

$Q ::= ()$

$| a. | Q_2$

$| \text{new } x:T; Q$

$| \text{send } e_1(e_2); Q$

$| \text{rec } e(\text{pat}); Q$

$| \text{rec}! e(\text{pat}); Q$

$\frac{}{\Sigma, \Gamma \vdash ()} \text{ (IO)}$

$\frac{\Sigma, \Gamma \vdash Q_1 \quad \Sigma, \Gamma \vdash Q_2}{\Sigma, \Gamma \vdash Q_1 | Q_2}$

$\frac{\Gamma, x:T \vdash Q}{\Gamma \vdash \text{new } x:T, Q} \quad x \notin \Gamma$

~~$\Gamma \vdash e_1:T, \Gamma \vdash e_2:T \quad \Gamma \vdash T$~~

$\Gamma(x) = \text{Chan } T$

~~$\Gamma \vdash e_1: \text{Chan } T \quad \Gamma \vdash e_2:T$~~

~~$\vdash \text{pat}:T \rightarrow \Gamma$~~

$\Gamma \vdash \text{send } e_1(e_2); Q$

$\Gamma(x) = \text{Chan } T$

$\frac{\Gamma \vdash \text{pat}:T \rightsquigarrow \Gamma_2 \quad \Gamma \vdash e:T \quad \Gamma, \Gamma_2 \vdash Q}{\Gamma \vdash \text{rec } e(\text{pat}), Q}$

$\frac{\Gamma \vdash \text{rec } e(\text{pat}), Q}{\Gamma \vdash \text{rec}! e(\text{pat}), Q}$