rate of conversion, $\dot{\xi}$

The rate of conversion for a reaction occurring in a closed system is defined as the time derivative of the extent of reaction:

$$\dot{\xi} = \frac{d\xi}{dt}$$

In view of the definition of extent of reaction it follows that with reference to any species in a reaction showing time-independent stoichiometry

$$\dot{\xi} = \frac{d\xi}{dt} = \frac{1}{\nu_i} \frac{dn_i}{dt}$$

where n_i is the amount of the species at any time and ν_i is its stoichiometric coefficient.

Source:
PAC, 1996, *68*, 149 *(A glossary of terms used in chemical kinetics, including reaction dynamics (IUPAC Recommendations 1996))* on page 180
PAC, 1992, *64*, 1569 *(Quantities and units for metabolic processes as a function of time (IUPAC Recommendations 1992))* on page 1573
Green Book, 2nd ed., p. 55
PAC, 1996, *68*, 957 *(Glossary of terms in quantities and units in Clinical Chemistry (IUPAC-IFCC Recommendations 1996))* on page 989