



- **→** CO2 + * -> CO2*
- → H2 + 2 * -> 2 H*
- → H2O + * -> H2O*

- → CO2* + H* -> COOH* + *
- ★ CO2* + OH* -> COOH* + O*
- * CO2* + H2O* -> COOH* + OH*
- --- CO2* + OH* -> HCOO* + O*
- --- CO2* + H2O* -> HCOO* + OH*
- --- COOH* + * -> CO* + OH*
- --- COOH* + * -> COH* + O*
- --- HCOO* + * -> O* + HCO*
- --- CO* + * -> C* + O*
- --- HCO* + * -> CO* + H*
- --- HCO* + * -> CH* + O*
- --- COH* + * -> CO* + H*
- --- COH* + * -> C* + OH*
- --- C* + H* -> CH* + *
- --- CH* + H* -> CH2* + *
- --- CH2* + H* -> CH3* + *
- --- HCO* + H* -> CH2O* + *
- --- HCO* + H* -> HCOH* + *
- --- COH* + H* -> HCOH* + *
- --- HCOH* + * -> CH* + OH*
- --- HCOH* + H* -> CH2OH* + *
- --- CH2OH* + * -> CH2* + OH*
- --- CH2OH* + H* -> CH3OH* + *
- --- CH2O* + H* -> CH2OH* + *
- --- CH2O* + * -> CH2* + O*
- --- CH2O* + H* -> CH3O* + *
- --- CH3O* + * -> CH3* + O*
- --- CH3O* + H* -> CH3OH* + *
- --- CH3OH* + * -> CH3* + OH*
- --- O* + H* -> OH* + *
- --- OH* + H* -> H2O* + *
- --- OH* + OH* -> O* + H2O*
- --- CH4 + 2 * -> CH3* + H* CH3OH + * -> CH3OH*

- **▼** CO2 + * <- CO2*
- H2 + 2 * <- 2 H*
- H2O + * <- H2O*</p>
- → CO2* + H* <- HCOO* + *
 </p>
- ★ CO2* + H* <- COOH* + *</p>
- ★ CO2* + OH* <- COOH* + O*
 </p>
- --- CO2* + H2O* <- COOH* + OH*
- --- CO2* + OH* <- HCOO* + O* --- CO2* + H2O* <- HCOO* + OH*
- --- COOH* + * <- CO* + OH*
- --- COOH* + * <- COH* + O*
- --- HCOO* + * <- O* + HCO*
- --- CO* + * <- C* + O*
- → HCO* + * <- CO* + H*</p>
- --- HCO* + * <- CH* + O*
- --- COH* + * <- CO* + H*
- --- COH* + * <- C* + OH*
- --- C* + H* <- CH* + *
- --- CH2* + H* <- CH3* + *
- + + + + + CH2O* + *
- --- HCO* + H* <- HCOH* + *
- --- COH* + H* <- HCOH* + *
- → HCOH* + * <- CH* + OH*</p>
- HCOH* + H* <- CH2OH* + *</p>
- --- CH2OH* + * <- CH2* + OH*
- --- CH2OH* + H* <- CH3OH* + *
- --- CH2O* + H* <- CH2OH* + *
- --- CH2O* + * <- CH2* + O*
- --- CH2O* + H* <- CH3O* + *
- --- CH3O* + * <- CH3* + O*
- --- CH3O* + H* <- CH3OH* + *
- --- CH3OH* + * <- CH3* + OH*
- --- O* + H* <- OH* + *
- --- OH* + H* <- H2O* + *
- --- OH* + OH* <- O* + H2O*
- --- CH4 + 2 * <- CH3* + H*
- --- CH3OH + * <- CH3OH*