```cpp
const simulation::Context::SpecieRates simulation::Context::calculateRatesOfChange(){
    const model& _model = _simulation._model;



    CPUGPU_TempArray<RATETYPE, NUM_REACTIONS> reaction_rates;


# 1 "../models/her_model_2014/reactions_list.hpp" 1
# 16 "../models/her_model_2014/reactions_list.hpp"
reaction_rates[mh1_synthesis] = _model.reaction_mh1_synthesis.active_rate(*this);
reaction_rates[mh7_synthesis] = _model.reaction_mh7_synthesis.active_rate(*this);
reaction_rates[mh13_synthesis] = _model.reaction_mh13_synthesis.active_rate(*this);
```