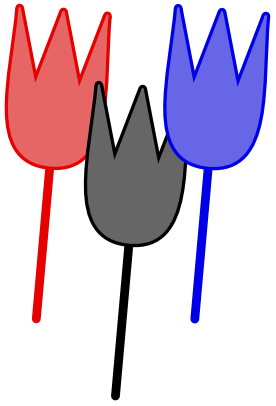
\startformula
  \chemical{A,GIVES,B,EQUILIBRIUM,C,MESOMERIC,D}
\stopformula

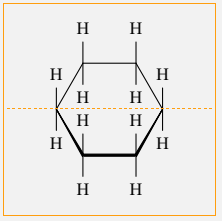
or split over more commands:

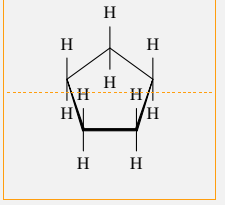
\startformula
  \chemical{A} \chemical{GIVES}
  \chemical{B} \chemical{EQUILIBRIUM}
  \chemical{C} \chemical{MESOMERIC}
  \chemical{D}
\stopformula

In text mode we get $\chemical{ABC,->,DEF,<->,GHI,<>,KLM}$ but in
display mode we see:

\startformula
  \chemical{ABC} \chemical{->}
  \chemical{DEF} \chemical{<->}
  \chemical{GHI} \chemical{<>}
  \chemical{KLM}
\stopformula
```







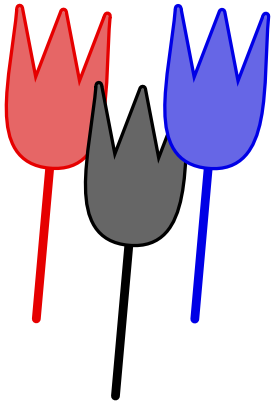
```
\hbox to \hsize \bgroup \hss

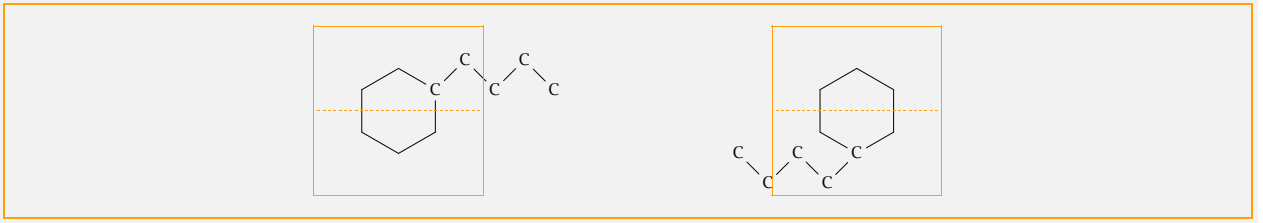
\startchemical
  \chemical
    [SIX,FRONT,B,BB612,-R,+R,-RZ,+RZ]
    [H,H,H,H,H,H,H,H,H,H,H,H]
\stopchemical

\hss

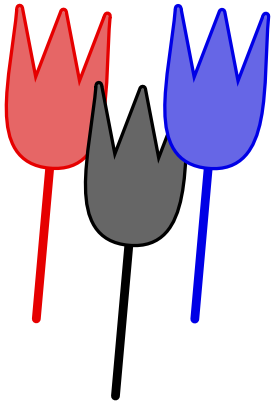
\startchemical
  \chemical
    [FIVE,FRONT,BB,-R,+R,-RZ,+RZ]
    [H,H,H,H,H,H,H,H,H,H,H,H]
\stopchemical

\hss \egroup
```



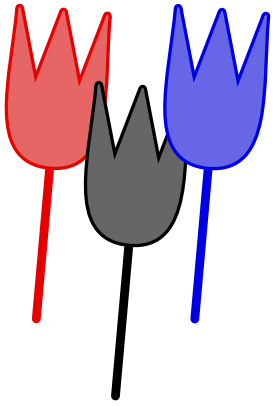


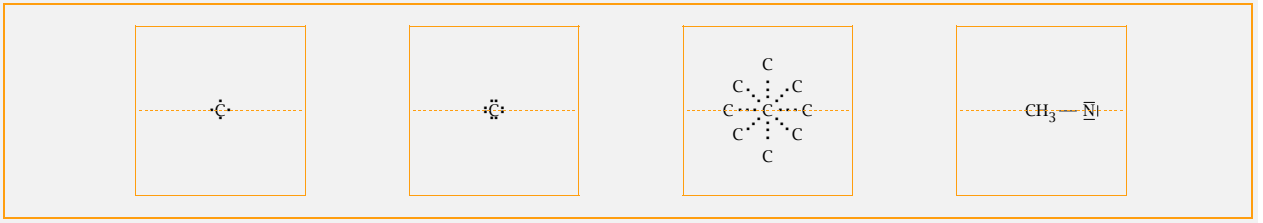
```
\hbox to \hsize \bgroup \hss
\startchemical[scale=small]
 \chemical
   [SIX,B2345,+SB6,-SB1]
   []
 \chemical
   [PB:Z1,ONE,CZO,
    SB8,DIR8,CZO,
    SB2,DIR2,CZO,
    SB8,DIR8,CZO,
    SB2,DIR2,CZO,PE]
   [C,C,C,C,C,C]
\stopchemical
\hss
\startchemical[scale=small]
  \chemical
    [SIX,B4561,+SB2,-SB3]
    []
  \chemical
    [PB:Z3,ONE,CZO,
```



```
      SB4,DIR4,CZ0,
      SB6,DIR6,CZ0,
      SB4,DIR4,CZ0,
      SB6,DIR6,CZ0,PE]
     [C,C,C,C,C,C]
\stopchemical

\hss \egroup
```





```
\hbox to \hsize \bgroup \hss

\setupchemical
  [scale=small]

\startchemical
  \chemical[ONE,Z0,ES1357][C]
\stopchemical

\hss

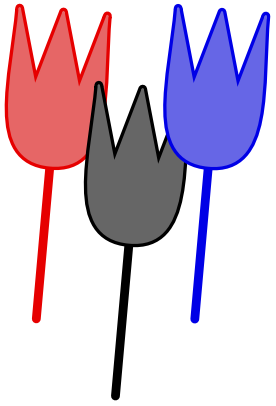
\startchemical
  \chemical[ONE,Z0,ED1357][C]
\stopchemical

\hss

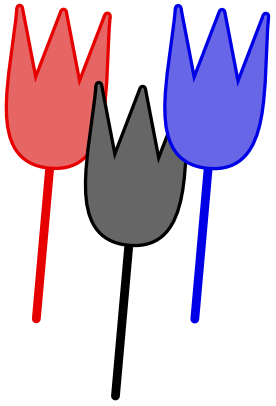
\startchemical
  \chemical[ONE,Z0,HB,Z][C,C,C,C,C,C,C,C,C]
\stopchemical

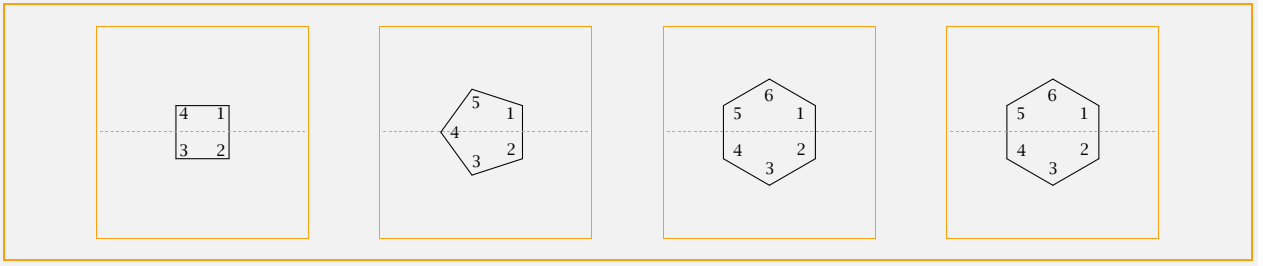
\hss

\startchemical
  \chemical[ONE,Z0,OFF1,SB1,MOV1,Z0,EP137][CH_3,N]
\stopchemical
```

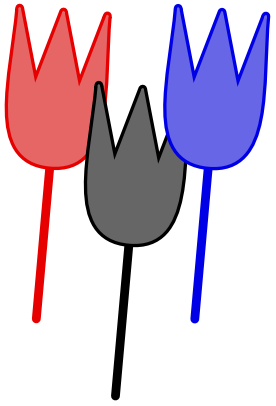


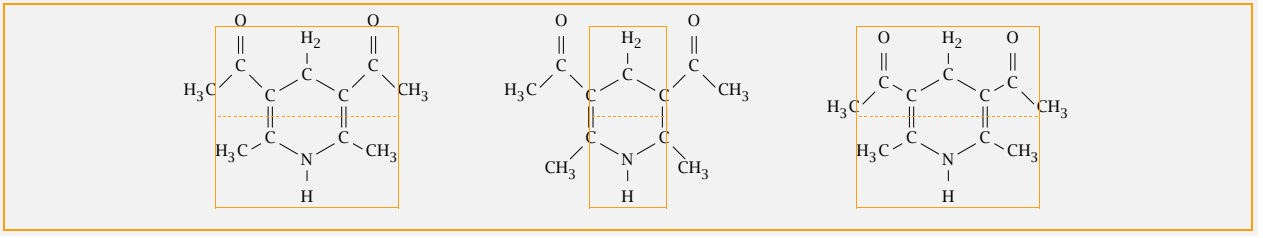
```
\hss \egroup
```



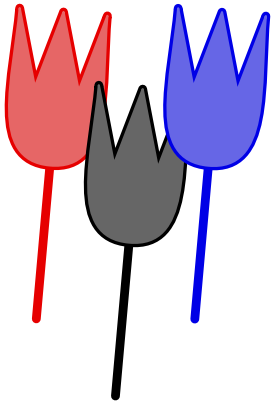



```
\hbox to \hsize \bgroup \hss
\startchemical\chemical[FOUR,B,ZN][C,C,C,C,C,C]\stopchemical \hss
\startchemical\chemical[FIVE,B,ZN][C,C,C,C,C,C]\stopchemical \hss
\startchemical\chemical[SIX,B,ZN] [C,C,C,C,C,C]\stopchemical \hss
\startchemical\chemical[SIX,B,ZT] [1,2,3,4,5,6]\stopchemical \hss
                \egroup
```





```
\hbox to \hsize \bgroup \hss
\startchemical[scale=small,width=fit,height=fit]
  \chemical
    [SIX,SB2356,DB14,Z2346,SR36,RZ36][C,N,C,C,H,H_2]
  \chemical
    [PB:Z1,ONE,Z0,DIR8,Z0,SB24,DB7,Z27,PE][C,C,CH_3,O]
  \chemical
    [PB:Z5,ONE,Z0,DIR6,Z0,SB24,DB7,Z47,PE][C,C,H_3C,O]
  \chemical
    [SR24,RZ24][CH_3,H_3C]
\stopchemical
\hss
\startchemical[scale=small,width=fit,height=fit]
  \chemical
    [SIX,SB2356,DB14,Z36,SR36,RZ36][N,C,H,H_2]
  \chemical
    [PB:Z1,ONE,Z0,DIR8,Z0,SB24,DB7,Z27,PE][C,C,CH_3,O]
  \chemical
    [PB:Z5,ONE,Z0,DIR6,Z0,SB24,DB7,Z47,PE][C,C,H_3C,O]
```

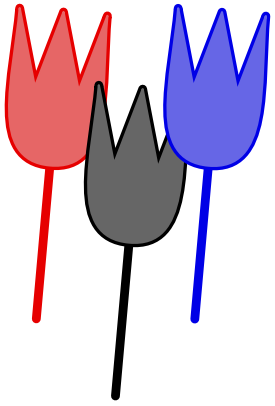


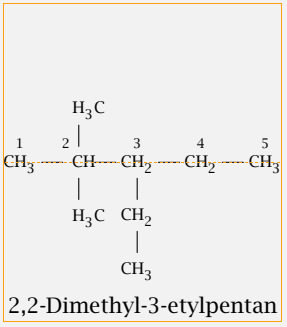
```
  \chemical
    [PB:Z2,ONE,Z0,DIR2,SB6,CZ0,PE][C,CH_3]
  \chemical
    [PB:Z4,ONE,Z0,DIR4,SB8,CZ0,PE][C,CH_3]
\stopchemical

\hss

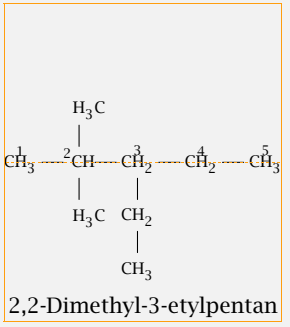
\startchemical[scale=small,width=fit,height=fit]
  \chemical
    [SIX,SB2356,DB14,Z,SR36,RZ36,SR1245,RZ24][C,C,N,C,C,C,H,H_2,CH_3,H_3C]
  \chemical
    [PB:RZ1,ONE,Z0,SB2,DB7,Z27,PE][C,CH_3,O]
  \chemical
    [PB:RZ5,ONE,Z0,SB4,DB7,Z47,PE][C,H_3C,O]
\stopchemical

\hss \egroup
```



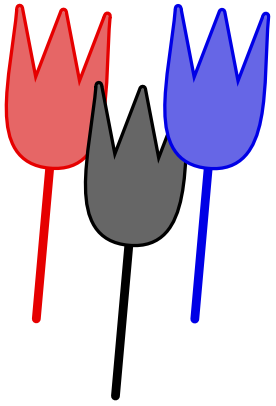


2,2-Dimethyl-3-etylpentan



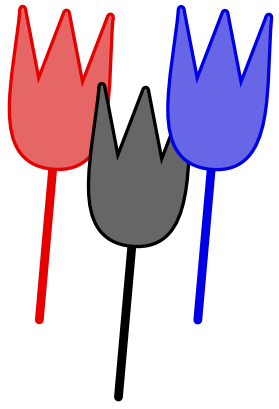
2,2-Dimethyl-3-etylpentan

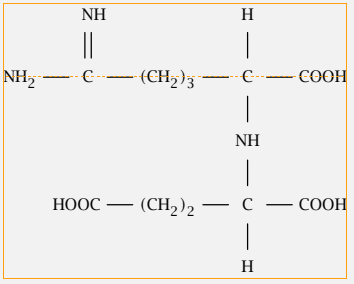
```
\hbox to \hsize \bgroup \hss
\startchemical[height=6000,width=fit]
  \bottext{2,2-Dimethyl-3-etylpentan}
  \chemical
    [ONE,Z3570,SB1357]                    [H_3C,\T{1}{CH_3},H_3C,\TL{2}{CH}]
  \chemical
    [MOV1,OFF1,Z0,SB3]                    [\T{3}{CH_2}]
  \chemical
    [MOV3,Z0,SB3,MOV3,Z0,MOV7,MOV7]       [CH_2,CH_3]
  \chemical
    [OFF1,SB1,MOV1,OFF1,Z0,2OFF1,SB1,Z1] [\T{4}{CH_2},\T{5}{CH_3}]
\stopchemical
\hss
\startchemical[height=6000,width=fit]
  \bottext{2,2-Dimethyl-3-etylpentan}
  \chemical[ONE,Z3570,SB1357]                  [H_3C,\X\T{1}{CH_3},H_3C,\X\TL{2
```



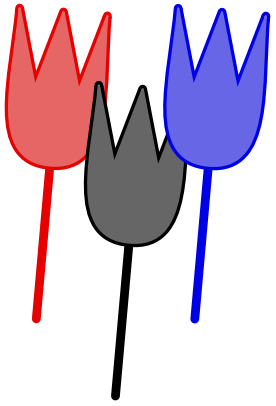
```
  \chemical[MOV1,OFF1,Z0,SB3]                    [\X\T{3}{CH_2}]
  \chemical[MOV3,Z0,SB3,MOV3,Z0,MOV7,MOV7]       [CH_2,CH_3]
  \chemical[OFF1,SB1,MOV1,OFF1,Z0,2OFF1,SB1,Z1] [\X\T{4}{CH_2},\X\T{5}{CH_3}]
\stopchemical

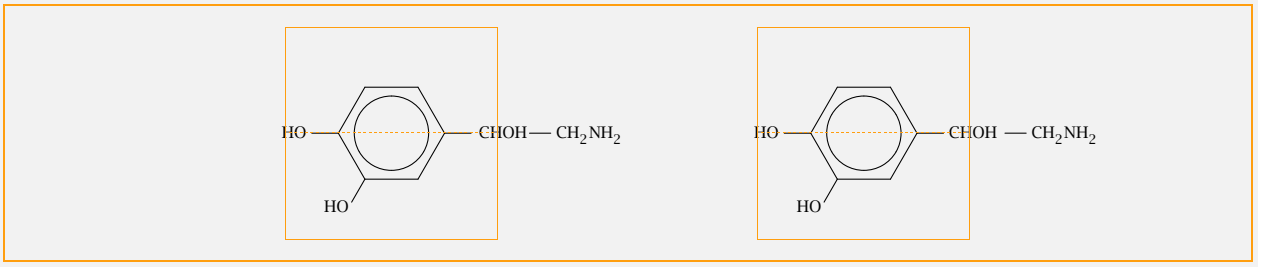
\hss \egroup
```






```
\startchemical[width=fit,height=fit,scale=big]
  \chemical
    [ONE,SB15,DB7,Z057,3OFF1,
     MOV1,Z0,3OFF1,
     MOV1,Z017,SB1357,
     MOV3,Z0,
     MOV3,SB1357,Z013,3OFF5,
     MOV5,Z0,3OFF5,SB5,Z5]
    [C,NH_2,NH,(CH_2)_3,C,COOH,H,NH,C,COOH,H,(CH_2)_2,HOOC]
\stopchemical
```





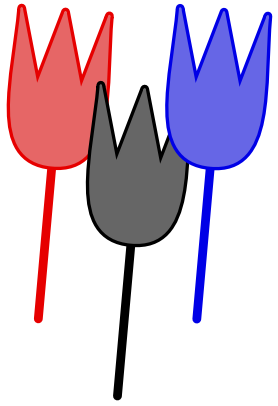

```
\hbox to \hsize \bgroup \hss

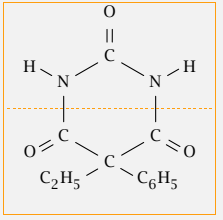
\startchemical
  \chemical
    [SIX,ROT2,B,C,R236,RZ23,SUB1,ONE,OFF1,Z0,3OFF1,SB1,Z1]
    [HO,HO,CHOH,CH_2NH_2]
\stopchemical

\hss

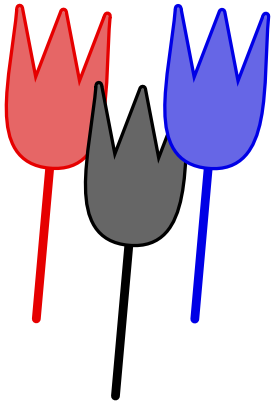
\startchemical
  \chemical
    [SIX,ROT2,B,C,R236,RZ23,PB:RZ6,ONE,Z0,3OFF1,SB1,Z1,PE]
    [HO,HO,CHOH,CH_2NH_2]
\stopchemical

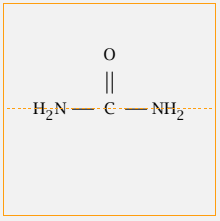
\hss \egroup
```



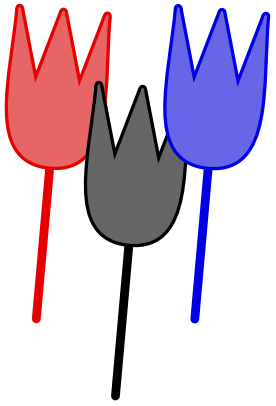


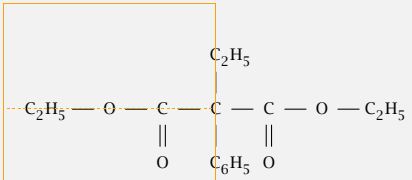
```
\startformula
  \startchemical
    \chemical
      [SIX,SB1..6,Z1..6,
       SR15,DR246,-SR3,+SR3,
       RZ12,-RZ3,+RZ3,RZ456]
      [N,C,C,C,N,C,H,O,C_6H_5,C_2H_5,O,H,O]
  \stopchemical
\stopformula
```



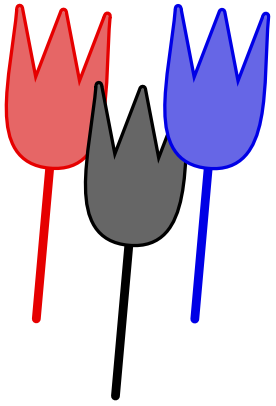


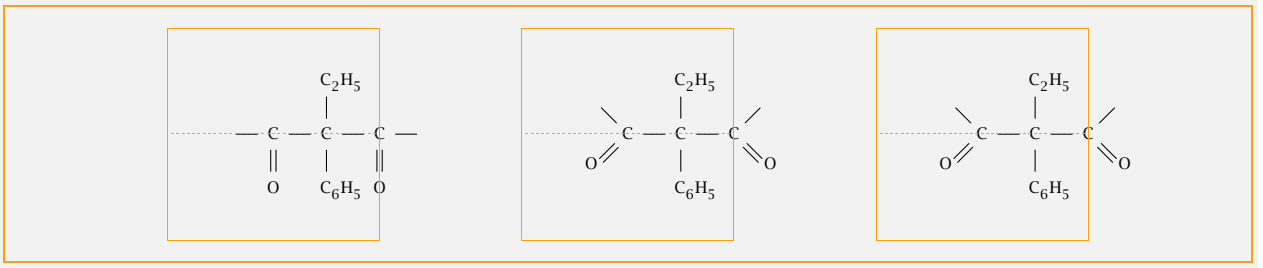

```
\startchemical
  \chemical[ONE,SB15,DB7,ZO157][C,NH_2,H_2N,O]
\stopchemical
```






```
\startchemical
  \chemical
    [ONE,Z05,SB15,
     MOV1,Z03,SB1,DB3,
     MOV1,Z037,SB137,
     MOV1,Z03,SB1,DB3,
     MOV1,Z01,SB1]
    [O,C_2H_5,C,O,C,C_6H_5,C_2H_5,C,O,O,C_2H_5]
\stopchemical
```





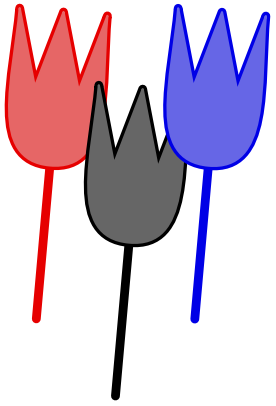

```
\hbox to \hsize \bgroup \hss

\startchemical
  \chemical
    [ONE,Z03,SB15,DB3,
     MOV1,Z037,SB137,
     MOV1,Z03,SB1,DB3]
    [C,O,C,C_6H_5,C_2H_5,C,O]
\stopchemical

\hss

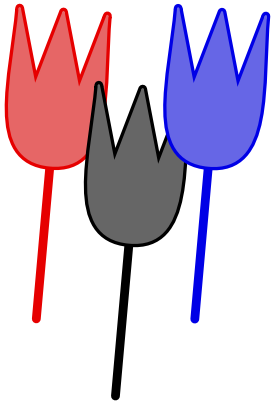
\startchemical
  \chemical
    [ONE,Z04,SB16,DB4,
     MOV1,Z037,SB137,
     MOV1,Z02,SB8,DB2]
    [C,O,C,C_6H_5,C_2H_5,C,O]
\stopchemical

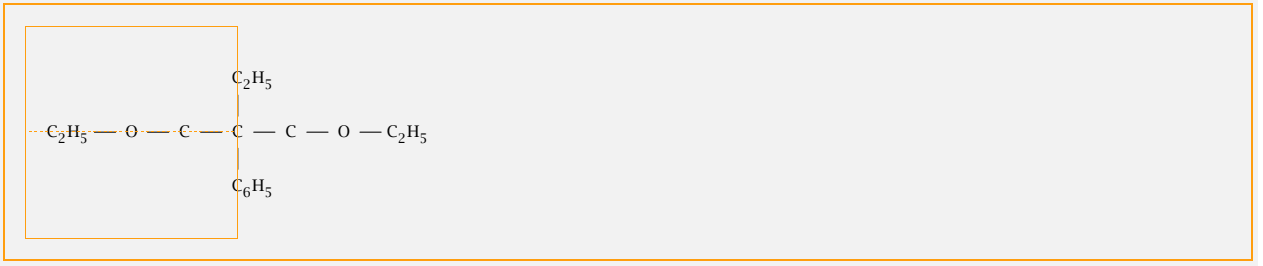
\hss
```



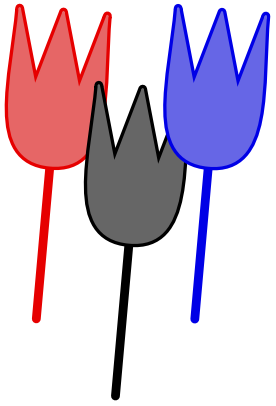
```
\startchemical
  \chemical
    [ONE,Z04,SB16,DB4,
     MOV1,Z037,SB137,
     MOV1,Z02,SB8,DB2]
    [C,O,C,C_6H_5,C_2H_5,C,O]
\stopchemical

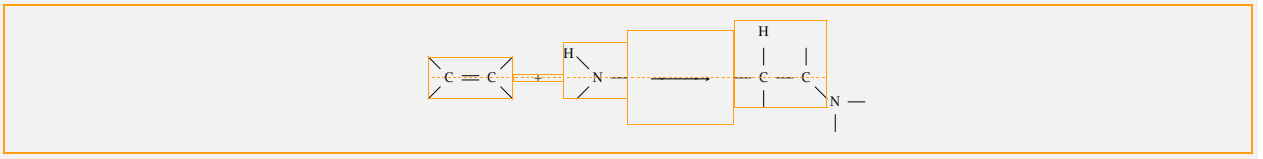
\hss \egroup
```



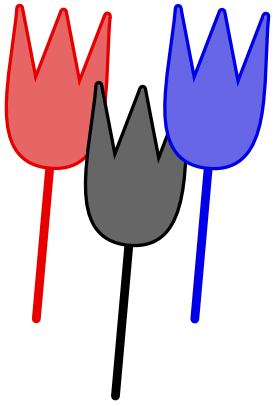


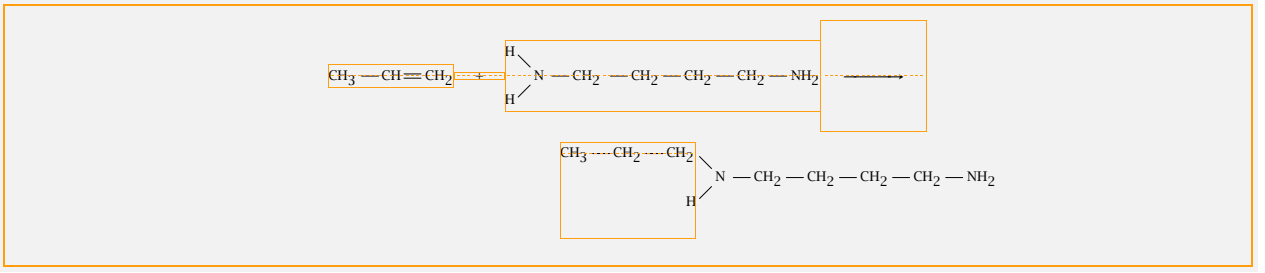

```
\startchemical
  \chemical
    [ONE,Z05,SB15,
     MOV1,Z0,SB1,
     MOV1,Z037,SB137,
     MOV1,Z0,SB1,
     MOV1,Z01,SB1]
    [O,C_2H_5,C,C,C_6H_5,C_2H_5,C,O,C_2H_5]
\stopchemical
```



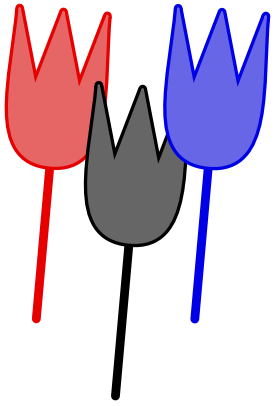


```
\startformula
  \setupchemical
    [width=fit,
     height=fit,
     scale=small,
     size=small]
  \startchemical
    \chemical[ONE,Z0,DB1,SB46,MOV1,Z0,SB28][C,C]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,Z0,SB146,Z6][N,H]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,Z07,SB1357,MOV1,Z0,SB27,PB:Z2,ONE,Z0,SB13,PE][C,H,C,N]
  \stopchemical
\stopformula
```

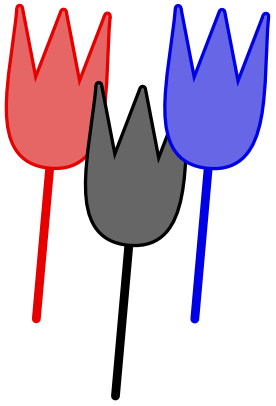


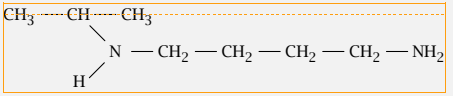



```
\setupchemical
  [width=fit,
   height=fit,
   scale=small,
   size=small]
\startformula
  \displaylines
    {\startchemical
       \chemical[ONE,Z015,DB1,SB5][CH,CH_2,CH_3]
     \stopchemical
     \startchemical
       \chemical[SPACE,PLUS,SPACE]
     \stopchemical
     \startchemical
       \chemical
         [ONE,Z046,SB146,OFF1,
          MOV1,Z0,2OFF1,SB1,
          MOV1,OFF1,Z0,2OFF1,SB1,
          MOV1,OFF1,Z0,2OFF1,SB1,
          MOV1,OFF1,Z0,2OFF1,Z1,SB1,PE]
```

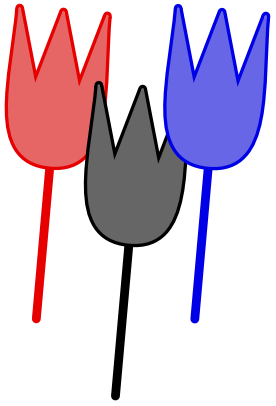


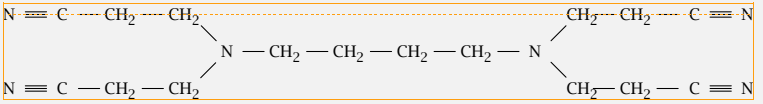
```
        [N,H,H,CH_2,CH_2,CH_2,CH_2,NH_2]
    \stopchemical
    \startchemical
      \chemical[SPACE,GIVES,SPACE]
    \stopchemical
  \cr
    \startchemical[boven=-2000]
    \chemical
      [ONE,OFF1,Z0,2OFF1,SB1,
       MOV1,OFF1,Z0,2OFF1,SB1,
       MOV1,OFF1,Z0,3OFF1,
       PB:Z2,ONE,Z04,SB146,
       MOV1,OFF1,Z0,2OFF1,SB1,
       MOV1,OFF1,Z0,2OFF1,SB1,
       MOV1,OFF1,Z0,2OFF1,SB1,
       MOV1,OFF1,Z0,2OFF1,Z1,SB1,PE]
      [CH_3,CH_2,CH_2,N,H,CH_2,CH_2,CH_2,CH_2,NH_2]
    \stopchemical
  \cr}
\stopformula
```



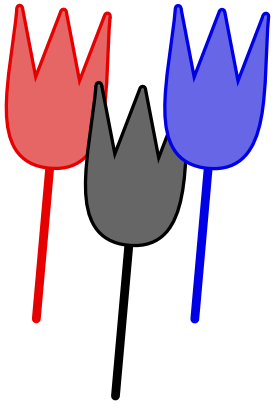



```
\setupchemical
  [width=fit,
   height=fit,
   size=medium]
\startchemical
  \chemical
    [ONE,ZO15,SB125,
     DIR2,ZO4,SB14,
     MOV1,OFF1,ZO,2OFF1,SB1,
     MOV1,OFF1,ZO,2OFF1,SB1,
     MOV1,OFF1,ZO,2OFF1,SB1,
     MOV1,OFF1,ZO,2OFF1,SB1,
     MOV1,OFF1,ZO]
    [CH,CH_3,CH_3,N,H,CH_2,CH_2,CH_2,CH_2,NH_2]
\stopchemical
```

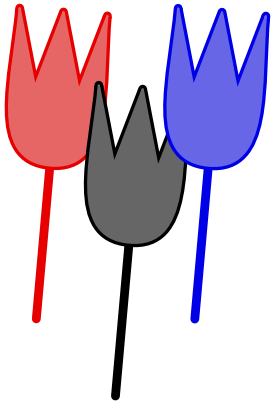


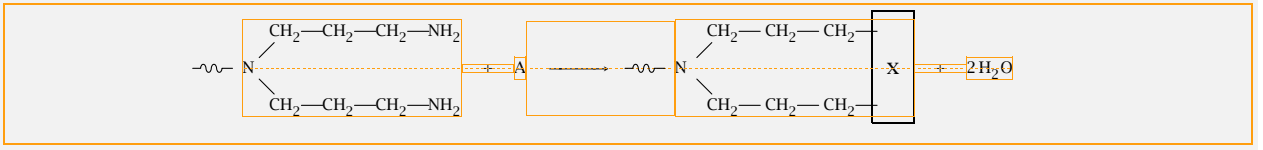


```
\setupchemical
  [width=fit,
   height=fit]
\startchemical
  \chemical
    [ONE,Z0,TB1,
     MOV1,Z0,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,2OFF1,SB2,
     DIR2,Z0,SB14,
   SAVE,
     DIR4,OFF5,Z0,2OFF5,SB5,
     MOV5,OFF5,Z0,2OFF5,SB5,
     MOV5,Z0,TB5,
     MOV5,Z0,
   RESTORE,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,Z0,
   SAVE,
     DIR8,ONE,2OFF1,Z0,OFF1,SB1,SB4,
```

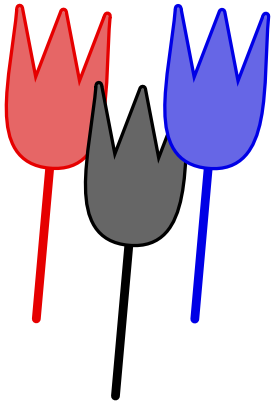


```
    MOV1,OFF1,Z0,2OFF1,SB1,
    MOV1,Z0,TB1,
    MOV1,Z0,
  RESTORE,
    DIR2,ONE,2OFF1,Z0,OFF1,SB1,SB6,
    MOV1,OFF1,Z0,2OFF1,SB1,
    MOV1,Z0,TB1,
    MOV1,Z0]
   [N,C,CH_2,CH_2,N,CH_2,CH_2,C,N,CH_2,CH_2,CH_2,CH_2,N,
    CH_2,CH_2,C,N,
    CH_2,CH_2,C,N]
\stopchemical
```

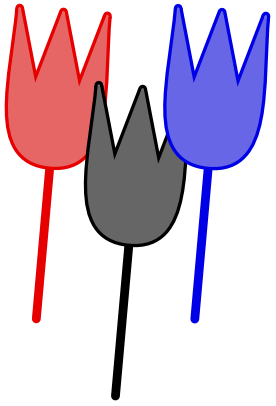




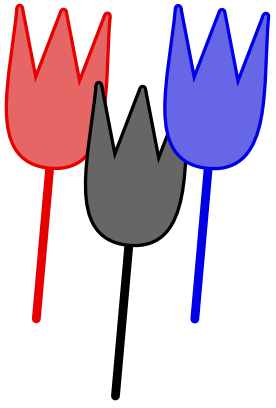

```
\def\SomeX
  {\inframed[height=10ex,width=2em]{x}}
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical
      [ONE,OE5,Z0,
    SAVE,
      DIR8,Z0,SB14,
      MOV1,Z0,SB1,
      MOV1,Z0,SB1,
      MOV1,Z0,
    RESTORE,
      DIR2,Z0,SB16,
      MOV1,Z0,SB1,
      MOV1,Z0,SB1,
      MOV1,Z0]
     [N,CH_2,CH_2,CH_2,NH_2,CH_2,CH_2,CH_2,NH_2]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
```

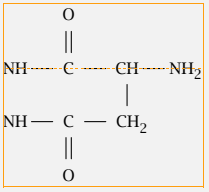


```
\stopchemical
\startchemical
  \chemical[ZO][A]
\stopchemical
\startchemical
  \chemical[SPACE,GIVES,SPACE,SPACE,SPACE]
\stopchemical
\startchemical
  \chemical
    [ONE,OE5,ZO,
   SAVE,
     DIR8,OFF1,ZO,SB14,
     MOV1,OFF1,ZO,OFF1,SB1,
     MOV1,OFF1,ZO,OFF1,SB1,
   RESTORE,
     DIR2,ZO,SB16,
     MOV1,OFF1,ZO,OFF1,SB1,
     MOV1,OFF1,ZO,OFF1,SB1,
     DIR8,3OFF1,ZO]
    [N,CH_2,CH_2,CH_2,CH_2,CH_2,CH_2,\SomeX]
\stopchemical
\startchemical
   \chemical[SPACE,PLUS,SPACE][]
\stopchemical
\startchemical
   \chemical[ZO][2\,H_2O]
\stopchemical
```

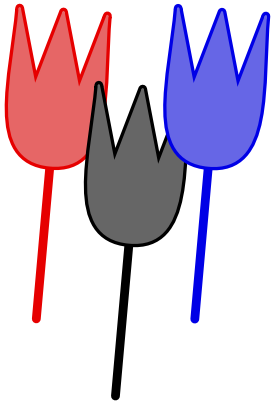


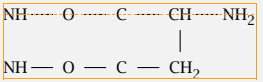
```
\stopformula
```



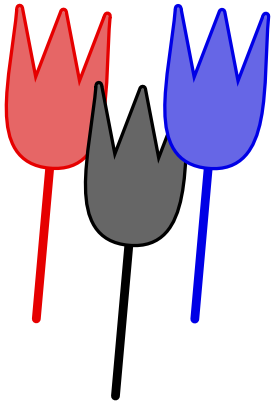


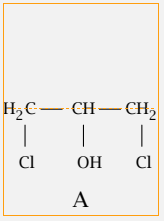

```
\setupchemical
  [width=fit,
   height=fit]
\startchemical
  \chemical
    [ONE,Z0,SB1,
     MOV1,Z07,SB1,DB7,
     MOV1,OFF1,Z0,OFF1,Z1„SB13,
     MOV3,OFF1,Z0,OFF5,SB5,
     MOV5,Z03,SB5,DB3,
     MOV5,Z0]
    [NH,C,O,CH,NH_2,CH_2,C,O,NH]
\stopchemical
```



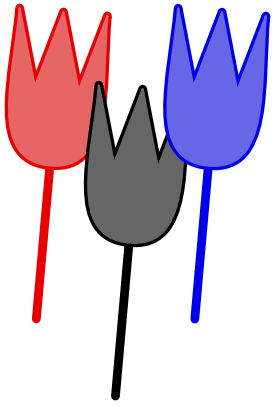


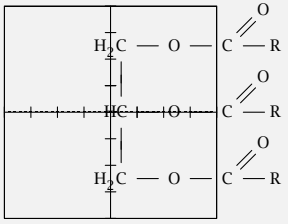

```
\setupchemical
  [width=fit,
   height=fit]
\startchemical
  \chemical
    [ONE,Z0,SB1,
     MOV1,Z0,SB1,
     MOV1,Z0,SB1,
     MOV1,OFF1,Z0,OFF1,Z1,SB13,
     MOV3,OFF1,Z0,OFF5,SB5,
     MOV5,Z0,SB5,
     MOV5,Z0,SB5,
     MOV5,Z0]
    [NH,O,C,CH,NH_2,CH_2,C,O,NH]
\stopchemical
```



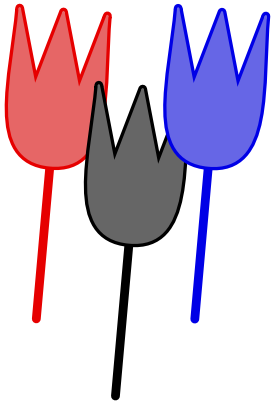



```
\setupchemical
  [width=fit]
\startchemical
  \chemical
    [ONE,Z0,OFF1,SB13,Z3,
     MOV1,OFF1,Z0,OFF1,SB13,Z3,
     MOV1,OFF1,Z0,SB3,Z3]
    [H_2C,Cl,CH,OH,CH_2,Cl]
  \bottext{A}
\stopchemical
```

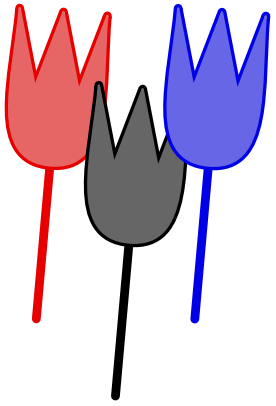


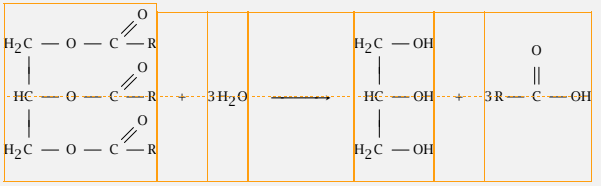


```
\setupchemical
  [axis=on]
\startchemical
  \chemical
    [ONE,
   SAVE,
     OFF1,Z0,2OFF1,SB7,SB3,SB1,
     MOV1,Z0,SB1,
     MOV1,Z0,DB8,CZ8,SB1,Z1,
   RESTORE,
   SAVE,
     SUB4,ONE,Z0,2OFF1,SB3,SB1,
     MOV1,Z0,SB1,
     MOV1,Z0,DB8,CZ8,SB1,Z1,
   RESTORE,
     SUB2,ONE,Z0,2OFF1,SB7,SB1,
     MOV1,Z0,SB1,
     MOV1,Z0,DB8,CZ8,SB1,Z1]
    [HC,O,C,O,R,
     H_2C,O,C,O,R,
```

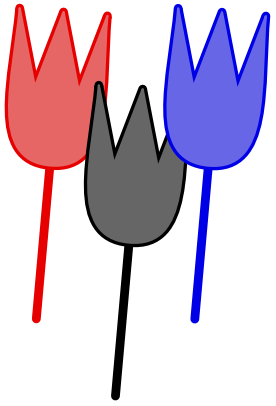


```
    H_2C,O,C,O,R]
\stopchemical
```

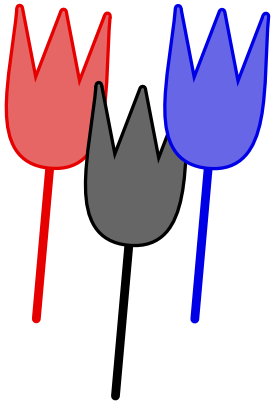




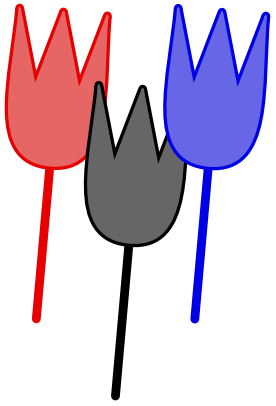
```
\startformula
\setupchemical
  [scale=small,
   size=small,
   width=fit]
\startchemical
  \chemical
    [ONE,
   SAVE,
     OFF1,Z0,2OFF1,SB7,SB3,SB1,
     MOV1,Z0,SB1,
     MOV1,Z0,DB8,CZ8,SB1,Z1,
   RESTORE,
   SAVE,
     SUB4,ONE,Z0,2OFF1,SB3,SB1,
     MOV1,Z0,SB1,
     MOV1,Z0,DB8,CZ8,SB1,Z1,
   RESTORE,
     SUB2,ONE,Z0,2OFF1,SB7,SB1,
     MOV1,Z0,SB1,
     MOV1,Z0,DB8,CZ8,SB1,Z1]
```

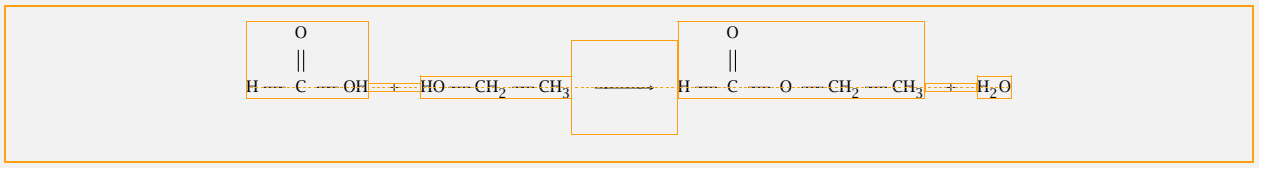


```
    [HC,O,C,O,R,
     H_{2}C,O,C,O,R,
     H_{2}C,O,C,O,R]
\stopchemical
\startchemical
  \chemical[SPACE,PLUS,SPACE]
\stopchemical
\startchemical
  \chemical[ZO][3\,H_2O]
\stopchemical
\startchemical
  \chemical[SPACE,GIVES,SPACE]
\stopchemical
\startchemical
  \chemical
    [ONE,
   SAVE,
     OFF1,ZO,2OFF1,SB7,SB3,SB1,Z1,
   RESTORE,
   SAVE,
     SUB4,ONE,ZO,2OFF1,SB3,SB1,Z1,
   RESTORE,
     SUB2,ONE,ZO,2OFF1,SB7,SB1,Z1]
    [HC,OH,
     H_2C,OH,
     H_2C,OH]
\stopchemical
```

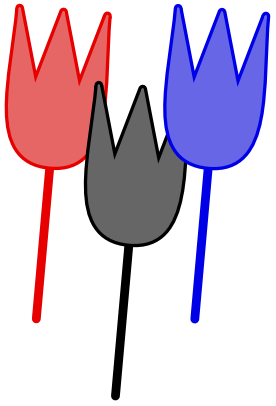


```
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical
      [ONE,ZO,SB1,MOV1,ZO17,SB1,DB7][3\,R,C,OH,O]
  \stopchemical
\stopformula
```

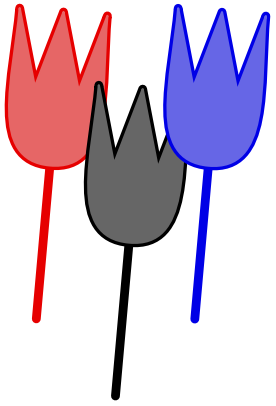


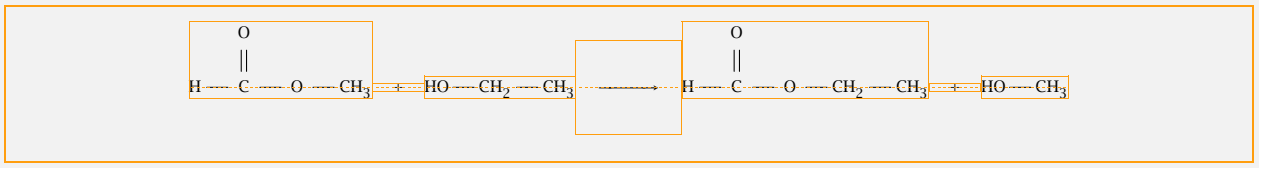



```
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical[ONE,ZO157,SB15,DB7][C,OH,H,O]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE][]
  \stopchemical
  \startchemical
    \chemical
      [ONE,ZO,SB1,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,OFF1,ZO]
      [HO,CH_2,CH_3,]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
  \chemical
```

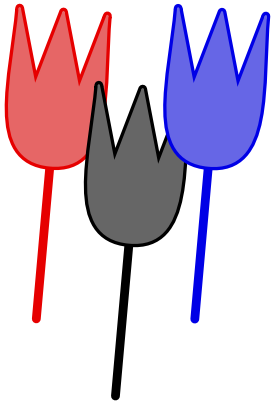


```
    [ONE,ZO57,SB15,DB7,
     MOV1,ZO,SB1,
     MOV1,OFF1,ZO,2OFF1,Z1,SB1]
    [C,H,O,O,CH_2,CH_3]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ZO][H_2O]
  \stopchemical
\stopformula
```

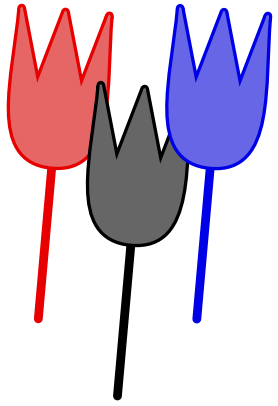


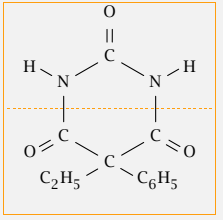


```
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical
     [ONE,ZO57,SB15,DB7,MOV1,ZO1,SB1][C,H,O,O,CH_3]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical
      [ONE,ZO,SB1,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,OFF1,ZO]
      [HO,CH_2,CH_3]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
```

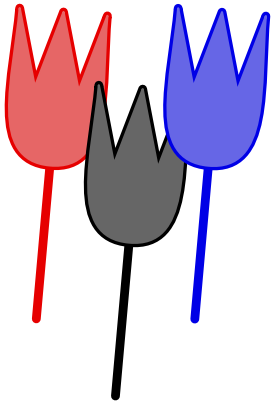


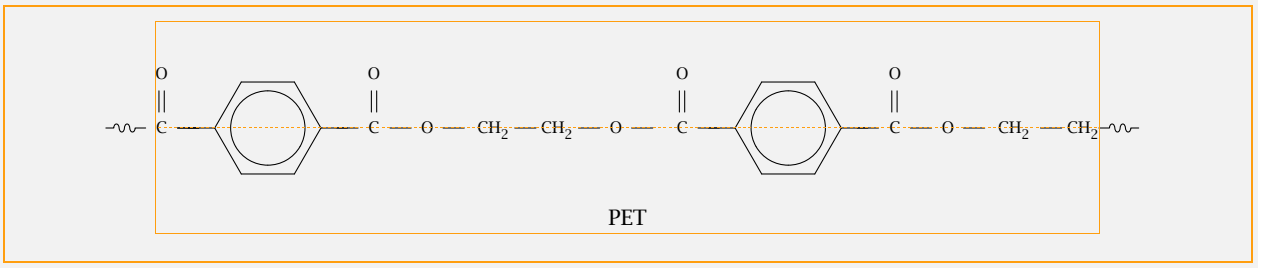
```
    \chemical
      [ONE,ZO57,SB15,DB7,
       MOV1,ZO,SB1,
       MOV1,OFF1,ZO,2OFF1,Z1,SB1]
      [C,H,O,O,CH_2,CH_3]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE][]
  \stopchemical
  \startchemical
    \chemical
      [ONE,ZO,SB1,MOV1,OFF1,ZO][HO,CH_3]
  \stopchemical
\stopformula
```



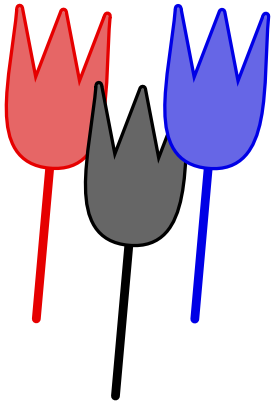


```
\startformula
  \startchemical
    \chemical
      [SIX,SB1..6,Z1..6,
       SR15,DR246,-SR3,+SR3,
       RZ12,-RZ3,+RZ3,RZ456]
      [N,C,C,C,N,C,H,O,C_6H_5,C_2H_5,O,H,O]
  \stopchemical
\stopformula
```

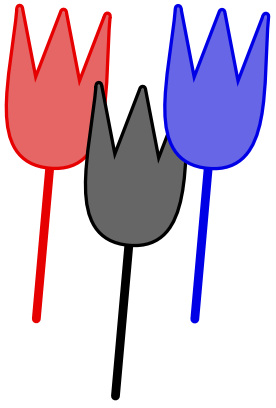


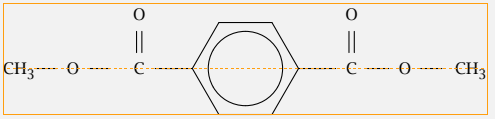



```
\setupchemical
  [width=fit]
\definechemical
  [molecule]
  {\chemical
     [ONE,Z0,Z7,SB1,DB7,
      SUB1,SIX,ROT2,B,C,R36,
      SUB1,ONE,Z07,SB15,DB7,
      MOV1,Z0,SB1]
     [C,O,C,O,O]}
\startformula
  \startchemical
    \chemical
      [ONE,Z0,SB1,OE5]
    \chemical
      [molecule]
    \chemical
      [SUB1,ONE,Z0,OFF1,SB1,MOV1,OFF1,Z0,2OFF1,SB1,MOV1,Z0,SB1][CH_2,CH_2,O]
    \chemical
```

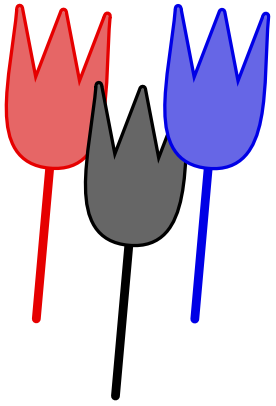


```
      [SUB1,molecule]
    \chemical
      [SUB1,ONE,ZO,2OFF1,SB1,MOV1,OFF1,ZO,OE1][CH_2,CH_2]
    \bottext{PET}
  \stopchemical
\stopformula
```

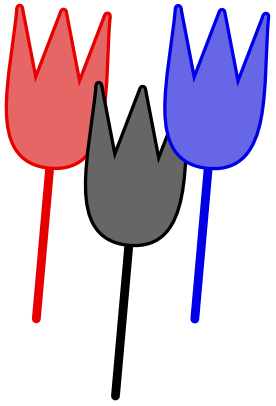


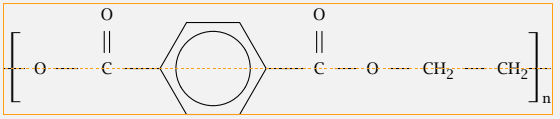



```
\setupchemical
  [width=fit,
   height=fit]
\definechemical
  [molecule]
  {\chemical
     [ONE,Z0,Z7,SB1,DB7,
      SUB1,SIX,ROT2,B,C,R36,
      SUB1,ONE,Z07,SB15,DB7,
      MOV1,Z0,SB1]
     [C,O,C,O,O]}
\startchemical
  \chemical
    [ONE,Z0,SB1,
     MOV1,Z0,SB1,
     SUB1,molecule,
     SUB1,ONE,Z0]
    [CH_3,O,CH_3]
\stopchemical
```




```
\setupchemical
  [width=fit,
   height=fit]
\startchemical
  \chemical
    [ONE,Z0,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,Z0]
    [HO,CH_2,CH_2,OH]
\stopchemical
```

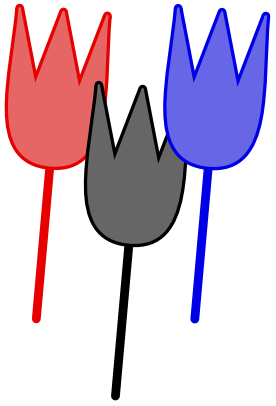


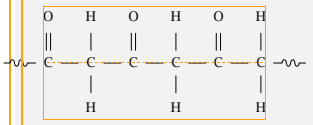


```
\setupchemical
  [width=fit,
   height=fit]

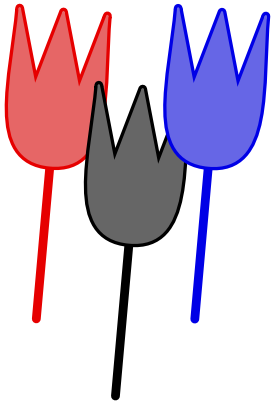
\definechemical
  [molecule]
  {\chemical
     [ONE,Z0,Z7,SB1,DB7,
      SUB1,SIX,ROT2,B,C,R36,
      SUB1,ONE,Z07,SB15,DB7,
      MOV1,Z0,SB1]
     [C,O,C,O,O]}

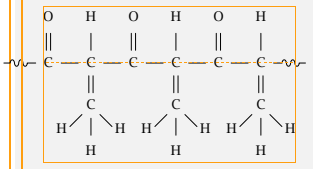
\startchemical
  \chemical
    [ONE,Z0,SB1,SB5,ZT5,
     SUB1,molecule,
     SUB1,ONE,Z0,2OFF1,SB1,
     MOV1,2OFF1,Z0,2OFF1,SB1,ZT1]
    [O,\Bigg\lbrack,CH_2,CH_2,\Bigg\rbrack_n]
\stopchemical
```



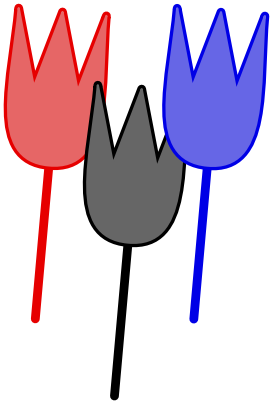


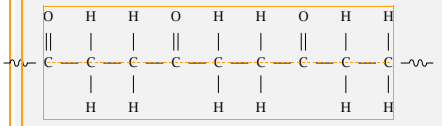
```
\startchemical[width=fit,height=fit,size=small,scale=small]
  \chemical
    [ONE,SB1,DB7,Z07,OE5,
     MOV1,SB137,Z037,
     MOV1,SB1,DB7,Z07,
     MOV1,SB137,Z037,
     MOV1,SB1,DB7,Z07,
     MOV1,SB37,Z037,OE1]
    [C,O,C,H,H,C,O,C,H,H,C,O,C,H,H]
\stopchemical
```



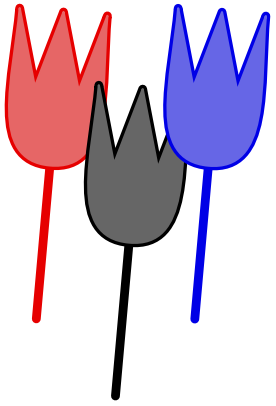


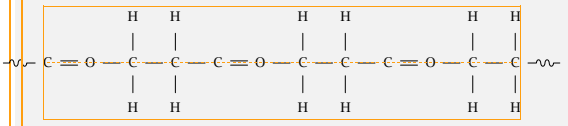
```
\startchemical[width=fit,height=fit,size=small,scale=small]
  \chemical
    [ONE,SB1,DB7,Z07,OE5,
     MOV1,SB17,DB3,Z07,
   SAVE,
     MOV3,ONE,Z0234,SB234,
   RESTORE,
     MOV1,SB1,DB7,Z07,
     MOV1,SB17,DB3,Z07,
   SAVE,
     MOV3,ONE,Z0234,SB234,
   RESTORE,
     MOV1,SB1,DB7,Z07,
     MOV1,SB7,DB3,Z07,OE1,
     MOV3,ONE,Z0234,SB234]
    [C,O,C,H,C,H,H,H,C,O,C,H,C,H,H,H,C,O,C,H,C,H,H,H]
\stopchemical
```



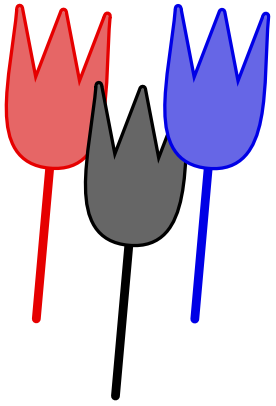


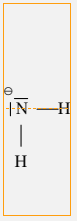
```
\startchemical[width=fit,height=fit,size=small,scale=small]
  \chemical
    [ONE,SB1,DB7,Z07,OE5,
     MOV1,SB137,Z037,
     MOV1,SB137,Z037,
     MOV1,SB1,DB7,Z07,
     MOV1,SB137,Z037,
     MOV1,SB137,Z037,
     MOV1,SB1,DB7,Z07,
     MOV1,SB137,Z037,
     MOV1,SB37,Z037,OE1]
    [C,O,C,H,H,C,H,H,C,O,C,H,H,C,H,H,C,O,C,H,H,C,H,H]
\stopchemical
```



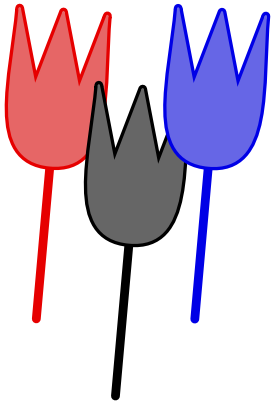


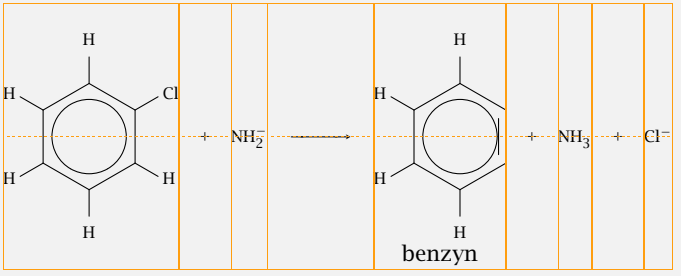
```
\startchemical[width=fit,height=fit,size=small,scale=small]
  \chemical
    [ONE,DB1,Z0,OE5,
     MOV1,ONE,SB1,Z0,
     MOV1,SB137,Z037,
     MOV1,SB137,Z037,
     MOV1,DB1,Z0,
     MOV1,ONE,SB1,Z0,
     MOV1,SB137,Z037,
     MOV1,SB137,Z037,
     MOV1,DB1,Z0,
     MOV1,ONE,SB1,Z0,
     MOV1,SB137,Z037,
     MOV1,SB37,Z037,OE1]
    [C,O,C,H,H,C,H,H,C,O,C,H,H,C,H,H,C,O,C,H,H,C,H,H]
\stopchemical
```



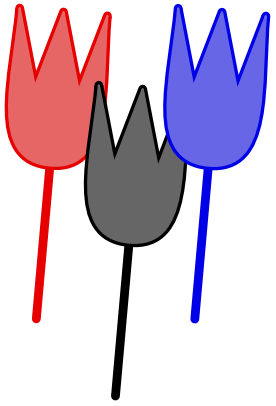


```
\startchemical[width=fit]
  \chemical
    [ONE,ZO1,OFF1,SB13,EP57,MOV3,ZO]
    [\TL{\ominus}N,H,H]
\stopchemical
```

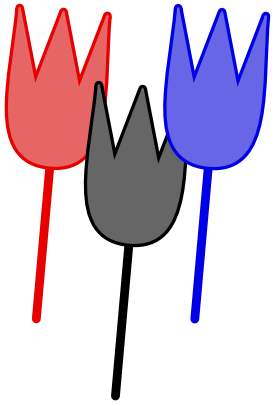


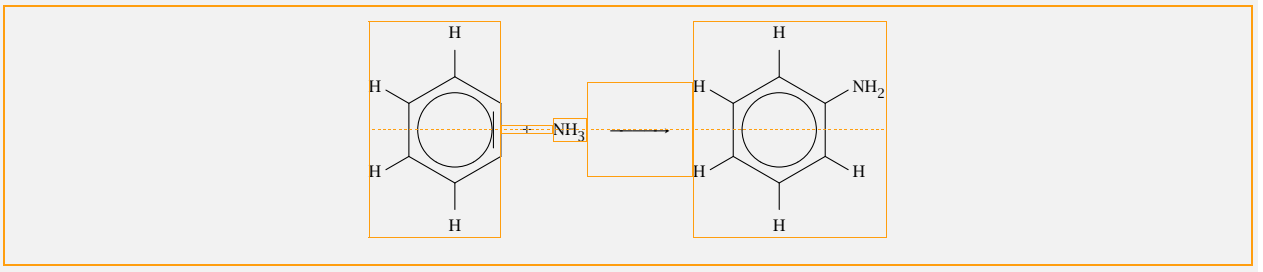



```
\startformula
  \setupchemical
    [width=fit,
     height=5000]
  \startchemical
    \chemical[SIX,C,B,R1..6,RZ1..6][Cl,H,H,H,H,H]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE][]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][NH_{2}^{-}]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE][]
  \stopchemical
  \startchemical
    \chemical[SIX,C,B,EB1,R3..6,RZ3..6][H,H,H,H]
```

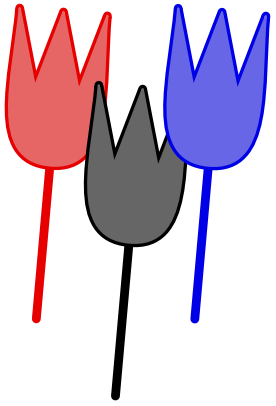


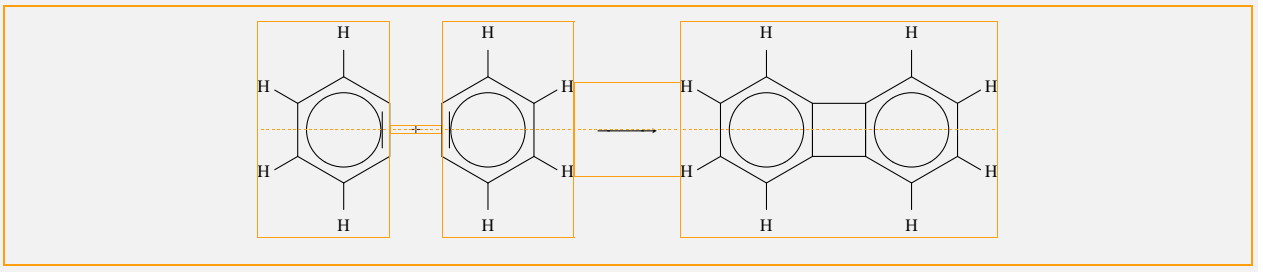
```
    \bottext{benzyn}
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][NH_{3}]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][Cl^{-}]
  \stopchemical
\stopformula
```



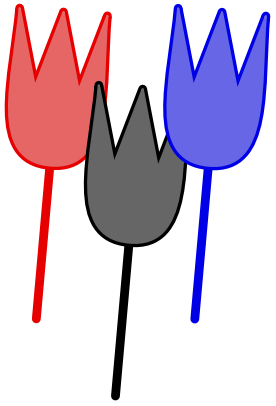



```
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical[SIX,C,B,EB1,R3..6,RZ3..6][H,H,H,H]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE][]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][NH_3]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE][]
  \stopchemical
  \startchemical
    \chemical[SIX,C,B,R1..6,RZ1..6][NH_2,H,H,H,H,H]
  \stopchemical
\stopformula
```

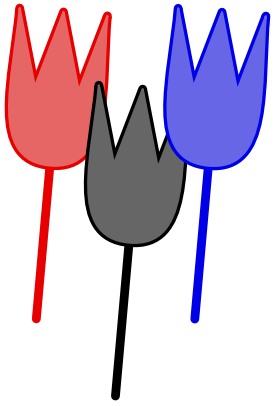


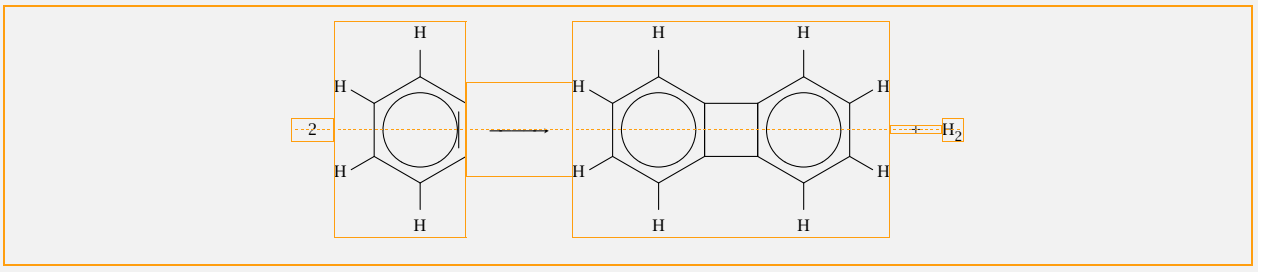


```
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical[SIX,C,B,EB1,R3..6,RZ3..6][H,H,H,H]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[SIX,C,B,EB4,R1236,RZ1236][H,H,H,H]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical
      [SIX,C,B,R3456,RZ3456,
       ADJ1,FOUR,B,ADJ1,
```

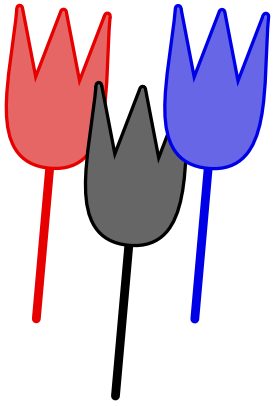


```
      SIX,C,B,R1236,RZ1236]
     [H,H,H,H,H,H,H,H]
  \stopchemical
\stopformula
```

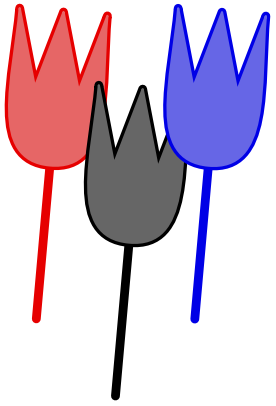


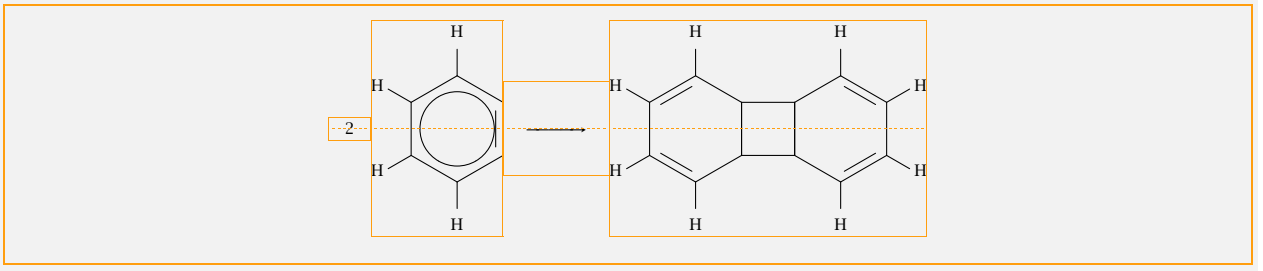



```
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical[ONE,ZO,SPACE,SPACE][2]
  \stopchemical
  \startchemical
    \chemical[SIX,C,B,EB1,R3..6,RZ3..6][H,H,H,H]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical
      [SIX,C,B,R3456,RZ3456,ADJ1,
       FOUR,B,ADJ1,
       SIX,C,B,R1236,RZ1236]
      [H,H,H,H,H,H,H,H]
  \stopchemical
```

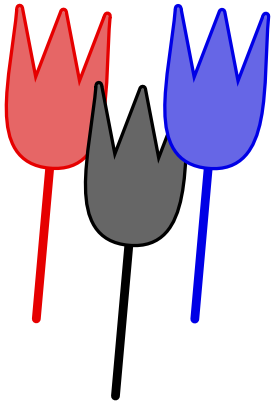


```
  \startchemical
    \chemical[SPACE,PLUS,SPACE][]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][H_2]
  \stopchemical
\stopformula
```

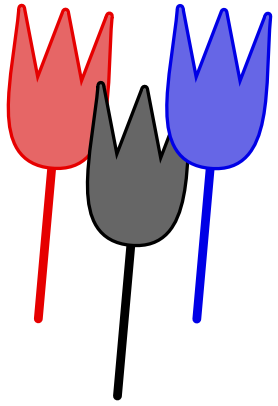


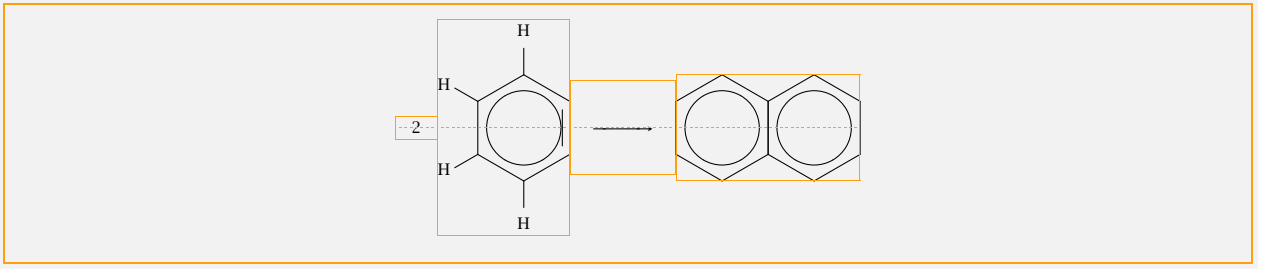



```
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical[ONE,ZO,SPACE,SPACE][2]
  \stopchemical
  \startchemical
    \chemical[SIX,C,B,EB1,R3..6,RZ3..6][H,H,H,H]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical
      [SIX,B,EB35,R3456,RZ3456,
       ADJ1,FOUR,B,ADJ1,
       SIX,B,EB26,R1236,RZ1236]
      [H,H,H,H,H,H,H,H]
```

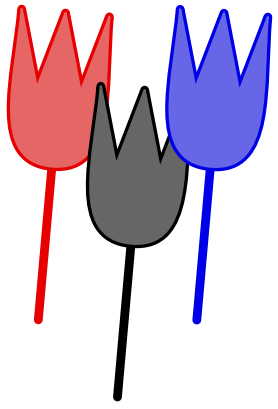


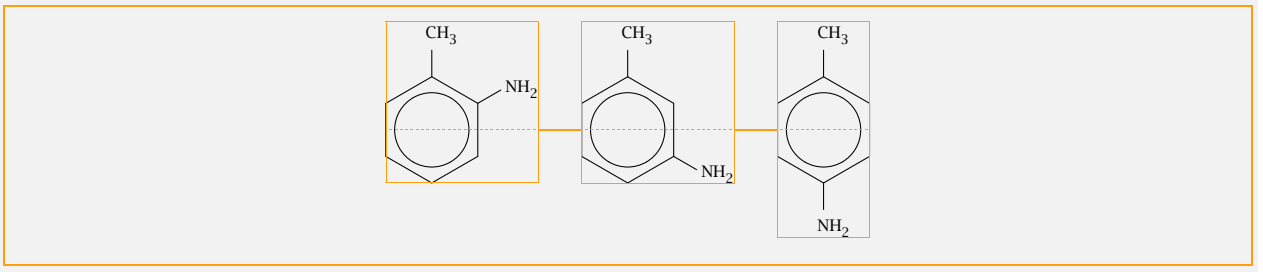
```
  \stopchemical
\stopformula
```



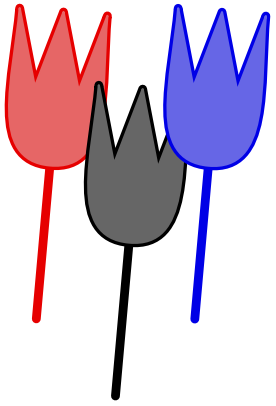


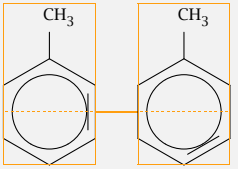

```
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical[ONE,ZO,SPACE,SPACE][2]
  \stopchemical
    \startchemical
    \chemical[SIX,C,B,EB1,R3..6,RZ3..6][H,H,H,H]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical[SIX,C,B,ADJ1,SIX,C,B]
  \stopchemical
\stopformula
```



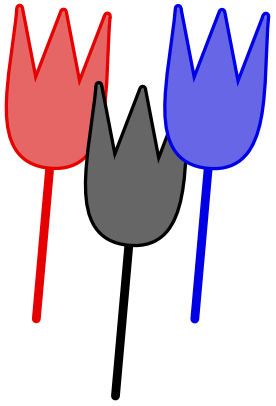


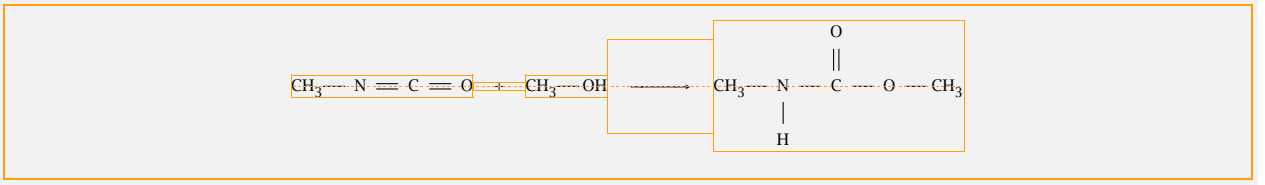

```
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical[SIX,C,B,R16,RZ16][NH_2,CH_3]
  \stopchemical
  \startchemical
    \chemical[SPACE,SPACE]
  \stopchemical
  \startchemical
    \chemical[SIX,C,B,R26,RZ26][NH_2,CH_3]
  \stopchemical
  \startchemical
    \chemical[SPACE,SPACE]
  \stopchemical
  \startchemical
    \chemical[SIX,C,B,R36,RZ36][NH_2,CH_3]
  \stopchemical
\stopformula
```



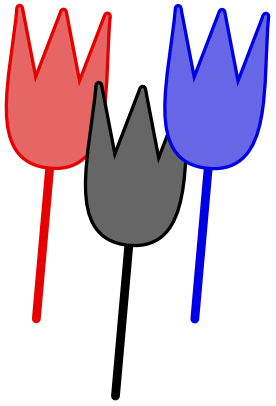



```
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical[SIX,C,B,EB1,R6,RZ6][CH_3]
  \stopchemical
  \startchemical
    \chemical[SPACE,SPACE][]
  \stopchemical
  \startchemical
    \chemical[SIX,C,B,EB2,R6,RZ6][CH_3]
  \stopchemical
  \stopformula
```

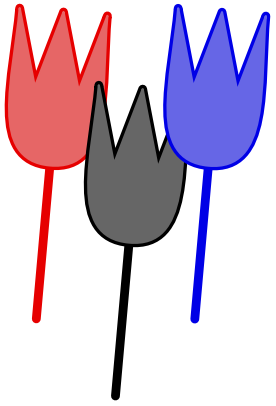


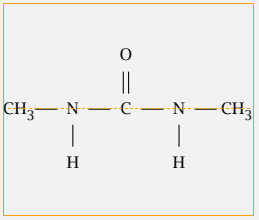



```
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical
      [ONE,ZO,SB1,
       MOV1,ZO,DB1,
       MOV1,ZO,DB1,
       MOV1,ZO]
      [CH_3,N,C,O]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical
      [ONE,ZO,SB1,
       MOV1,ZO]
      [CH_3,OH]
  \stopchemical
  \startchemical
```

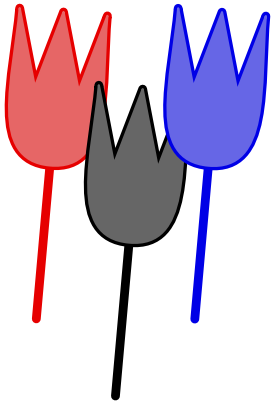


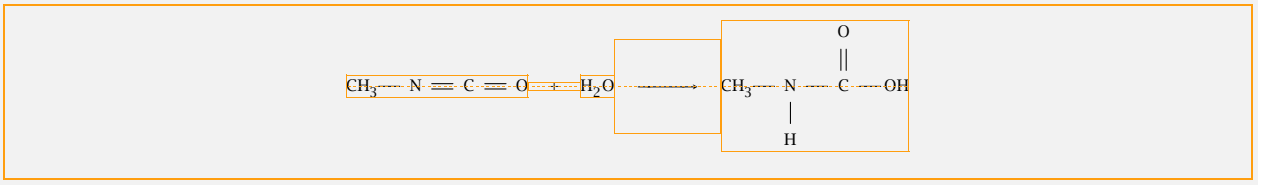
```
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical
      [ONE,Z0,SB1,
       MOV1,Z0,SB13,Z3,
       MOV1,Z0,SB1,DB7,Z7,
       MOV1,Z0,SB1,
       MOV1,OFF1,Z0]
      [CH_3,N,H,C,O,O,CH_3]
  \stopchemical
\stopformula
```



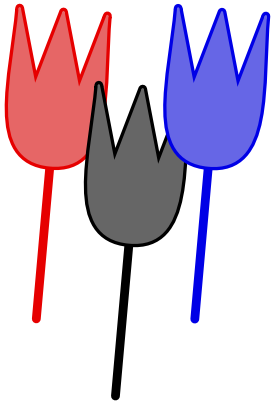



```
\startchemical[width=fit]
  \chemical
    [ONE,Z0,SB1,
     MOV1,Z03,SB13,
     MOV1,Z07,SB1,DB7,
     MOV1,Z03,SB13,
     MOV1,OFF1,Z0]
    [CH_3,N,H,C,O,N,H,CH_3]
\stopchemical
```

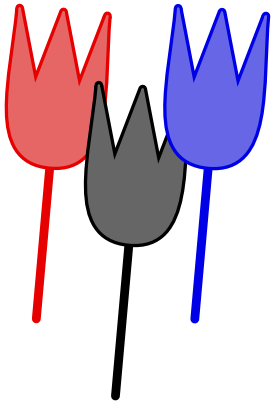


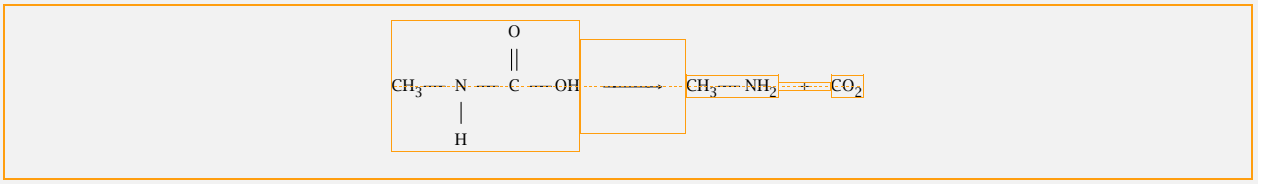



```
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical
      [ONE,ZO,SB1,
       MOV1,ZO,DB1,
       MOV1,ZO,DB1,
       MOV1,ZO]
      [CH_3,N,C,O]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO,][H_2O]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
```

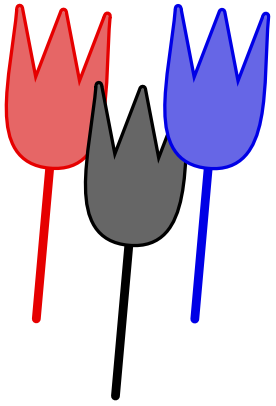


```
    \chemical
      [ONE,Z0,SB1,
       MOV1,Z0,SB13,Z3,
       MOV1,Z0,SB1,DB7,Z7,
       MOV1,Z0]
      [CH_3,N,H,C,O,OH]
  \stopchemical
\stopformula
```

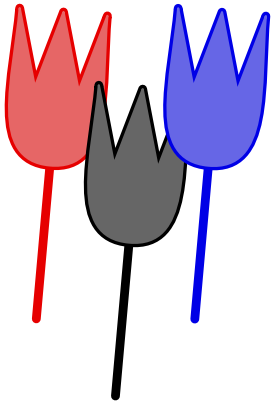


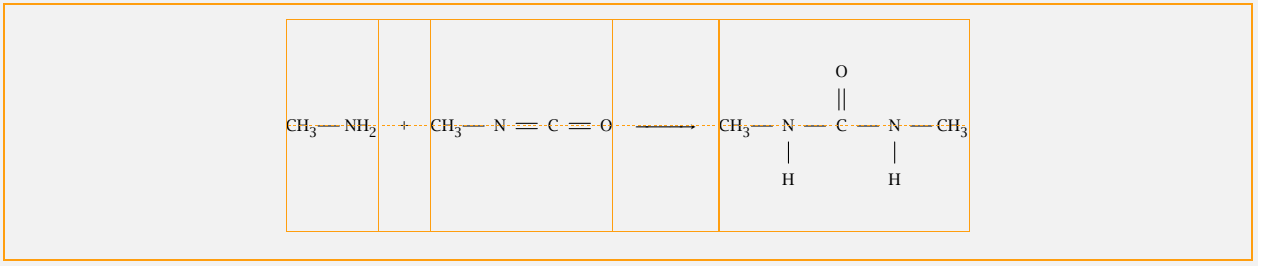



```
\startformula
  \setupchemical
    [width=fit,
     height=fit]
  \startchemical
    \chemical
      [ONE,ZO,SB1,
       MOV1,ZO,SB13,Z3,
       MOV1,ZO,SB1,DB7,Z7,
       MOV1,ZO]
      [CH_3,N,H,C,O,OH]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO,SB1,Z1][CH_3,NH_2]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
```

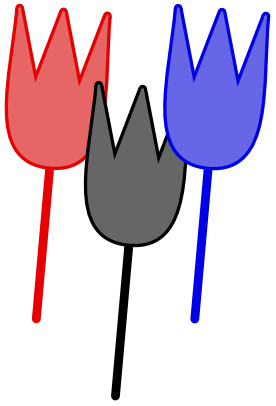


```
    \chemical[ONE,ZO][CO_2]
  \stopchemical
\stopformula
```

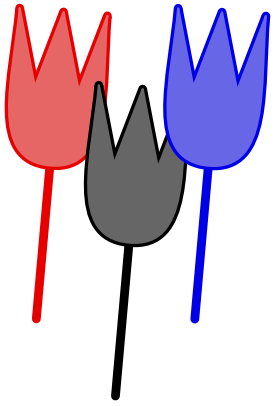


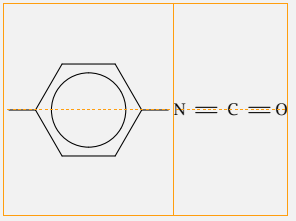



```
\startformula
  \setupchemical
    [width=fit]
  \startchemical
    \chemical[ONE,Z0,SB1,Z1][CH_3,NH_2]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical
      [ONE,Z0,SB1,
       MOV1,Z0,DB1,
       MOV1,Z0,DB1,
       MOV1,Z0]
      [CH_3,N,C,O]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
```

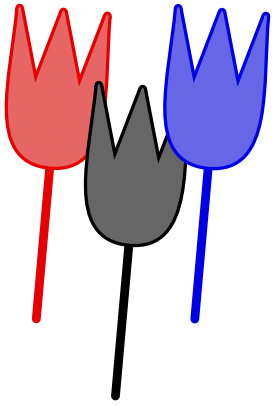


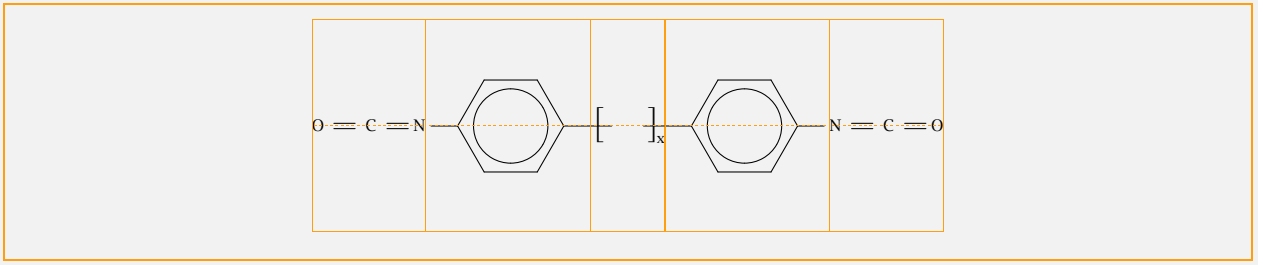
```
  \startchemical
    \chemical
      [ONE,Z0,SB1,
       MOV1,Z03,SB13,
       MOV1,Z07,SB1,DB7,
       MOV1,Z03,SB13,
       MOV1,OFF1,Z0]
      [CH_3,N,H,C,O,N,H,CH_3]
  \stopchemical
\stopformula
```



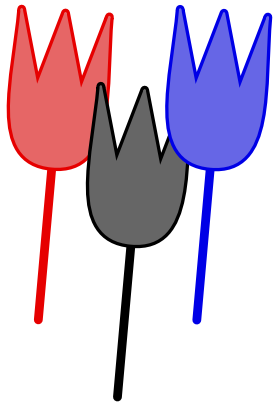


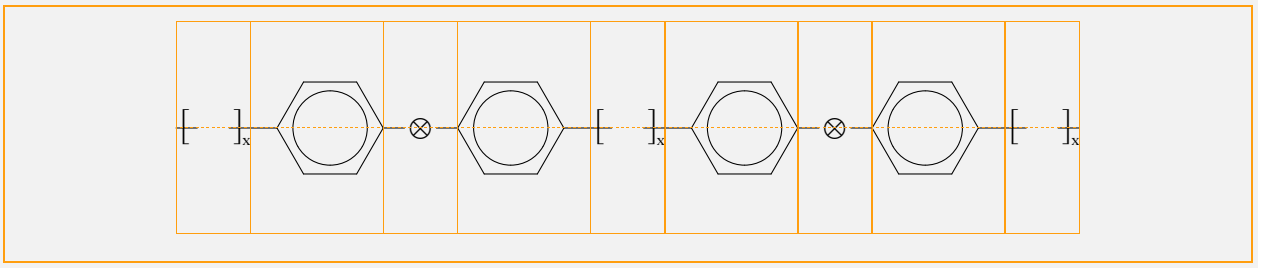

```
\startformula
  \setupchemical
    [width=fit]
  \startchemical
    \chemical[SIX,ROT2,B,C,R36,RZ36]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO,DB1,MOV1,ZO1,DB1][N,C,O]
  \stopchemical
\stopformula
```



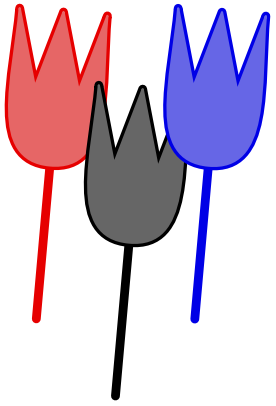



```
\startformula
  \setupchemical
    [width=fit]
  \startchemical
    \chemical[ONE,Z0,DB1,MOV1,Z01,DB1][O,C,N]
  \stopchemical
  \startchemical
    \chemical[SIX,ROT2,B,C,R36,RZ3]
  \stopchemical
  \startchemical
    \chemical[ONE,SB15,ZT5,ZT1][\[,\]{x}]
  \stopchemical
  \startchemical
    \chemical[SIX,ROT2,B,C,R36,RZ6]
  \stopchemical
  \startchemical
    \chemical[ONE,Z0,DB1,MOV1,Z01,DB1][N,C,O]
  \stopchemical
\stopformula
```

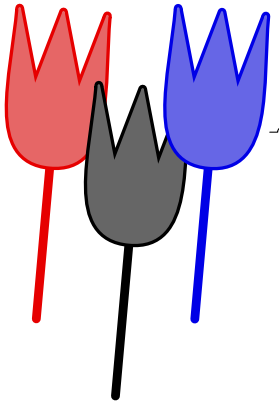


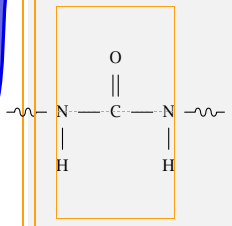


```
\startformula
  \setupchemical
    [width=fit]
  \startchemical
    \chemical[ONE,SB15,ZT5,ZT1][\[,\]{x}]
  \stopchemical
  \startchemical
    \chemical[SIX,ROT2,R3,B,C]
  \stopchemical
  \startchemical
    \chemical[ONE,SB15,ZO][{\bigotimes}]
  \stopchemical
  \startchemical
    \chemical[SIX,ROT2,R6,B,C]
  \stopchemical
  \startchemical
    \chemical[ONE,SB15,ZT5,ZT1][\[,\]{x}]
  \stopchemical
  \startchemical
    \chemical[SIX,ROT2,R3,B,C]
```

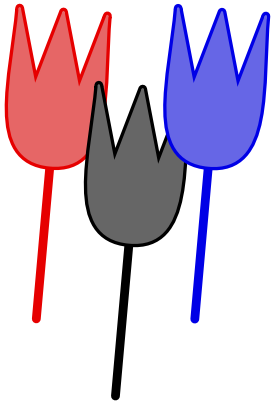


```
  \stopchemical
  \startchemical
    \chemical[ONE,SB15,ZO][{\bigotimes}]
  \stopchemical
  \startchemical
    \chemical[SIX,ROT2,R6,B,C]
  \stopchemical
  \startchemical
    \chemical[ONE,SB15,ZT5,ZT1][\[,\]{x}]
  \stopchemical
\stopformula
```

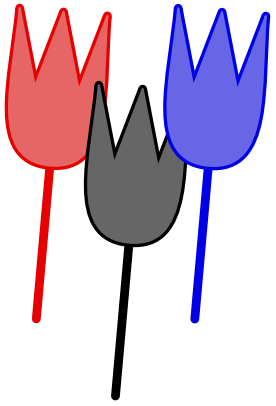


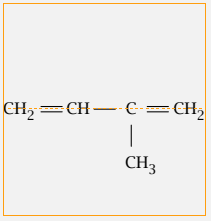



```
\startchemical[width=fit]
  \chemical
    [ONE,Z0,OE5,SB13,Z3,
     MOV1,Z0,SB1,DB7,Z7,
     MOV1,Z0,Z3,SB3,OE1]
    [N,H,C,O,N,H]
\stopchemical
```

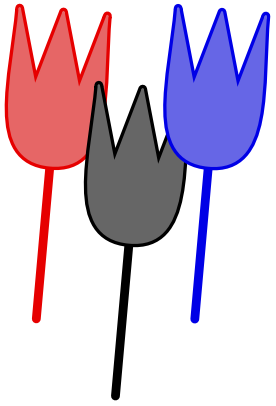


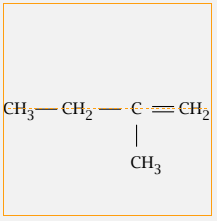

```
\startchemical[width=fit]
  \chemical
    [ONE,Z0,OE5,OFF1,SB1,
     MOV1,Z0,SB13,Z3,
     MOV1,Z07,SB1,DB7,
     MOV1,Z03,SB13,
     MOV1,OFF1,Z0,OE1]
    [CH_2,N,H,C,O,N,H,CH_2]
\stopchemical
```



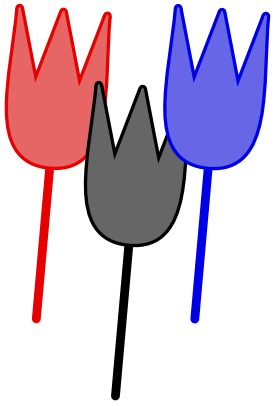


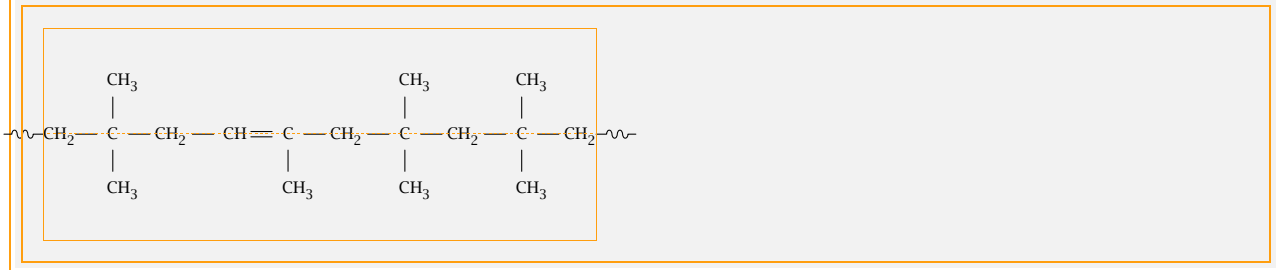

```
\startchemical[width=fit]
  \chemical
    [ONE,Z0,OFF1,DB1,
     MOV1,Z0,SB1,
     MOV1,Z0,SB3,Z3,DB1,
     MOV1,OFF1,Z0]
    [CH_2,CH,C,CH_3,CH_2]
\stopchemical
```



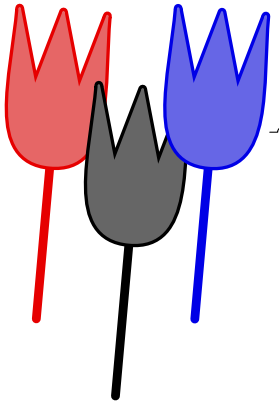


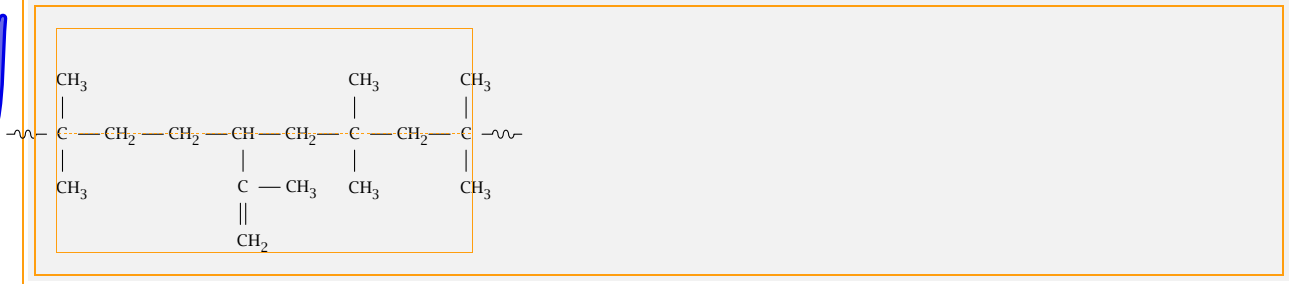
```
\startchemical[width=fit]
  \chemical
    [ONE,Z0,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,Z0,SB3,Z3,DB1,
     MOV1,OFF1,Z0]
    [CH_3,CH_2,C,CH_3,CH_2]
\stopchemical
```



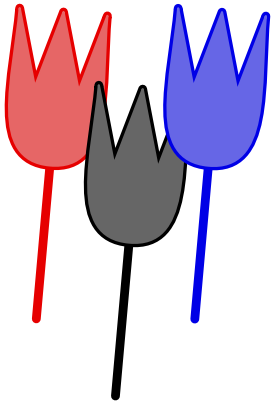


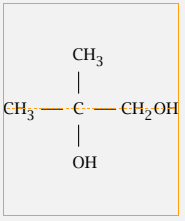
```
\startchemical[width=fit]
  \chemical
    [ONE,OFF1,Z0,OE5,OFF1,SB1,
     MOV1,Z0,SB137,Z37,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,OFF1,DB1,
     MOV1,Z0,SB13,Z3,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,Z0,SB137,Z37,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,Z0,SB137,Z37,
     MOV1,OFF1,Z0,OE1]
    [CH_2,C,CH_3,CH_3,CH_2,CH,C,CH_3,CH_2,C,
     CH_3,CH_3,CH_2,C,CH_3,CH_3,CH_2]
\stopchemical
```



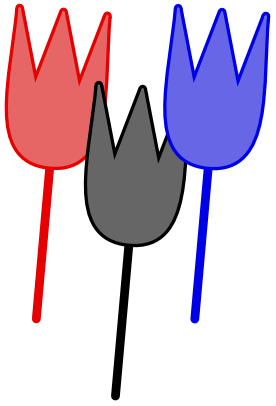


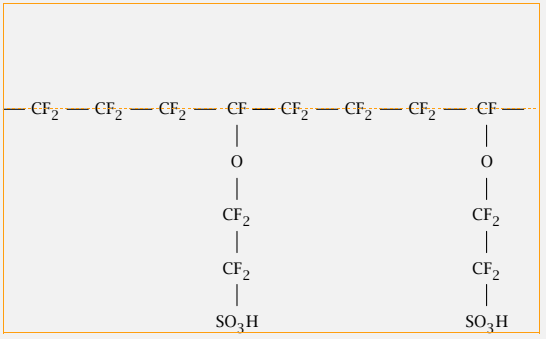
```
\startchemical[width=fit]
  \chemical
    [ONE,Z0,OE5,SB137,Z37,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,Z0,SB13,
   SAVE,
     MOV1,OFF1,Z0,OFF1,SB1,
     MOV1,Z0,SB137,Z37,
     MOV1,OFF1,Z0,OFF1,SB1,
     MOV1,Z0,SB37,Z37,OE1,
   RESTORE,
     MOV3,Z0,SB1,DB3,Z13]
    [C,CH_3,CH_3,CH_2,CH_2,CH,CH_2,C,CH_3,CH_3,
     CH_2,C,CH_3,CH_3,C,CH_3,CH_2]
\stopchemical
```





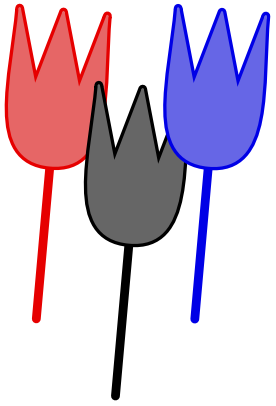

```
\startchemical[width=fit]
  \chemical
    [ONE,SB1357,Z0,Z1357]
    [C,CH_2OH,OH,CH_3,CH_3]
\stopchemical
```



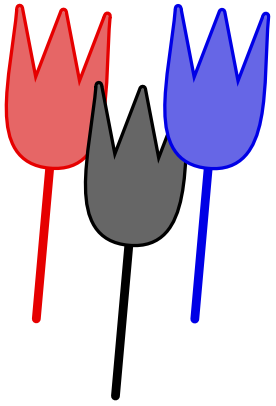


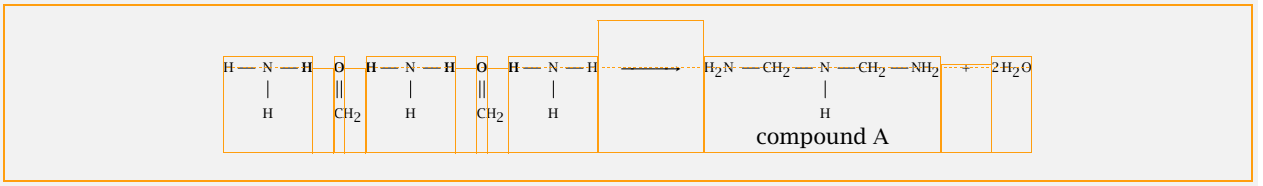

```
\definechemical
  [molecule]
  {\chemical
     [ONE,SB5,OFF1,Z0,2OFF1,SB1,
      MOV1,OFF1,Z0,2OFF1,SB1,
      MOV1,OFF1,Z0,2OFF1,SB1,
      MOV1,OFF1,Z0,SB3,
    SAVE,
      MOV3,Z0,SB3,
      MOV3,Z0,SB3,
      MOV3,Z0,SB3,
      MOV3,Z0,
    RESTORE,
      OFF1,SB1,MOV1]
     [CF_2,CF_2,CF_2,CF,O,CF_2,CF_2,SO_3H]}

\startchemical[width=fit]
```

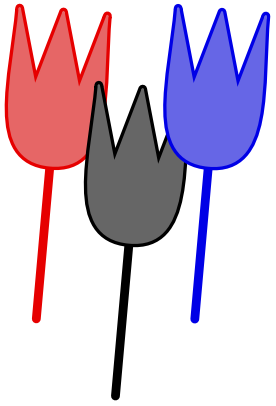


```
  \chemical[molecule, molecule]
\stopchemical
```

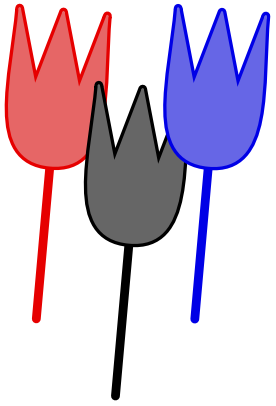




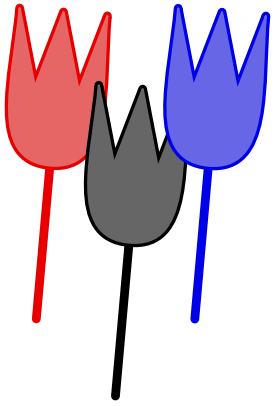

```
\startformula
  \setupchemical
    [height=2000,
     width=fit,
     scale=small,
     size=small,
     bottom=2000]
  \startchemical
    \chemical[ONE,SB1,SB3,SB5,Z0,Z1,Z3,Z5][N,\bf H,H,H]
  \stopchemical
  \startchemical
    \chemical[SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,DB3,Z0,Z3][\bf O,CH_2]
  \stopchemical
  \startchemical
    \chemical[SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,SB1,SB3,SB5,Z0,Z1,Z3,Z5][N,\bf H,H,\bf H]
  \stopchemical
```

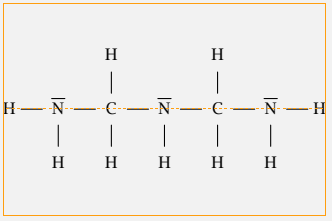


```
\startchemical
  \chemical[SPACE]
\stopchemical
\startchemical
  \chemical[ONE,DB3,Z0,Z3][\bf O,CH_2]
\stopchemical
\startchemical
  \chemical[SPACE]
\stopchemical
\startchemical
\chemical[ONE,SB1,SB3,SB5,Z0,Z1,Z3,Z5][N,H,H,\bf H]
\stopchemical
\startchemical
  \chemical[SPACE,GIVES,SPACE]
\stopchemical
\startchemical
  \chemical
    [ONE,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,SB1,SB3,Z0,Z3,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0]
    [H_2N,CH_2,N,H,CH_2,NH_2]
  \bottext{compound A}
\stopchemical
\startchemical
  \chemical[SPACE,PLUS,SPACE]
```

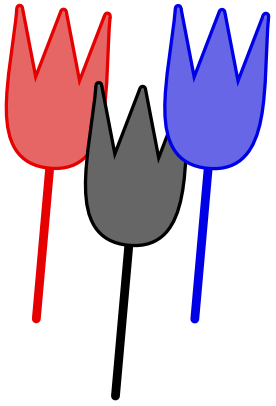


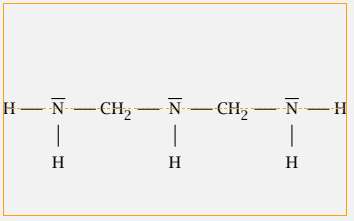
```
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][2\,H_2O]
  \stopchemical
\stopformula
```



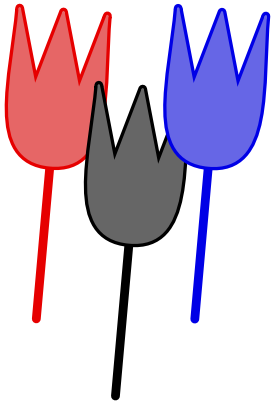


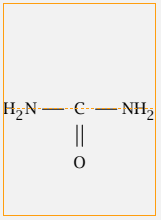
```
\startchemical[width=fit]
\chemical
  [ONE,Z035,SB135,EP7,
   MOV1,Z037,SB137,
   MOV1,Z03,SB13,EP7,
   MOV1,Z037,SB137,
   MOV1,Z013,SB13,EP7]
  [N,H,H,C,H,H,N,H,C,H,H,N,H,H]
\stopchemical
```



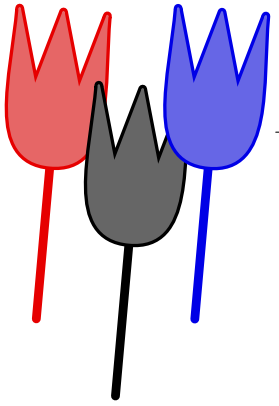


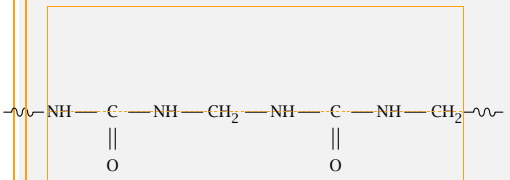
```
\startchemical[width=fit]
  \chemical
    [ONE,ZO35,SB135,EP7,
     MOV1,OFF1,ZO,2OFF1,SB1,
     MOV1,ZO3,SB13,EP7,
     MOV1,OFF1,ZO,2OFF1,SB1,
     MOV1,ZO13,SB13,EP7]
    [N,H,H,CH_2,N,H,CH_2,N,H,H]
\stopchemical
```



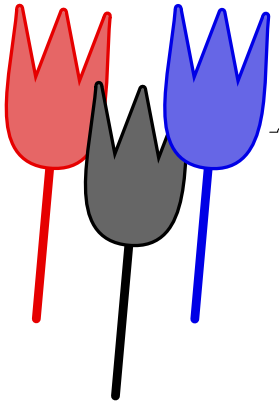


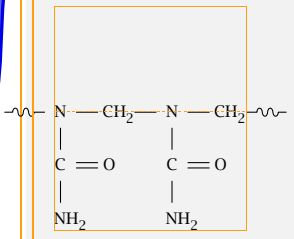

```
\startchemical[width=fit]
  \chemical[ONE,ZO,SB1,DB3,SB5,Z135][C,NH_2,O,H_2N]
\stopchemical
```



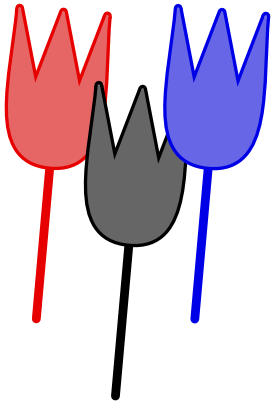


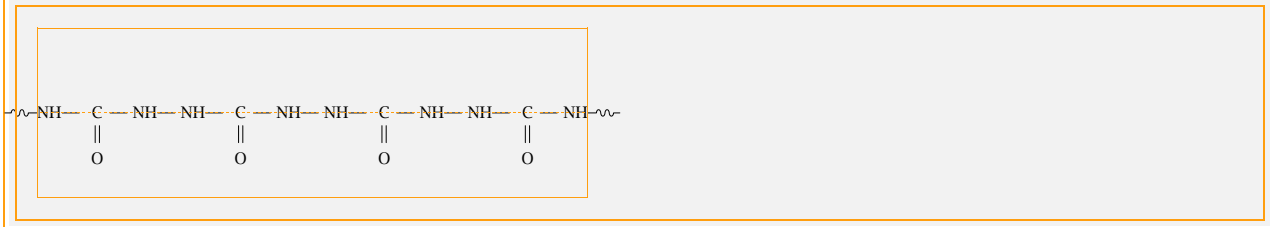

```
\startchemical[width=fit]
  \chemical
    [ONE,Z0,SB1,OE5,
     MOV1,Z0,SB1,Z3,DB3,
     MOV1,Z0,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,Z0,SB1,
     MOV1,Z0,SB1,Z3,DB3,
     MOV1,Z0,SB1,
     MOV1,OFF1,Z0,OE1]
    [NH,C,O,NH,CH_2,NH,C,O,NH,CH_2]
\stopchemical
```



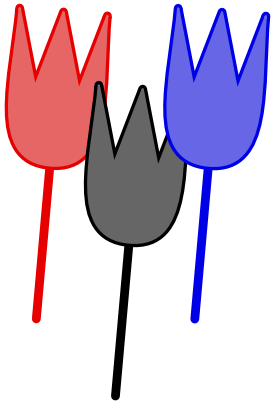


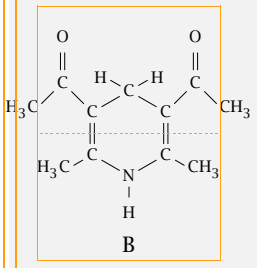

```
\startchemical[width=fit]
  \chemical
    [ONE,ZO,SB1,SB3,OE5,
   SAVE,
     MOV3,ZO13,DB1,SB3,
   RESTORE,
     MOV1,OFF1,ZO,2OFF,1SB1,
     MOV1,ZO,SB13,
   SAVE,
     MOV3,ZO13,DB1,SB3,
   RESTORE,
     MOV1,OFF1,ZO,OFF1,OE1]
    [N,C,O,NH_2,CH_2,N,C,O,NH_2,CH_2]
\stopchemical
```





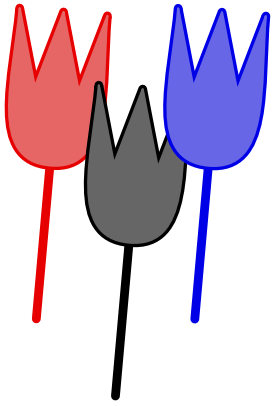

```
\startchemical[width=fit,scale=small,size=medium]
  \chemical
    [ONE,OFF1,Z0,OFF1,SB1,OE5,
     MOV1,OFF1,Z0,OFF1,SB1,Z3,DB3,
     MOV1,OFF1,Z0,OFF1,SB1,
     MOV1,OFF1,Z0,OFF1,SB1,
     MOV1,OFF1,Z0,OFF1,SB1,Z3,DB3,
     MOV1,OFF1,Z0,OFF1,SB1,
     MOV1,OFF1,Z0,OFF1,SB1,
     MOV1,OFF1,Z0,OFF1,SB1,Z3,DB3,
     MOV1,OFF1,Z0,OFF1,SB1,
     MOV1,OFF1,Z0,OFF1,SB1,
     MOV1,OFF1,Z0,OFF1,SB1,Z3,DB3,
     MOV1,OFF1,Z0,OFF1,OE1]
    [NH,C,O,NH,NH,C,O,NH,NH,C,O,NH,NH,C,O,NH]
\stopchemical
```

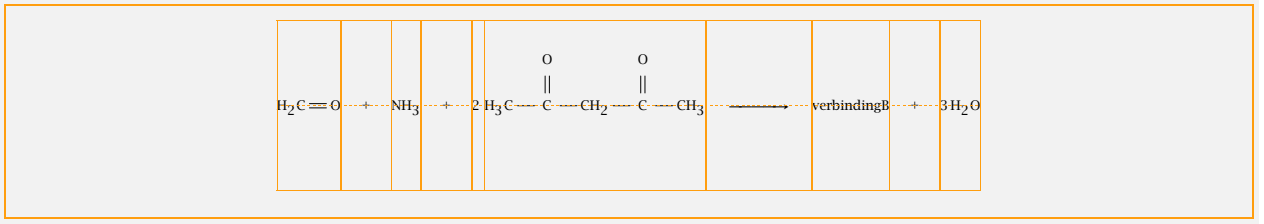




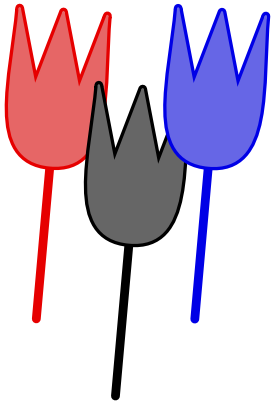
B

```
\startchemical[scale=small,width=fit,top=3000,bottom=3000]
  \chemical[SIX,SB2356,DB14,Z2346,SR3,RZ3,-SR6,+SR6,-RZ6,+RZ6][C,N,C,C,H,H,H]
  \chemical[PB:Z1,ONE,Z0,DIR8,Z0,SB24,DB7,Z27,PE][C,C,CH_3,O]
  \chemical[PB:Z5,ONE,Z0,DIR6,Z0,SB24,DB7,Z47,PE][C,C,H_3C,O]
  \chemical[SR24,RZ24][CH_3,H_3C]
  \bottext{\crlf B} % ??
\stopchemical
```

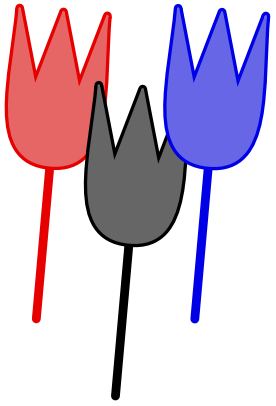


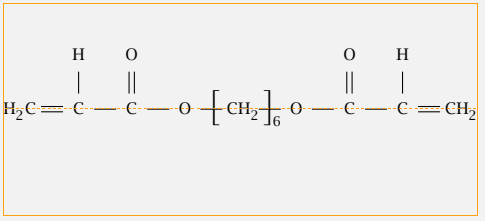



```
\startformula
  \setupchemical
    [width=fit,
     size=small,
     scale=small]
  \startchemical
    \chemical[ONE,ZO,OFF1,DB1,Z1][H_2C,O]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][NH_3]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][2\,\,]
  \stopchemical
  \startchemical
```

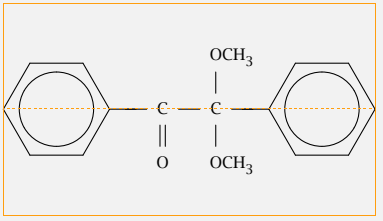


```
    \chemical
      [ONE,ZO,SB1,Z57,SB5,DB7,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,ZO,SB1,Z17,DB7]
      [C,H_3C,O,CH_2,C,CH_3,O]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][verbinding B]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE][]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][3\,H_2O]
  \stopchemical
\stopformula
```

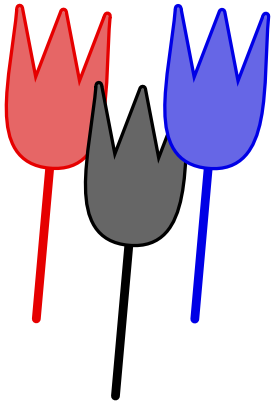


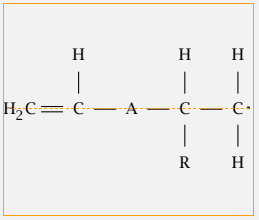


```
\startchemical[width=fit]
  \chemical
    [ONE,Z0,SB1,Z57,DB5,SB7,
     MOV1,Z0,SB1,Z7,DB7,
     MOV1,Z0,SB1,
     MOV1,OFF1,Z0,OFF1,SB1,ZT1,ZT5,
     MOV1,Z0,SB1,
     MOV1,Z0,SB1,Z7,DB7,
     MOV1,Z0,DB1,Z17,SB7]
    [C,H_2C,H,C,O,O,CH_2,\]{6},\[,O,C,O,C,CH_2,H]
\stopchemical
```

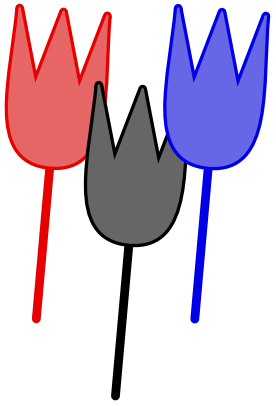


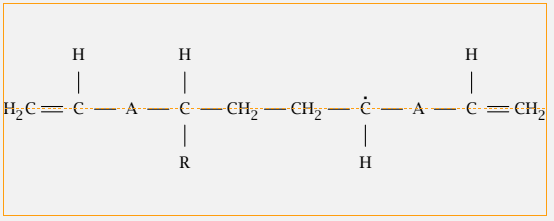

```
\startchemical[width=fit]
  \chemical
    [SIX,ROT2,B,C,R6,SUB1,
     ONE,Z0,Z3,SB15,DB3,
     MOV1,Z037,SB137,SUB1,
     SIX,ROT2,B,C,R3]
    [C,O,C,OCH_3,OCH_3]
\stopchemical
```



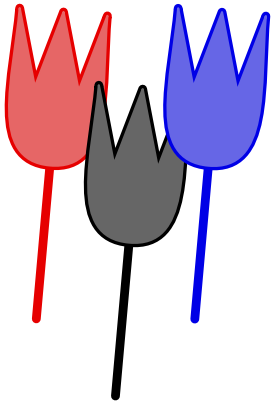


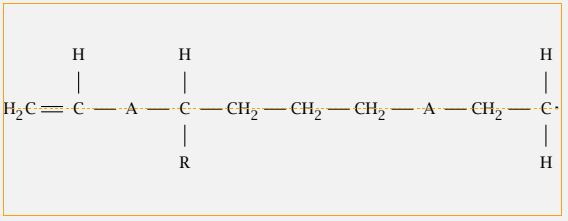

```
\startchemical[width=fit]
  \chemical
    [ONE,Z057,SB17,DB5,
     MOV1,Z0,SB1,
     MOV1,Z037,SB137,
     MOV1,Z037,SB37,ES1]
    [C,H_2C,H,A,C,R,H,C,H,H]
\stopchemical
```



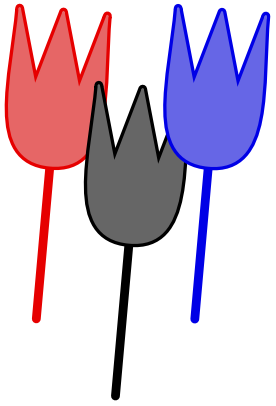



```
\startchemical[width=fit]
\chemical
  [ONE,Z057,SB17,DB5,
   MOV1,Z0,SB1,
   MOV1,Z037,SB137,
   MOV1,OFF1,Z0,2OFF1,SB1,
   MOV1,OFF1,Z0,2OFF1,SB1,
   MOV1,Z03,SB1,SB3,ES7,
   MOV1,Z0,SB1,
   MOV1,Z017,DB1,SB7]
  [C,H_2C,H,A,C,R,H,CH_2,CH_2,C,H,A,C,CH_2,H]
\stopchemical
```



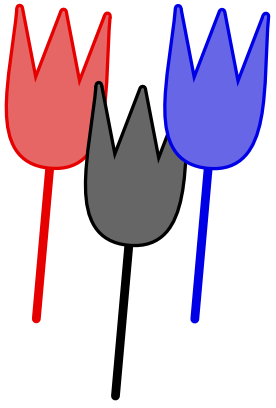


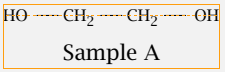
```
\startchemical[width=fit]
  \chemical
    [ONE,Z057,SB17,DB5,
     MOV1,Z0,SB1,
     MOV1,Z037,SB137,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,Z0,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,Z037,SB37,ES1]
    [C,H_2C,H,A,C,R,H,CH_2,CH_2,CH_2,A,CH_2,C,H,H]
\stopchemical
```



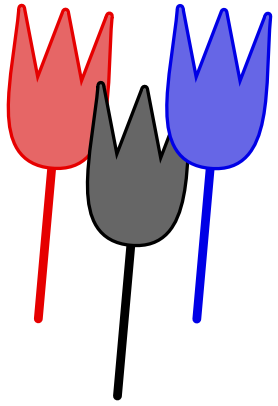
diethyleenglycol

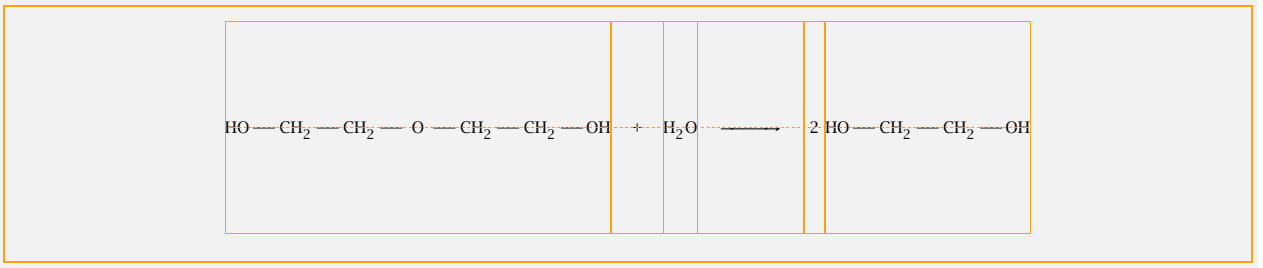
```
\startchemical[width=fit,bottom=1000]
  \chemical
    [ONE,Z0,OFF1,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,Z0,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,Z0]
    [HO,CH_2,CH_2,O,CH_2,CH_2,OH]
  \bottext{diethyleenglycol}
\stopchemical
```



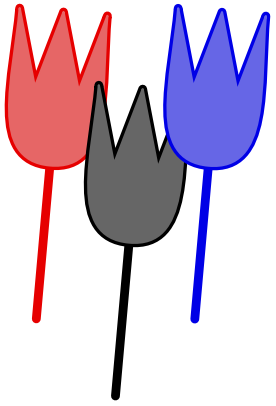



```
\startchemical[width=fit,bottom=1000]
\chemical
  [ONE,Z0,OFF1,SB1,
   MOV1,OFF1,Z0,2OFF1,SB1,
   MOV1,OFF1,Z0,2OFF1,SB1,
   MOV1,OFF1,Z0]
  [HO,CH_2,CH_2,OH]
\bottext{Sample A}
\stopchemical
```

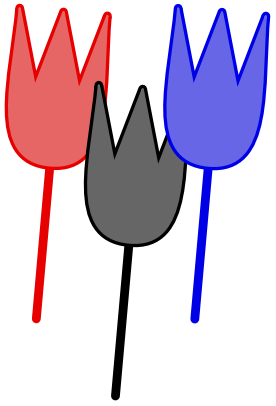


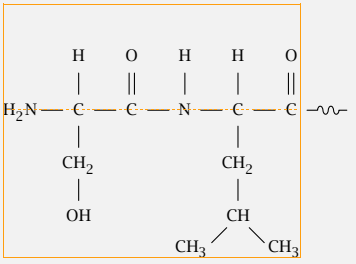



```
\startformula
  \setupchemical
    [width=fit]
  \startchemical
    \chemical
      [ONE,ZO,SB1,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,ZO,SB1,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,ZO]
      [HO,CH_2,CH_2,O,CH_2,CH_2,OH]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][H_2O]
  \stopchemical
```

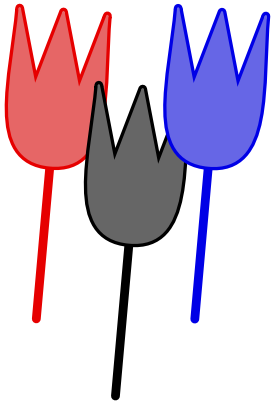


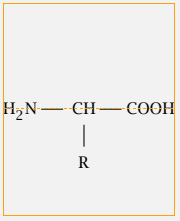
```
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO,SPACE][2]
  \stopchemical
  \startchemical
    \chemical
      [ONE,ZO,SB1,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,ZO]
      [HO,CH_2,CH_2,OH]
  \stopchemical
\stopformula
```



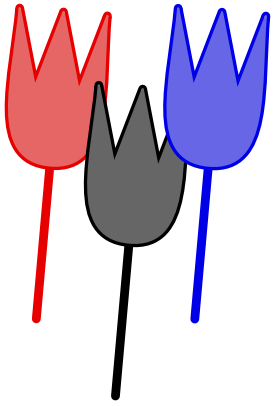


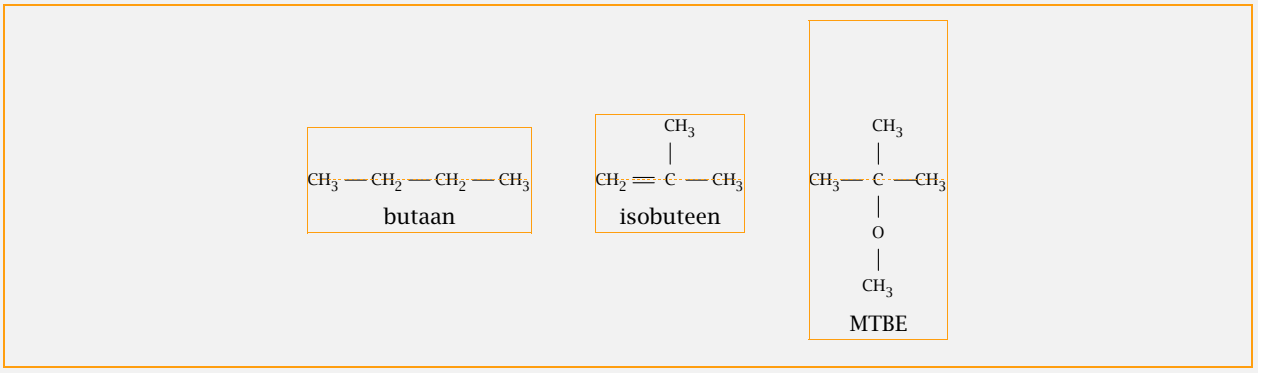

```
\startchemical[width=fit]
  \chemical
    [ONE,Z0,OFF1,SB1,
     MOV1,Z07,SB137,
   SAVE,
     MOV1,Z07,SB1,DB7,
     MOV1,Z07,SB17,
     MOV1,Z07,SB137,
   SAVE,
     MOV1,Z07,OE1,DB7,
   RESTORE,
     MOV3,SB3,Z0,
     MOV3,Z0,Z24,SB24,
   RESTORE,
     MOV3,,Z0,SB3,
     MOV3,Z0]
    [H_2N,C,H,C,O,N,H,C,H,C,O,
     CH_2,CH,CH_3,CH_3,CH_2,OH]
\stopchemical
```



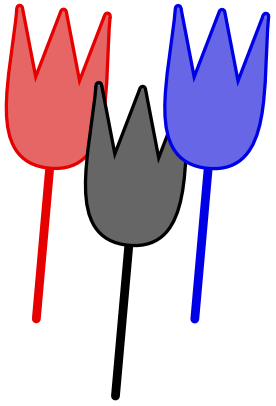



```
\startchemical[width=fit]
  \chemical
    [ONE,Z0,OFF1,SB1,
     MOV1,OFF1,Z0,OFF1,SB13,Z13]
    [H_2N,CH,COOH,R]
\stopchemical
```

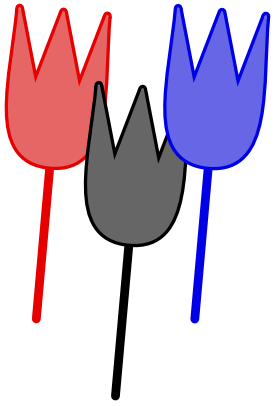


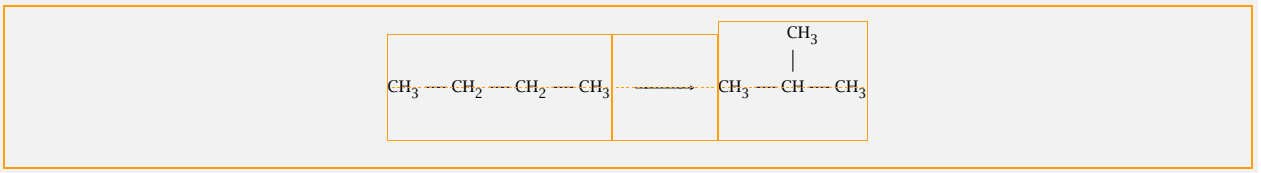



```
\startformula
  \startchemical[height=2000,width=fit]
    \chemical
      [ONE,Z0,OFF1,SB1,
       MOV1,OFF1,Z0,2OFF1,SB1,
       MOV1,OFF1,Z0,2OFF1,SB1,
       MOV1,OFF1,Z0]
      [CH_3,CH_2,CH_2,CH_3]
    \bottext{butaan}
  \stopchemical
  \quad\quad\quad
  \startchemical[height=2000,width=fit]
    \chemical
      [ONE,Z0,OFF1,DB1,
       MOV1,Z07,SB17,
       MOV1,OFF1,Z0]
      [CH_2,C,CH_3,CH_3]
```

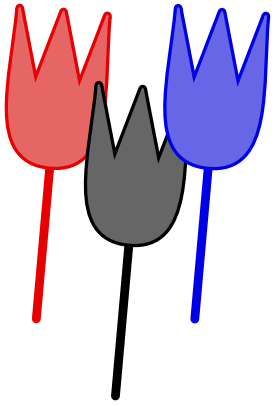


```
    \bottext{isobuteen}
  \stopchemical
  \quad\quad\quad
  \startchemical[height=6000,width=fit]
    \chemical
      [ONE,Z0,SB1,
       MOV1,Z0,Z7,SB137,
       SAVE,MOV1,Z0,RESTORE,
       MOV3,Z0,SB3,
       MOV3,Z0]
      [CH_3,C,CH_3,CH_3,O,CH_3]
    \bottext{MTBE}
  \stopchemical
\stopformula
```

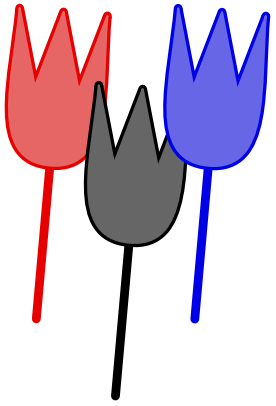


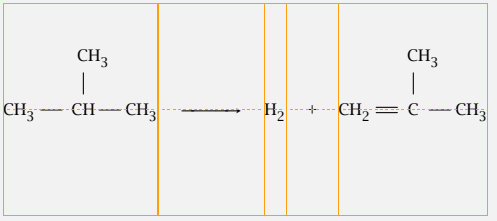



```
\startformula
  \setupchemical
    [height=2000,
     width=fit]
  \startchemical
    \chemical
      [ONE,ZO,OFF1,SB1,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,OFF1,ZO]
      [CH_3,CH_2,CH_2,CH_3]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical
      [ONE,ZO,OFF1,SB1,
       MOV1,ZO7,SB17,
       MOV1,OFF1,ZO]
      [CH_3,CH,CH_3,CH_3]
  \stopchemical
```

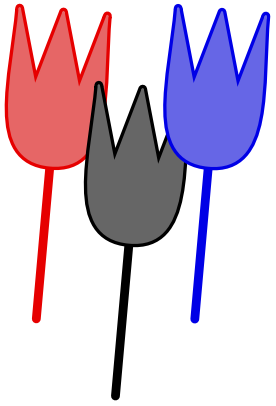


```
\stopformula
```

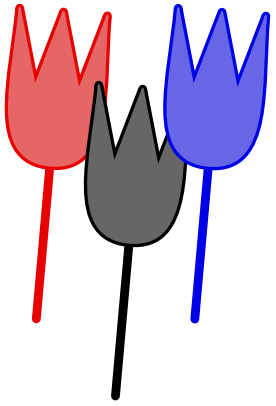


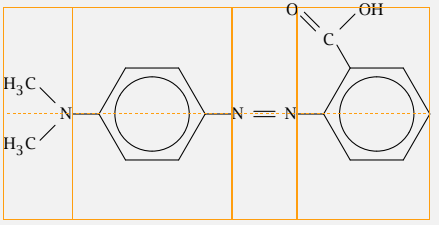



```
\startformula
  \setupchemical
    [width=fit]
  \startchemical
    \chemical
      [ONE,ZO,OFF1,SB1,
       MOV1,OFF1,ZO,OFF1,Z7,SB17,
       MOV1,OFF1,ZO]
      [CH_3,CH,CH_3,CH_3]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO,SPACE][H_2]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
```

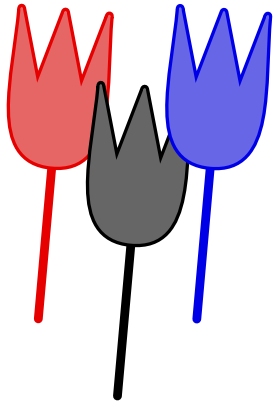


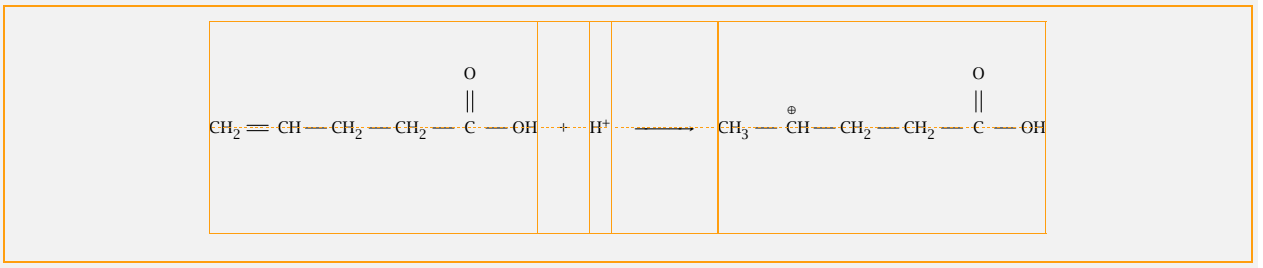
```
    \chemical
      [ONE,Z0,OFF1,DB1,
       MOV1,Z07,SB17,
       MOV1,OFF1,Z0]
      [CH_2,C,CH_3,CH_3]
  \stopchemical
\stopformula
```



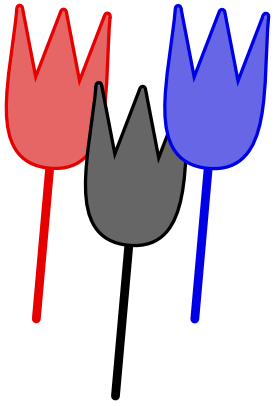



```
\startformula
  \setupchemical[width=fit]
  \startchemical
    \chemical[ONE,ZO46,SB46,][N,H_3C,H_3C]
  \stopchemical
  \startchemical
    \chemical[SIX,ROT2,B,C,R36]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO,DB1,MOV1,ZO][N,N]
  \stopchemical
  \startchemical
    \chemical
      [SIX,ROT2,B,C,R34,
       PB:RZ4,ONE,ZO,SB8,DB6,Z68,PE]
      [C,O,OH]
  \stopchemical
\stopformula
```

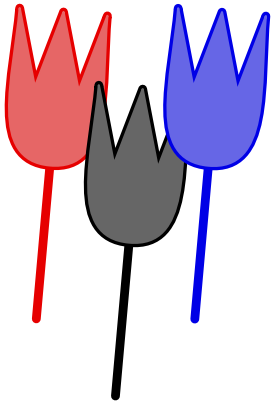


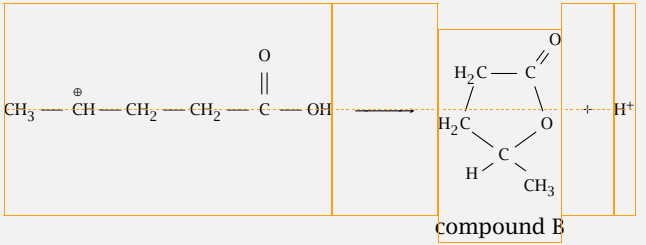



```
\startformula
  \setupchemical
    [width=fit]
  \startchemical
    \chemical
      [ONE,ZO,OFF1,DB1,
       MOV1,OFF1,ZO,OFF1,SB1,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,OFF1,ZO,2OFF1,SB1,
       MOV1,ZO,SB1,DB7,Z1,Z7]
      [CH_2,CH,CH_2,CH_2,C,OH,O]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][H^+]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
```

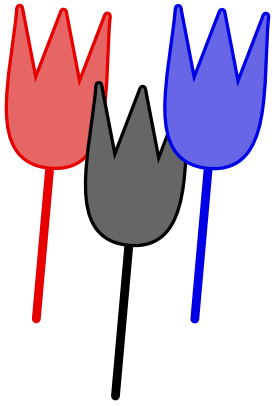


```
  \stopchemical
  \startchemical
    \chemical
      [ONE,Z0,OFF1,SB1,
       MOV1,OFF1,Z0,OFF1,SB1,
       MOV1,OFF1,Z0,2OFF1,SB1,
       MOV1,OFF1,Z0,2OFF1,SB1,
       MOV1,Z0,SB1,DB7,Z1,Z7]
      [CH_3,\T{\oplus}CH,CH_2,CH_2,C,OH,O]
  \stopchemical
\stopformula
```

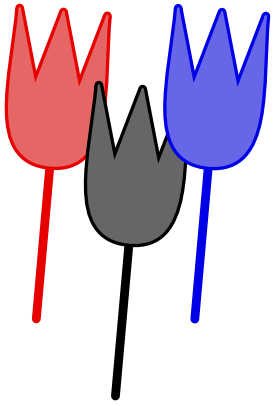


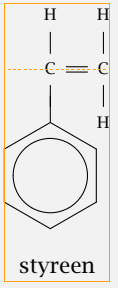



```
\startformula
  \setupchemical
    [width=fit]
  \startchemical
    \chemical
      [ONE,Z0,OFF1,SB1,
       MOV1,OFF1,Z0,OFF1,SB1,
       MOV1,OFF1,Z0,2OFF1,SB1,
       MOV1,OFF1,Z0,2OFF1,SB1,
       MOV1,Z0,SB1,DB7,Z1,Z7]
      [CH_3,\T{\oplus}CH,CH_2,CH_2,C,OH,O]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical[bottom=2500]
    \chemical
      [FIVE,ROT4,Z12345,SB,DR2,CRZ2,-SR4,+SR4,-RZ4,+RZ4]
      [H_2C~~,C,O,C,H_2C~~,O,CH_3,H]
```

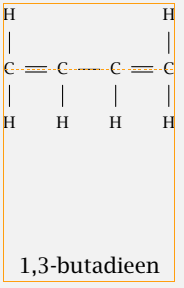


```
    \bottext{compound B}
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO][H^+]
  \stopchemical
\stopformula
```



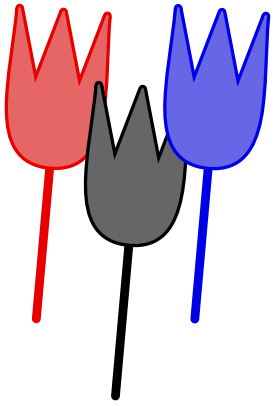


styreen

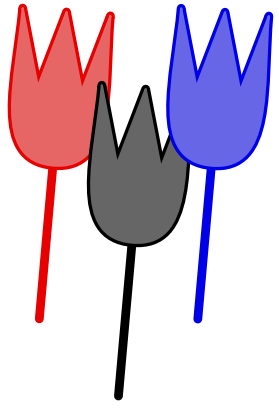


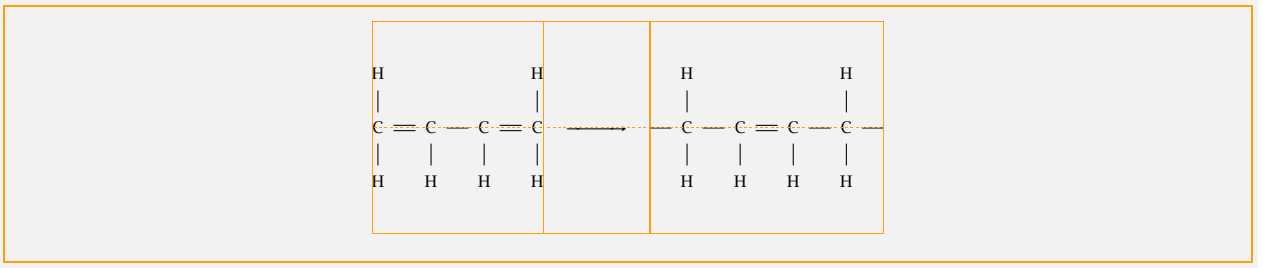
1,3-butadieen

```
\startformula
  \setupchemical
    [width=fit,
     bottom=4000]
  \startchemical
    \chemical
      [ONE,Z0,DB1,SB3,SB7,Z7,
       MOV1,Z0,SB3,SB7,Z3,Z7,
       MOV0,SUB2,SIX,B,R6,C]
      [C,H,C,H,H]
    \bottext{styreen}
  \stopchemical
  \quad\quad\quad\quad\quad\quad
  \startchemical
    \chemical
      [ONE,Z0,DB1,SB3,SB7,Z3,Z7,
       MOV1,Z0,SB1,SB3,Z3,
       MOV1,Z0,DB1,SB3,Z3,
```

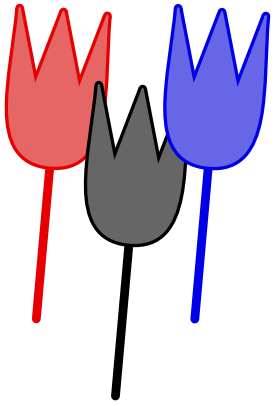


```
      MOV1,Z0,SB3,SB7,Z3,Z7]
     [C,H,H,C,H,C,H,C,H,H]
   \bottext{1,3-butadieen}
  \stopchemical
\stopformula
```

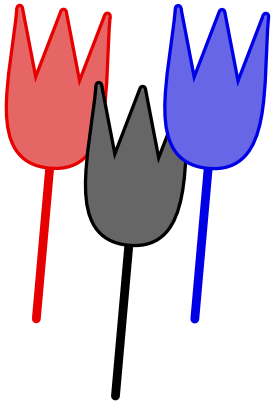


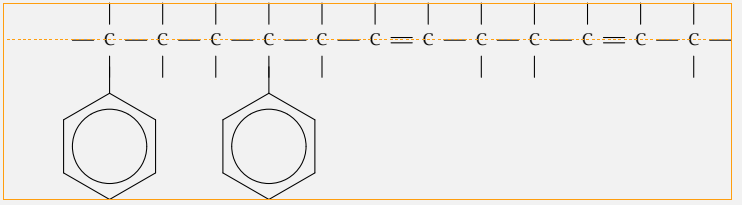


```
\startformula
  \setupchemical
    [width=fit]
  \startchemical
    \chemical
      [ONE,Z0,DB1,Z37,SB37,
       MOV1,Z03,SB13,
       MOV1,Z03,DB1,SB3,
       MOV1,Z037,SB37]
      [C,H,H,C,H,C,H,C,H,H]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical
      [ONE,Z037,SB1357,
       MOV1,Z03,DB1,SB3,
       MOV1,Z03,SB13,
       MOV1,Z037,SB137]
```

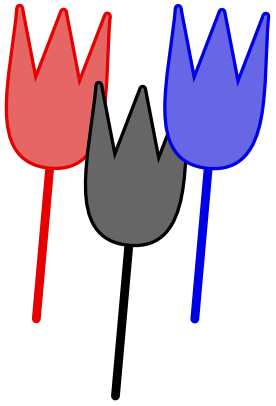


```
      [C,H,H,C,H,C,H,C,H,H]
  \stopchemical
\stopformula
```

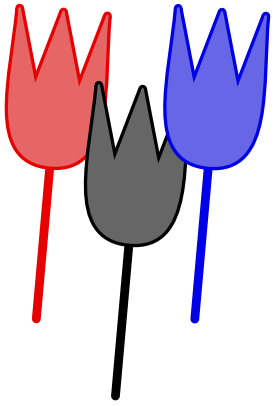


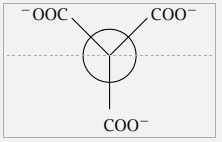


```
\setupchemical
  [height=fit]
\startchemical
  \chemical
    [ONE,ZO,SB1357,
   SAVE,
     SUB2,SIX,B,C,R6,
   RESTORE,
     MOV1,ZO,SB137,
     MOV1,ZO,SB137,
     MOV1,ZO,SB137,
   SAVE,
     SUB2,SIX,B,C,R6,
   RESTORE,
     MOV1,ZO,SB137,
     MOV1,ZO,DB1,SB7,
     MOV1,ZO,SB17,
     MOV1,ZO,SB137,
     MOV1,ZO,SB137,
     MOV1,ZO,DB1,SB7,
```

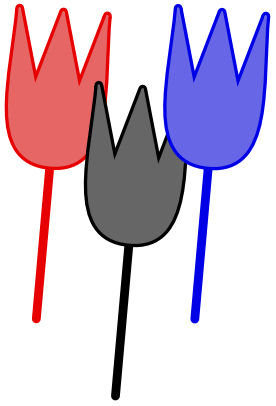


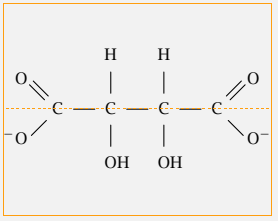
```
    MOV1,ZO,SB17,
    MOV1,ZO,SB137]
   [C,C,C,C,C,C,C,C,C,C,C,C]
\stopchemical
```





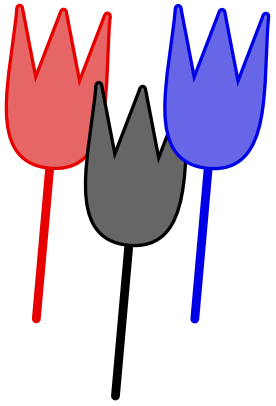

```
\setupchemical
  [height=fit]
\startchemical
  \chemical[NEWMAN,C,B123,Z123][COO^{-},COO^{-},^{-}OOC]
\stopchemical
```

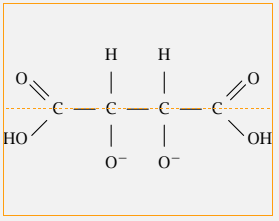




```
\setupchemical
  [width=fit]

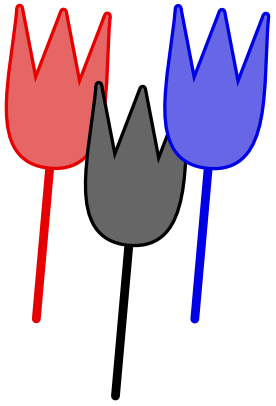
\startchemical
  \chemical
    [ONE,Z0,SB14,DB6,Z46,
     MOV1,Z0,SB137,Z37,
     MOV1,Z0,SB137,Z37,
     MOV1,Z0,SB2,DB8,Z28]
    [C,^-O,O,C,OH,H,C,OH,H,C,O^-,O]
\stopchemical
```

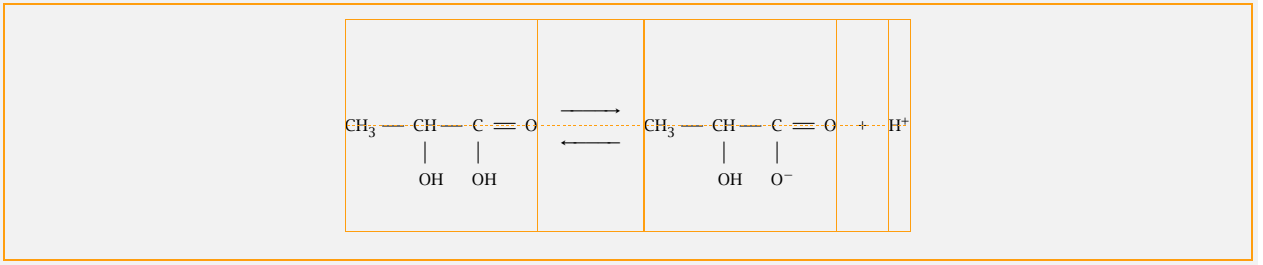




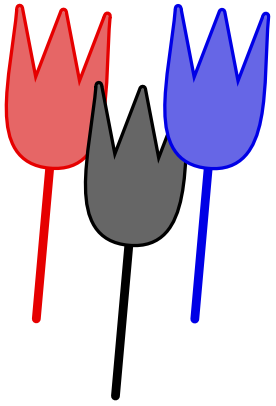

```
\setupchemical
  [width=fit]

\startchemical
  \chemical
    [ONE,Z0,SB14,DB6,Z46,
     MOV1,Z0,SB137,Z37,
     MOV1,Z0,SB137,Z37,
     MOV1,Z0,SB2,DB8,Z28]
    [C,HO,O,C,O^-,H,C,O^-,H,C,OH,O]
\stopchemical
```

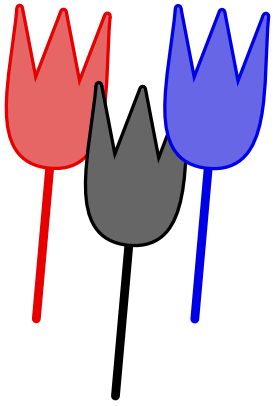


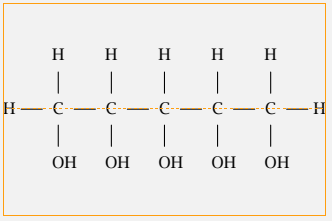



```
\startformula
  \setupchemical
    [width=fit]
  \startchemical
    \chemical
      [ONE,Z0,OFF1,SB1,
       MOV1,OFF1,Z0,OFF1,SB13,Z3,
       MOV1,Z0,DB1,SB3,Z3,
       MOV1,Z0]
      [CH_3,CH,OH,C,OH,O]
  \stopchemical
  \startchemical
    \chemical[SPACE,EQUILIBRIUM,SPACE]
  \stopchemical
  \startchemical
    \chemical
      [ONE,Z0,OFF1,SB1,
       MOV1,OFF1,Z0,OFF1,SB13,Z3,
       MOV1,Z0,DB1,SB3,Z3,
       MOV1,Z0]
```

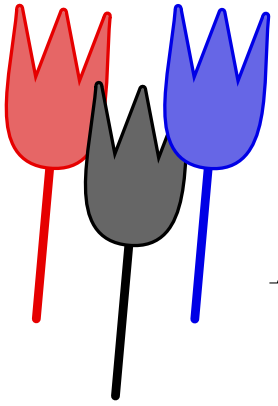


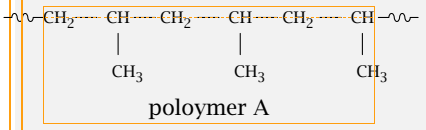
```
      [CH_3,CH,OH,C,O^-,O]
    \stopchemical
    \startchemical
      \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,OFF1,ZO][H^+]
  \stopchemical
\stopformula
```

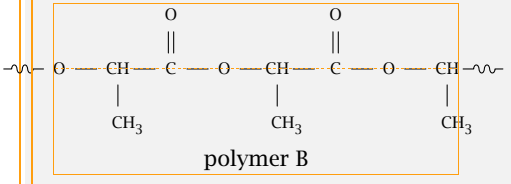




```
\startchemical[width=fit]
  \chemical
    [ONE,ZO357,SB1357,
     MOV1,ZO37,SB137,
     MOV1,ZO37,SB137,
     MOV1,ZO37,SB137,
     MOV1,ZO137,SB137]
    [C,OH,H,H,C,OH,H,C,OH,H,C,OH,H,C,H,OH,H]
\stopchemical
```

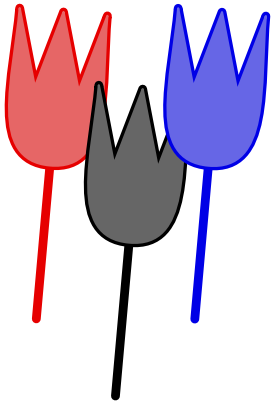






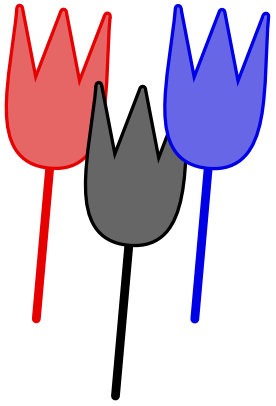

```
\setupchemical
  [width=fit,
   height=fit,
   bottom=2000]

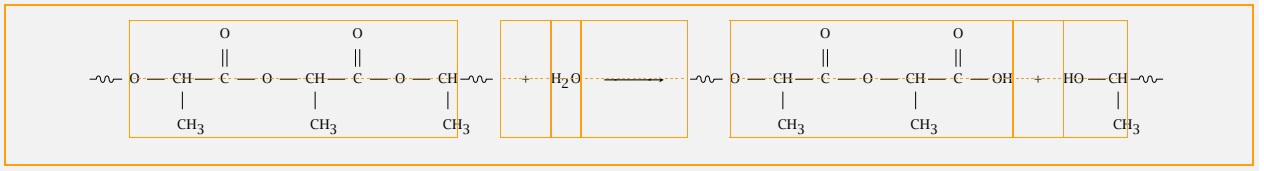
\startchemical
  \chemical
    [ONE,OFF1,Z0,OFF1,SB1,OE5,
     MOV1,OFF1,Z0,OFF1,SB1,Z3,SB3,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,OFF1,SB1,Z3,SB3,
     MOV1,OFF1,Z0,2OFF1,SB1,
     MOV1,OFF1,Z0,Z3,SB3,OE1]
    [CH_2,CH,CH_3,CH_2,CH,CH_3,CH_2,CH,CH_3]
  \bottext{poloymer A}
\stopchemical
```



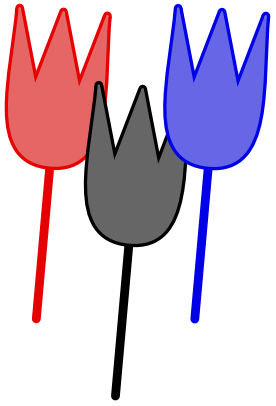
```
\blank[3*big]

\startchemical
  \chemical
    [ONE,Z0,SB1,OE5,
     MOV1,OFF1,Z0,OFF1,SB1,Z3,SB3,
     MOV1,Z0,SB1,Z7,DB7,
     MOV1,Z0,SB1,
     MOV1,Z0,SB1,Z3,SB3,
     MOV1,OFF1,Z0,OFF1,SB1,Z7,DB7,
     MOV1,Z0,SB1,
     MOV1,OFF1,Z0,Z3,SB3,OE1]
    [O,CH,CH_3,C,O,O,CH,CH_3,C,O,O,CH,CH_3]
  \bottext{polymer B}
\stopchemical
```

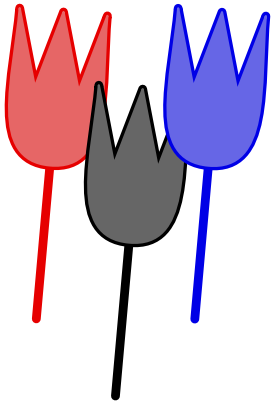


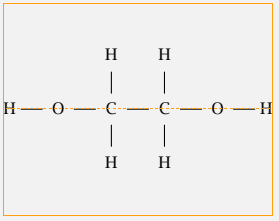


```
\startformula
  \setupchemical
    [width=fit,
     height=2750,
     scale=small,
     size=small]
  \startchemical
    \chemical
      [ONE,Z0,SB1,OE5,
       MOV1,OFF1,Z0,OFF1,SB1,Z3,SB3,
       MOV1,Z0,SB1,Z7,DB7,
       MOV1,Z0,SB1,
       MOV1,OFF1,Z0,OFF1,SB1,Z3,SB3,
       MOV1,Z0,SB1,Z7,DB7,
       MOV1,Z0,SB1,
       MOV1,OFF1,Z0,Z3,SB3,OE1]
      [O,CH,CH_3,C,O,O,CH,CH_3,C,O,O,CH,CH_3]
  \stopchemical
  \quad\quad
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
```

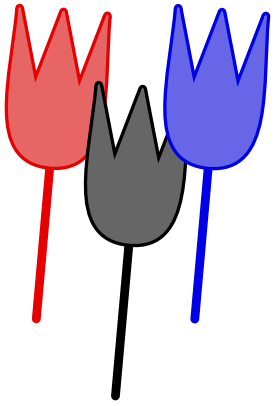


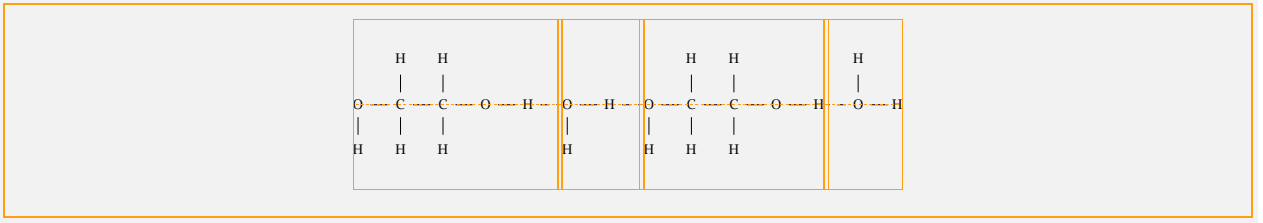
```
  \startchemical
    \chemical[ONE,OFF1,Z0][H_2O]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \quad\quad
  \startchemical
    \chemical
      [ONE,Z0,SB1,OE5,
       MOV1,OFF1,Z0,OFF1,SB1,Z3,SB3,
       MOV1,Z0,SB1,Z7,DB7,
       MOV1,Z0,SB1,
       MOV1,OFF1,Z0,OFF1,Z3,SB3,SB1,
       MOV1,Z0,SB1,DB7,Z17]
      [O,CH,CH_3,C,O,O,CH,CH_3,C,OH,O]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,OFF1,Z0,SB35,Z35,OE1][CH,CH_3,HO]
  \stopchemical
\stopformula
```



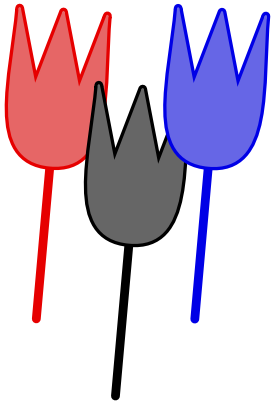



```
\startchemical[width=fit]
  \chemical
    [ONE,Z05,SB15,
     MOV1,Z037,SB137,
     MOV1,Z037,SB137,
     MOV1,Z01,SB1]
    [O,H,C,H,H,C,H,H,O,H]
\stopchemical
```

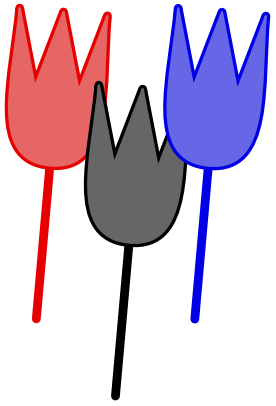


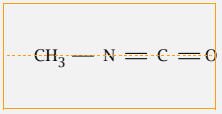


```
\startformula
  \setupchemical
    [width=fit,
     scale=small,
     size=small]
  \startchemical
    \chemical
      [ONE,Z03,SB13,
       MOV1,Z037,SB137,
       MOV1,Z037,SB137,
       MOV1,Z0,SB1,
       MOV1,Z0,SD1]
      [O,H,C,H,H,C,H,H,O,H]
  \stopchemical
  \startchemical[width=100]
    \chemical[SPACE]
  \stopchemical
  \startchemical
    \chemical
      [ONE,SB1,SB3,Z0,Z3,MOV1,Z0,SD1][O,H,H]
  \stopchemical
```

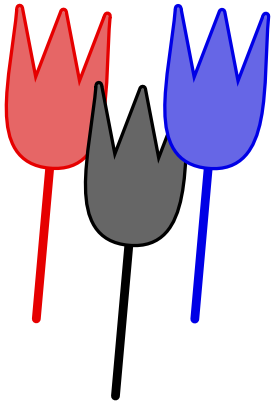


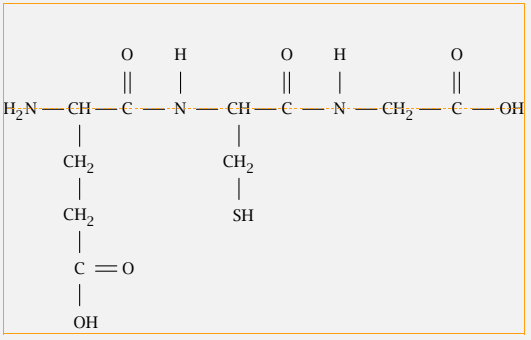
```
  \startchemical[width=100]
    \chemical[SPACE]
  \stopchemical
  \startchemical
    \chemical
      [ONE,ZO3,SB13,
       MOV1,ZO37,SB137,
       MOV1,ZO37,SB137,
       MOV1,ZO,SB1,
       MOV1,ZO]
      [O,H,C,H,H,C,H,H,O,H]
  \stopchemical
  \startchemical[width=100]
    \chemical[SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO17,SB17,SD5][O,H,H]
  \stopchemical
\stopformula
```



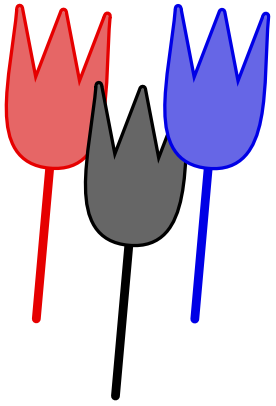


```
\startchemical[height=2000]
  \chemical
    [ONE,DB1,SB5,Z0,Z5,
     MOV1,DB1,Z0,Z1]
    [N,CH_3,C,O]
\stopchemical
```

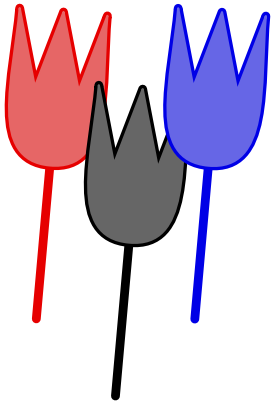


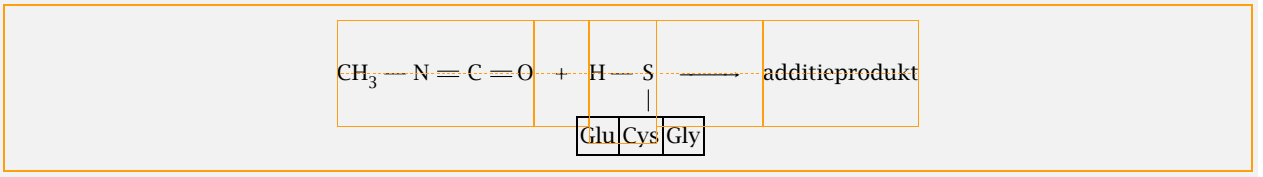


```
\startchemical
  [width=fit]
\chemical
   [ONE,OFF1,Z0,OFF1,Z5,SB135,
  SAVE,
    MOV3,Z0,SB3,
    MOV3,Z0,SB3,
    MOV3,Z013,DB1,SB3,
  RESTORE,
    MOV1,Z07,SB1,DB7,
    MOV1,Z07,SB17,
    MOV1,OFF1,Z0,OFF1,SB13,
  SAVE,
    MOV3,Z03,SB3,
  RESTORE,
    MOV1,Z07,SB1,DB7,
```

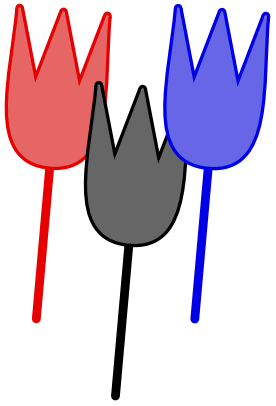


```
    MOV1,ZO7,SB17,
    MOV1,OFF1,ZO,2OFF1,SB1,
    MOV1,ZO17,SB1,DB7]
   [CH,H_2N,CH_2,CH_2,C,O,OH,C,O,N,H,CH,CH_2,
    SH,C,O,N,H,CH_2,C,OH,O]
\stopchemical
```

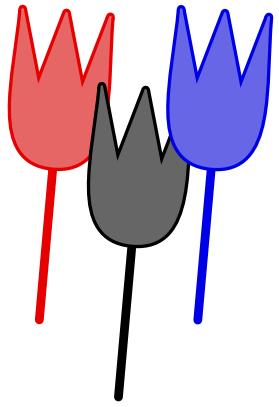


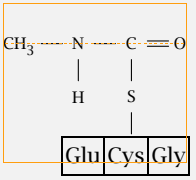



```
\def\Subs
   {\hbox
      {\setbox0=\hbox\framed{Glu\hairline Cys\hairline Gly}%
       \hskip-.5\wd0\lower.5\ht0\box0}}
\startformula
  \setupchemical
    [width=fit,
     height=2000,
     size=big]
  \startchemical
    \chemical
      [ONE,ZO5,DB1,SB5,MOV1,ZO1,DB1][N,CH_3,C,O]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical[ONE,ZO35,SB35][S,\Subs,H]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
```



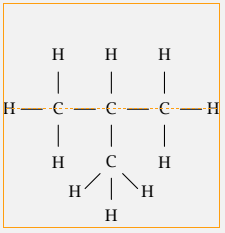
```
  \startchemical
    \chemical[ONE,ZO][additieprodukt]
  \stopchemical
\stopformula
```



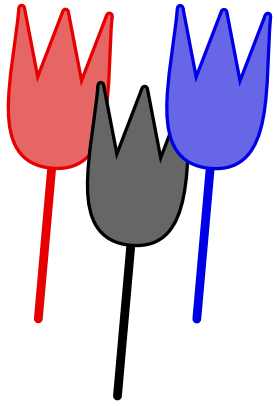


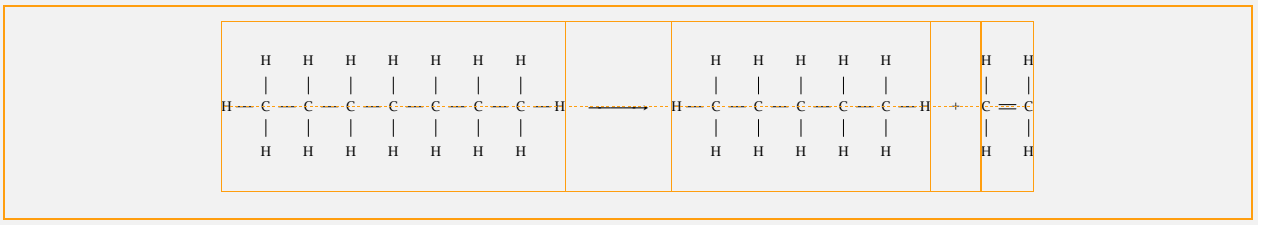

```
\def\Subs
  {\hbox
     {\setbox0=\hbox\framed{Glu\hairline Cys\hairline Gly}%
      \hskip-.5\wd0\lower.5\ht0\box0}}

\startformula
  \setupchemical
    [width=fit,
     height=1500]
  \startchemical
    \chemical
      [ONE,ZO35,SB135,
       MOV1,ZO1,DB1,SB3,
       MOV0,MOV1,MOV3,ZO3,SB3]
      [N,H,CH_3,C,O,S,\Subs]
  \stopchemical
\stopformula
```

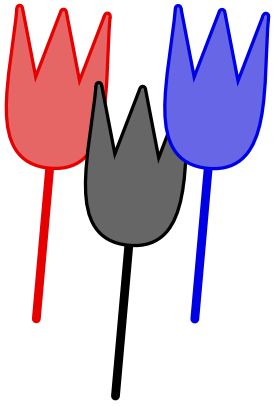


```
\startchemical[width=fit]
  \chemical
     [ONE,ZO357,SB1357,
      MOV1,ZO7,SB137,
      SAVE,MOV1,ZO137,SB137,RESTORE,
      MOV3,ZO234,SB234,]
     [C,H,H,H,C,H,C,H,H,H,C,H,H,H]
\stopchemical
```

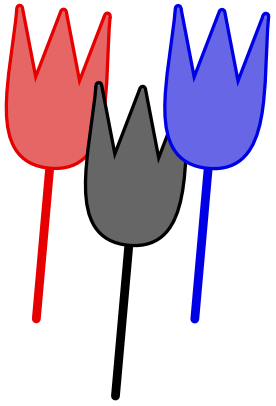


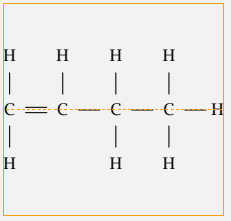


```
\startformula
  \setupchemical
    [width=fit,
     scale=small,
     size=small]
  \startchemical
    \chemical
      [ONE,Z0,SB1357,Z357,
       MOV1,Z0,SB137,Z37,
       MOV1,Z0,SB137,Z37,
       MOV1,Z0,SB137,Z37,
       MOV1,Z0,SB137,Z37,
       MOV1,Z0,SB137,Z37,
       MOV1,Z0,SB137,Z137,]
      [C,H,H,H,C,H,H,C,H,H,C,H,H,C,H,H,C,H,H,C,H,H,H]
  \stopchemical
  \startchemical
    \chemical[SPACE,GIVES,SPACE]
  \stopchemical
  \startchemical
    \chemical
```

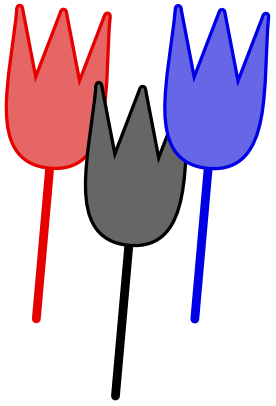


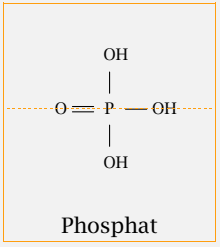
```
      [ONE,Z0,SB1357,Z357,
       MOV1,Z0,SB137,Z37,
       MOV1,Z0,SB137,Z37,
       MOV1,Z0,SB137,Z37,
       MOV1,Z0,SB137,Z137]
      [C,H,H,H,C,H,H,C,H,H,C,H,H,C,H,H,H]
  \stopchemical
  \startchemical
    \chemical[SPACE,PLUS,SPACE]
  \stopchemical
  \startchemical
    \chemical
      [ONE,Z0,DB1,SB37,Z37,
       MOV1,Z0,SB37,Z37]
      [C,H,H,C,H,H]
  \stopchemical
\stopformula
```





```
\startformula
  \startchemical[width=fit]
    \chemical
      [ONE,Z037,SB37,DB1,
       MOV1,Z07,SB17,
       MOV1,Z037,SB137,
       MOV1,Z0137,SB137]
      [C,H,H,C,H,C,H,H,C,H,H,H]
  \stopchemical
\stopformula
```

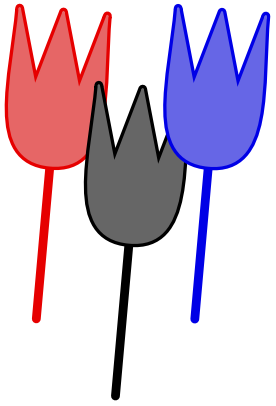


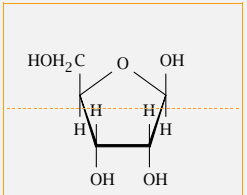


Phosphat

```
\definechemical[phosphat]
  {\chemical[ONE,SB137,DB5,ZO1357][P,OH,OH,O,OH]}

\startchemical[height=6500,top=2000,bottom=2500,width=4000]
  \chemical[phosphat]
  \bottext{Phosphat}
\stopchemical
```

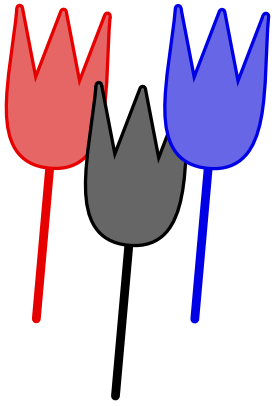


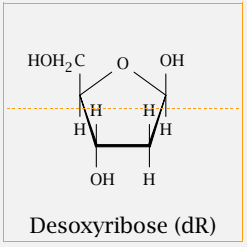


Ribose (R)

```
\definechemical[ribose]
  {\chemical[FIVE,FRONT,BB125,+SB3,-SB4,Z4][O]
   \chemical[FIVE,FRONT,+R1235,+RZ1235][H,H,\SR{HOH_2C},OH]
   \chemical[FIVE,FRONT,-R1235,-RZ1235][OH,OH,H,H]}

\startchemical[height=6500,top=2000,bottom=2500,width=4500]
  \chemical[ribose]
  \bottext{Ribose (R)}
\stopchemical
```

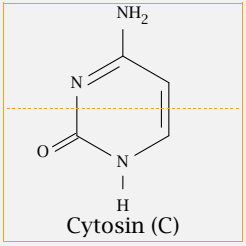




Desoxyribose (dR)

```
\definechemical[desoxyribose]
  {\chemical[FIVE,FRONT,BB125,+SB3,-SB4,Z4][O]
   \chemical[FIVE,FRONT,+R1235,+RZ1235][H,H,\SR{HOH_2C},OH]
   \chemical[FIVE,FRONT,-R1235,-RZ1235][H,OH,H,H]}

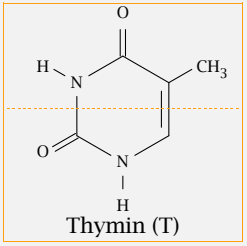
\startchemical[height=6500,top=2000,bottom=2500,width=4500]
  \chemical[desoxyribose]
  \bottext{Desoxyribose (dR)}
\stopchemical
```



Cytosin (C)

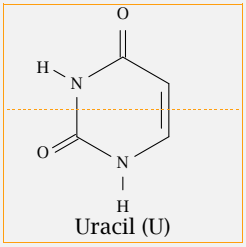
```
\definechemical[cytosin]
  {\chemical
     [SIX,B1,EB1,+SB2,-SB3,+SB4,-SB5,EB5,B6,Z3,Z5,SR3,ER4,R6,RZ3,RZ4,RZ6]
     [N,N,H,O,NH_2]}

\startchemical[height=6500,top=2000,bottom=2500,width=4500]
  \chemical[cytosin]
  \bottext{Cytosin (C)}
\stopchemical
```



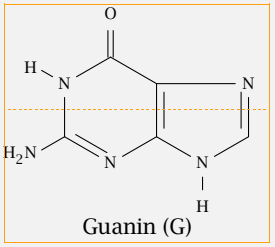

```
\definechemical[thymin]
  {\chemical
     [SIX,B1,EB1,+SB2,-SB3,+SB4,-SB5,B6,Z35,R1,SR3,ER4,SR5,ER6,RZ13456]
     [N,N,CH_3,H,O,H,O,]}

\startchemical[height=6500,top=2000,bottom=2500,width=4500]
  \chemical[thymin]
  \bottext{Thymin (T)}
\stopchemical
```




```
\definechemical[uracil]
  {\chemical
     [SIX,B1,EB1,+SB2,-SB3,+SB4,-SB5,B6,Z35,SR3,ER4,SR5,ER6,RZ3456]
     [N,N,H,O,H,O,]}

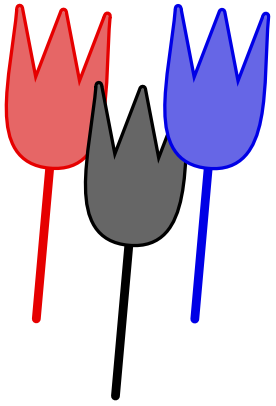
\startchemical[height=6500,top=2000,bottom=2500,width=4500]
  \chemical[uracil]
  \bottext{Uracil (U)}
\stopchemical
```

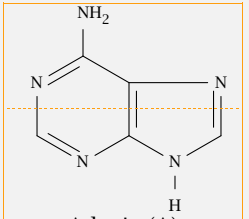


Guanin (G)

```
\definechemical[guanin]
  {\chemical[SIX,B6,B1,+SB2,-SB3,EB3,+SB4,-SB5,Z35][N,N]
   \chemical[SIX,R4,SR5,ER6,RZ456][\SR{H_2N},H,O]
   \chemical[SIX,MOV1,-SB1,EB1,+SB2,-SB3,EB4,-SS6,Z13,SR3,RZ3][N,N,H]}

\startchemical[height=6500,top=2000,bottom=2500,width=5000,left=2000]
  \chemical[guanin]
  \bottext{Guanin (G)}
\stopchemical
```

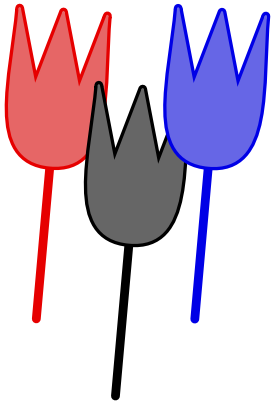


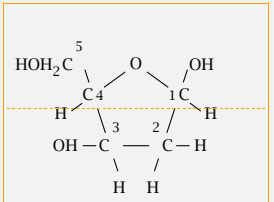


Adenin (A)

```
\definechemical[adenin]
  {\chemical[SIX,B6,B1,+SB2,-SB3,EB3,+SB4,-SB5,EB5,Z35][N,N]
   \chemical[SIX,R6,RZ6][\SL{NH_2}]
   \chemical[SIX,MOV1,-SB1,EB1,+SB2,-SB3,EB4,-SS6,Z13,SR3,RZ3][N,N,H]}

\startchemical[height=6500,top=2000,bottom=2500,width=4500,left=1500]
  \bottext{Adenin (A)}
  \chemical[adenin]
\stopchemical
```

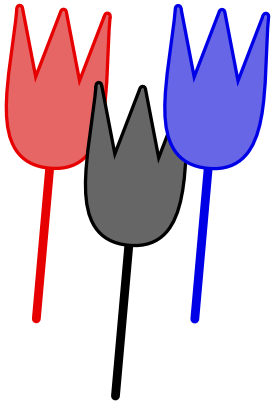




Desoxyribose (dR)

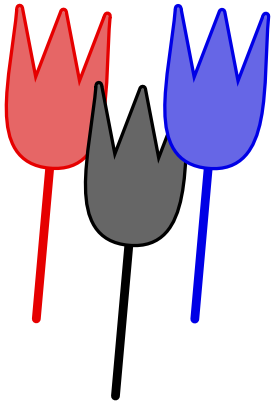
```
\definechemical[desoxyribose again]
  {\chemical[FIVE,ROT2,SB12345,Z12345][\TL{2}C,\TR{3}C,\R{4}C,O,\L{1}C]
   \chemical[FIVE,ROT2,+SR1235,+RZ1235][H,OH,\TR{5}{HOH_2C},H]
   \chemical[FIVE,ROT2,-SR1235,-RZ1235][H,H,H,OH]}

\startchemical[height=6500,top=2000,bottom=2500,width=5000]
  \chemical[desoxyribose again]
  \bottext{Desoxyribose (dR)}
\stopchemical
```



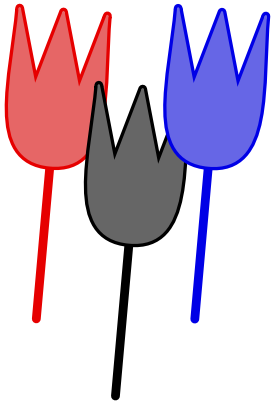
$$\mathrm{Na} \longrightarrow \mathrm{Na^{+}} + \mathrm{e^{-}} \quad] \times 2$$

```
\startformula
  \chemical{Na}
  \chemical{GIVES}
  \chemical{Na^{+}}
  \chemical{PLUS}
  \chemical{e^{-}} \quad \rbrack \times 2
\stopformula
```



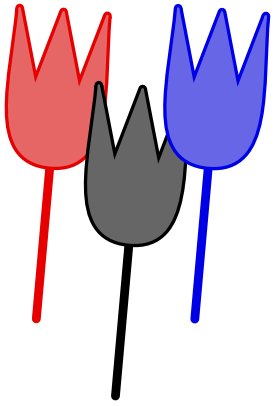
$$2\,NH_3 \;+\; 2\,e^- \;\longrightarrow\; 2\,NH_2^- \;+\; H_2$$

```
\startformula
  \chemical{2\,NH_{3}}
  \chemical{PLUS}
  \chemical{2\,e^{-}}
  \chemical{GIVES}
  \chemical{2\,NH_{2}^{-}}
  \chemical{PLUS}
  \chemical{H_{2}}
\stopformula
```



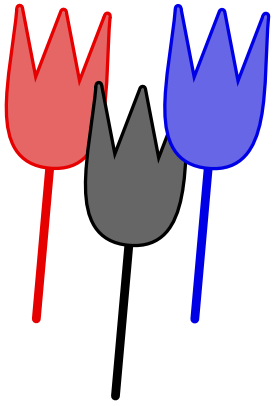
$$2\,\mathrm{Na} \;+\; 2\,\mathrm{NH_3} \;\longrightarrow\; 2\,\mathrm{Na^+} \;+\; 2\,\mathrm{NH_2^-} \;+\; \mathrm{H_2}$$

```
\startformula
  \chemical{2\,Na}
  \chemical{PLUS}
  \chemical{2\,NH_{3}}
  \chemical{GIVES}
  \chemical{2\,Na^{+}}
  \chemical{PLUS}
  \chemical{2\,NH_{2}^{-}}
  \chemical{PLUS}
  \chemical{H_{2}}
\stopformula
```



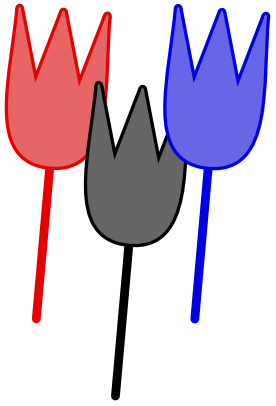
$$NH_2^- + H_2O \longrightarrow NH_3 + OH^-$$

```
\startformula
  \chemical{NH_{2}^{-}}
  \chemical{PLUS}
  \chemical{H_{2}O}
  \chemical{GIVES}
  \chemical{NH_{3}}
  \chemical{PLUS}
  \chemical{OH^{-}}
\stopformula
```



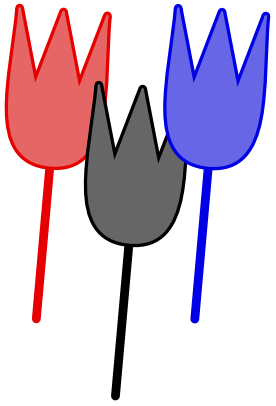
$$HF + H_2O \rightleftharpoons H_3O^+ + F^- \qquad \text{(equilibrium 1)}$$

```
\startformula
  \matrix
    {\chemical{HF}
     \quad
     \chemical{PLUS}
     \quad
     \chemical{H_{2}O}
     \quad
     \chemical{EQUILIBRIUM}
     \quad
     \chemical{H_{3}O^{+}}
     \quad
     \chemical{PLUS}
     \quad
     \chemical{F^{-}}
                                &
     \quad
     \rm (equilibrium~1)       \cr}
\stopformula
```



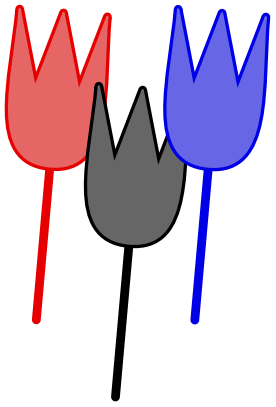
$$\mathrm{HF} \quad + \quad \mathrm{F^-} \quad \rightleftharpoons \quad \mathrm{HF_2^-} \qquad \text{(equilibrium 2)}$$

```
\startformula
  \matrix
    {\chemical{HF}
     \quad
     \chemical{PLUS}
     \quad
     \chemical{F^{-}}
     \quad
     \chemical{EQUILIBRIUM}
     \quad
     \chemical{HF_{2}^{-}}
                              &
     \quad
     \rm (equilibrium~2)      \cr}
\stopformula
```



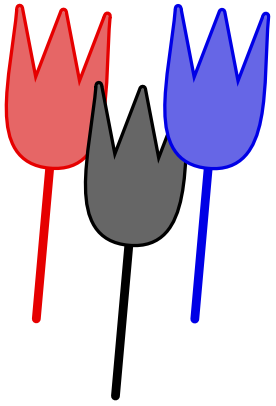
$$C_5H_{10}\ (g) \quad \rightleftharpoons \quad C_5H_8\ (g) \quad + \quad H_2\ (g)$$

```
\startformula
  \chemical{C_{5}H_{10}\quad(g)}
  \quad
  \chemical{EQUILIBRIUM}
  \quad
  \chemical{C_{5}H_{8}\quad(g)}
  \quad
  \chemical{PLUS}
  \quad
  \chemical{H_{2}\quad(g)}
\stopformula
```



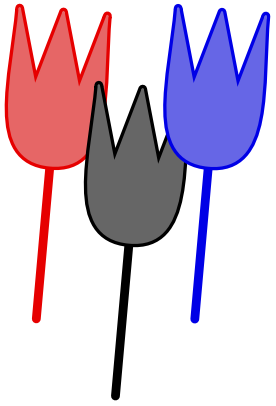
$$2\,S_2O_3^{2-} \quad \longrightarrow \quad S_2O_6^{2-} \quad + \quad 2\,e^-$$

```
\startformula
  \chemical{2\,S_{2}O_{3}^{2-}}
  \quad
  \chemical{GIVES}
  \quad
  \chemical{S_{2}O_{6}^{2-}}
  \quad
  \chemical{PLUS}
  \quad
  \chemical{2\,e^{-}}
\stopformula
```



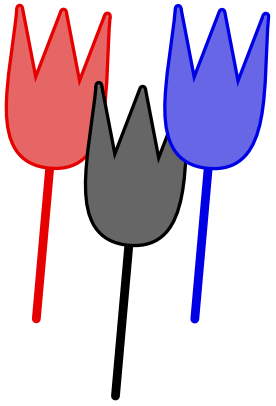
$$S_2O_3^{2-} + 5\,H_2O \longrightarrow 2\,SO_4^{2-} + 10\,H^+ + 8\,e^-$$

```
\startformula
  \chemical{S_{2}O_{3}^{2-}}
  \quad
  \chemical{PLUS}
  \quad
  \chemical{5\,H_{2}O}
  \quad
  \chemical{GIVES}
  \quad
  \chemical{2\,SO_{4}^{2-}}
  \quad
  \chemical{PLUS}
  \quad
  \chemical{10\,H^{+}}
  \quad
  \chemical{PLUS}{}
  \quad
  \chemical{8\,e^{-}}
\stopformula
```



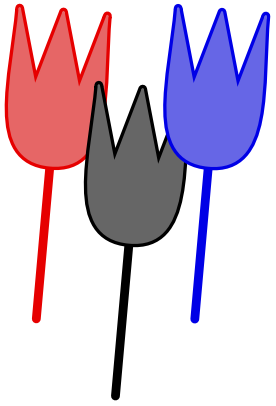
$$S_2O_3^{2-}\ (aq) + 2\,H^+\ (aq) \longrightarrow SO_2\ (aq) + S\ (s) + H_2O\ (l) \qquad \text{(reactie 1)}$$

```
\startformula
  \matrix
    {\chemical{S_{2}O_{3}^{2-}\quad(aq)}
     \quad
     \chemical{PLUS}
     \quad
     \chemical{2\,H^{+}\quad(aq)}
     \quad
     \chemical{GIVES}
     \quad
     \chemical{SO_{2}\quad(aq)}
     \quad
     \chemical{PLUS}
     \quad
     \chemical{S\quad(s)}
     \quad
     \chemical{PLUS}
     \quad
     \chemical{H_{2}O\quad(l)}
                                  &
     \quad
     \rm (reactie~1)              \cr}
\stopformula
```



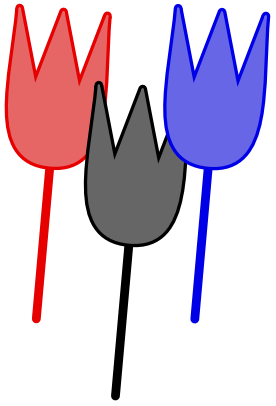
$$FeTiO_3\ (s) + H_2\ (g) \longrightarrow Fe\ (s) + TiO_2\ (s) + H_2O\ (g)$$

```
\startformula
  \chemical{FeTiO_3\quad(s)}
  \chemical{PLUS}
  \chemical{H_2\quad(g)}
  \chemical{GIVES}
  \chemical{Fe\quad(s)}
  \chemical{PLUS}
  \chemical{TiO_2\quad(s)}
  \chemical{PLUS}
  \chemical{H_2O\quad(g)}
\stopformula
```



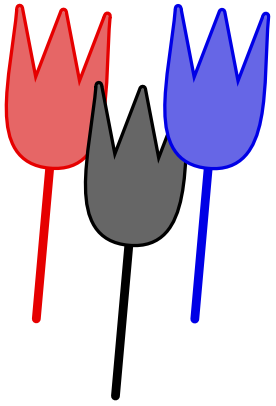
$$2\,NaN_3\quad(s)\quad\longrightarrow\quad 2\,Na\quad(s)\quad+\quad 3\,N_2\quad(g)$$

```
\startformula
 \chemical{2\,NaN_3\quad(s)}
 \chemical{GIVES}
 \chemical{2\,Na\quad(s)}
 \chemical{PLUS}
 \chemical{3\,N_2\quad(g)}
\stopformula
```



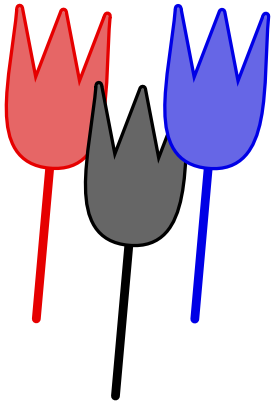
$$\mathrm{Mg} + 2\,\mathrm{CuCl} \longrightarrow \mathrm{Mg^{2+}} + 2\,\mathrm{Cu} + 2\,\mathrm{Cl^{-}}$$

```
\startformula
  \chemical{Mg}
  \chemical{PLUS}
  \chemical{2\,CuCl}
  \chemical{GIVES}
  \chemical{Mg^{2+}}
  \chemical{PLUS}
  \chemical{2\,Cu}
  \chemical{PLUS}
  \chemical{2\,Cl^-}
\stopformula
```

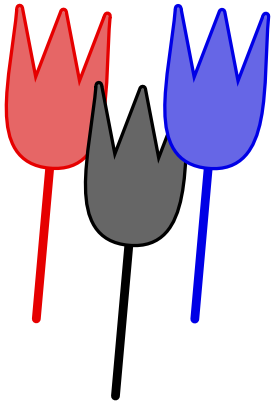


$$\mathrm{SO_4^{2-} + 4\,H_2O + 8\,e^- \rightleftharpoons S^{2-} + 8\,OH^-}$$
$$\mathrm{4\,Fe \rightleftharpoons 4\,Fe^{2+} + 8\,e^-}$$
$$\mathrm{4\,Fe + SO_4^{2-} + 4\,H_2O \rightleftharpoons S^{2-} + 4\,Fe^{2+} + 8\,OH^-}$$
$$\mathrm{Fe^{2+} + S^{2-} \longrightarrow FeS\downarrow}$$

```
\startformula
  \eqalign
    {\chemical{SO_4^{2-}}
     \chemical{PLUS}
     \chemical{4\,H_2O}
     \chemical{PLUS}
     \chemical{8\,e^-}
                                    &
     \chemical{EQUILIBRIUM}
     \chemical{S^{2-}}
     \chemical{PLUS}
     \chemical{8\,OH^-}
                                    \cr
     \chemical{4\,Fe}
                                    &
     \chemical{EQUILIBRIUM}
     \chemical{4\,Fe^{2+}}
     \chemical{PLUS}
     \chemical{8\,e^-}
                                    \cr
     \chemical{4\,Fe}
```



```
    \chemical{PLUS}
    \chemical{SO_4^{2-}}
    \chemical{PLUS}
    \chemical{4\,H_2O}
                                    &
    \chemical{EQUILIBRIUM}
    \chemical{S^{2-}}
    \chemical{PLUS}
    \chemical{4\,Fe^{2+}}
    \chemical{PLUS}
    \chemical{8\,OH^-}
                                    \cr
    \chemical{Fe^{2+}}
    \chemical{PLUS}
    \chemical{S^{2-}}
                                    &
    \chemical{GIVES}
    \chemical{FeS\downarrow}{dark}  \cr}
\stopformula
```



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