Algorithm 4.8 (Hopcroft):

$P := [Q]_{E_0};$
$L := (\textbf{if } (|F| \leq |Q \setminus F|) \textbf{ then } \{F\} \textbf{ else } \{Q \setminus F\} \textbf{ fi}) \times V;$
$\{\text{invariant: } [Q]_E \sqsubseteq P \sqsubseteq [Q]_{E_0} \wedge L \subseteq (P \times V)$
$\quad \wedge (\forall\ Q_0, Q_1, a : Q_0 \in Q \wedge (Q_1, a) \in L : \neg \mathit{Splittable}(Q_0, Q_1, a)) \Rightarrow (P = [Q]_E)\}$
$\textbf{do } L \neq \emptyset \longrightarrow$
$\quad \textbf{let } Q_1, a : (Q_1, a) \in L;$
$\quad P_{old} := P;$
$\quad L := L \setminus \{(Q_1, a)\};$
$\quad \{\text{invariant: } [Q]_E \sqsubseteq P \sqsubseteq P_{old}\}$
$\quad \textbf{for } Q_0 : Q_0 \in P_{old} \wedge \mathit{Splittable}(Q_0, Q_1, a) \textbf{ do}$
$\qquad Q_0' := \{p : p \in Q_0 \wedge T(p, a) \in Q_1\};$
$\qquad P := P \setminus \{Q_0\} \cup \{Q_0 \setminus Q_0', Q_0'\};$
$\qquad \textbf{for } b : b \in V \textbf{ do}$
$\qquad\quad \textbf{if } (Q_0, b) \in L \longrightarrow L := L \setminus \{(Q_0, b)\} \cup \{(Q_0', b), (Q_0 \setminus Q_0', b)\}$
$\qquad\quad [\!] \ (Q_0, b) \notin L \longrightarrow$
$\qquad\qquad L := L \cup (\textbf{if } (|Q_0'| \leq |Q_0 \setminus Q_0'|) \textbf{ then } \{(Q_0', b)\} \textbf{ else } \{(Q_0 \setminus Q_0', b)\} \textbf{ fi})$
$\qquad\quad \textbf{fi}$
$\qquad \textbf{rof}$
$\quad \textbf{rof}$
$\quad \{(\forall\ Q_0 : Q_0 \in P : \neg \mathit{Splittable}(Q_0, Q_1, a))\}$
$\textbf{od}\{P = [Q]_E\}$