Mass Flowrate

@wikipedia

Amount of fluid mass passing through a certain area A per unit time:

(1) $$\dot{m}_A = \frac{dm}{dt}\Big|_A = j_m \cdot A$$

where

j_m	mass flux

SI unit	Metric unit	Oilfield units
kg/s	kg/s	lb/s

Mass flowrate is related to volumetric flowrate q_A and fluid density ρ_A as:

(2) $$\dot{m}_A = \rho_A \cdot q_A$$

In case of Volatile Oil Reservoir the connection with surface flowrates will be:

(3)	$\dot{m}_O = \rho_O \cdot q_O$
(4)	$\dot{m}_G = \rho_G \cdot q_G$
(5)	$\dot{m}_W = \rho_W \cdot q_W$

See also

Natural Science / Physics / Mechanics / Continuum mechanics / Fluid Mechanics

[Volumetric Flowrate] [Mass Flux]