RMG-Py Reaction Families

1+2_Cycloaddition

1,2-Birad_to_alkene

$$^{1}R^{\cdot} - ^{2}R^{\cdot} \longrightarrow ^{1}R = ^{2}F$$

1,2_Insertion_CO

1,2_Insertion_carbene

1,2_NH3_elimination

1,2_shiftC

1,2_shiftS

$$10 - 29 - 38$$
 $29 - 38 - 10$

1,3_Insertion_CO2

1,3_Insertion_ROR

$$^{3}R-^{4}O-R + ^{1}R=^{2}R = ^{3}R-^{1}R-^{2}R-^{4}O-R$$

1,3_Insertion_RSR

$$^{3}R$$
 $-^{4}S$ $-^{R}$ + ^{1}R $=^{2}R$ ^{3}R $-^{1}R$ $-^{2}R$ $-^{4}S$ $-^{R}$

1,3_NH3_elimination

1,4_Cyclic_birad_scission

$$^{2}R$$
 ^{-1}R ^{4}R ^{-3}R ^{2}R ^{-1}R ^{4}R ^{-3}R

1,4_Linear_birad_scission

$${}^{1}R - {}^{2}R - {}^{3}R - {}^{4}R$$
 \longrightarrow ${}^{1}R = {}^{2}R + {}^{3}R = {}^{4}R$

2+2_cycloaddition_CCO

2+2_cycloaddition_CO

$2+2_cycloaddition_CS$

$2+2_cycloaddition_Cd$

6_membered_central_C-C_shift

Baeyer-Villiger_step1_cat

Baeyer-Villiger_step2

$$^{2}[C,H]$$
 ^{5}O
 ^{6}O
 ^{7}C
 ^{7}C
 ^{8}O
 ^{1}C
 ^{1}C
 $^{2}[C,H]$
 ^{3}O
 ^{4}H
 ^{8}O
 ^{8}O
 ^{1}C
 ^{4}C
 ^{8}O
 8

Baeyer-Villiger_step2_cat

$${}^{2}[C,H]$$
 ${}^{5}O$
 ${}^{6}O$
 ${}^{10}H$
 ${}^{9}O$
 ${}^{7}C$
 R
 ${}^{1}C$
 ${}^{1}C$

Bimolec_Hydroperoxide_Decomposition

$$R - \frac{10}{10} - \frac{20}{10} + R - \frac{40}{10} - \frac{3}{10} + R - \frac{20}{10} + \frac{20}$$

Birad_R_Recombination

$${}^{1}R^{'} + {}^{2}R : \longrightarrow {}^{1}R - {}^{2}R^{'}$$

Birad_recombination

${\tt CO_Disproportionation}$

$$^{1}R + ^{2}O = ^{3}C - ^{4}H = ^{1}R - ^{4}H + ^{2}O = ^{3}C$$

Concerted_Intra_Diels_alder_monocyclic_1,2_shiftH

$${}^{1}C = {}^{2}C - {}^{3}C = {}^{4}C - {}^{5}C = {}^{6}C - {}^{7}H$$

${\tt Cyclic_Ether_Formation}$

1
R 2 O $^{-3}$ OR \longrightarrow 1 R 2 O + 3 OF.

Cyclic_Thioether_Formation

 ${\tt Cyclopentadiene_scission}$

Diels_alder_addition

Disproportionation

$${}^{1}R + {}^{3}R - {}^{2}R - {}^{4}H \longrightarrow {}^{1}R - {}^{4}H + {}^{3}R = {}^{2}R$$

HO2_Elimination_from_PeroxyRadical

$$^{5}H$$
— ^{1}R — ^{2}R — ^{3}O — ^{4}O — ^{5}H + ^{1}R = ^{2}R

H_Abstraction

$$^{1}R$$
 ^{-2}H + ^{3}R \longrightarrow ^{1}R + ^{2}H ^{-3}R

Intra_2+2_cycloaddition_Cd

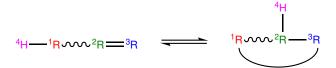
 ${\tt Intra_5_membered_conjugated_C=C_C=C_addition}$

Intra_Diels_alder_monocyclic

Intra_Disproportionation

$$^{1}R^{4}H^{-2}R^{-4}H$$
 $^{4}H^{-1}R^{3}R^{-2}R$

Intra_RH_Add_Endocyclic



Intra_RH_Add_Exocyclic

$$^{4}H$$
— ^{1}R ^{2}R = ^{3}R
 ^{1}R ^{2}R - ^{3}R - ^{4}H

${\tt Intra_R_Add_Endocyclic}$

$$^{1}\dot{R}$$
 ^{2}R ^{3}R ^{1}R ^{3}R

Intra_R_Add_ExoTetCyclic

1
R 2 R $^{-3}$ R $^{-3}$ R $^{-3}$ R $^{-1}$ R $^{-3}$

Intra_R_Add_Exo_scission

Intra_R_Add_Exocyclic

$$\frac{1}{R}$$
 $\frac{1}{R}$ $\frac{1}{R}$ $\frac{1}{R}$ $\frac{3}{R}$

Intra_Retro_Diels_alder_bicyclic

Intra_ene_reaction

Korcek_step1

Korcek_step1_cat

$Korcek_step2$

Peroxyl_Disproportionation

$$R - {}^{1}O - {}^{2}O \cdot + R - {}^{3}O - {}^{4}O \cdot \longrightarrow R - {}^{1}O \cdot + R - {}^{3}O \cdot + {}^{2}O - {}^{4}O$$

Peroxyl_Termination

$$^{4}H$$
 ^{-1}R ^{-2}O ^{-3}O $^{+}$ R ^{-5}O ^{-6}O ^{-6}O ^{-6}O

R_Addition_COm

R_Addition_CSm

$$||C = 3S^{+} + 2R = 2R - 1C$$

$R_Addition_MultipleBond$

$$^{2}R$$
 = ^{1}R + ^{3}R = ^{2}R - ^{1}R - ^{3}R

R_Recombination

Retroene

Singlet_Carbene_Intra_Disproportionation

Singlet_Val6_to_triplet

$$^{1}(O/S) = ^{2}(O/S)$$
 $^{1}(O/S) - ^{2}(O/S)$

SubstitutionS

$$R - {}^{1}S - {}^{2}R + {}^{3}R + {}^{2}R + {}^{2}R$$

Substitution_O

$$R - {}^{1}O - {}^{2}R + {}^{3}R^{i} = R - {}^{1}O - {}^{3}R + {}^{2}R^{i}$$

Surface_Abstraction

Surface_Abstraction_Single_vdW

Surface_Abstraction_vdW

Surface_Addition_Single_vdW

Surface_Adsorption_Abstraction_vdW

$$^{2}R$$
 $\stackrel{3}{=}$ ^{3}R ^{4}R $\stackrel{5}{=}$ ^{2}R ^{3}R ^{5}R ^{4}R ^{6}X

 ${\tt Surface_Adsorption_Bidentate}$

 ${\tt Surface_Adsorption_Dissociative}$

 $Surface_Adsorption_Double$

Surface_Adsorption_Single

Surface_Adsorption_vdW

Surface_Bidentate_Dissociation

Surface_Dissociation

Surface_Dissociation_Beta

$$^{2}R$$
 ^{3}R ^{4}R ^{2}R ^{3}R ^{4}R ^{1}X ^{5}X ^{1}X ^{5}X

Surface_Dissociation_Double_vdW

$$^{2}R$$
 $\xrightarrow{^{3}R}$ ^{2}R ^{3}R ^{3}R ^{4}X ^{4}X ^{1}X ^{4}X

Surface_Dissociation_vdW

Surface_DoubleBond_to_Bidentate

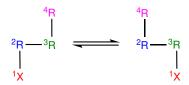
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Surface_Dual_Adsorption_vdW



Surface_EleyRideal_Addition_Multiple_Bond

Surface_Migration



Surface_vdW_to_Bidentate

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intra_H_migration

$$^{3}H$$
— ^{2}R ^{1}R \longrightarrow ^{2}R ^{3}H ^{3}H

intra_NO2_ONO_conversion

intra_OH_migration

 $\verb"intra_substitutionCS_cyclization"$

intra_substitutionCS_isomerization

 $intra_substitutionS_cyclization$

intra_substitutionS_isomerization

ketoenol

$$^{1}R = ^{2}R - ^{3}O - ^{4}R$$
 \longrightarrow $^{4}R - ^{1}R - ^{2}R = ^{3}O$

lone_electron_pair_bond