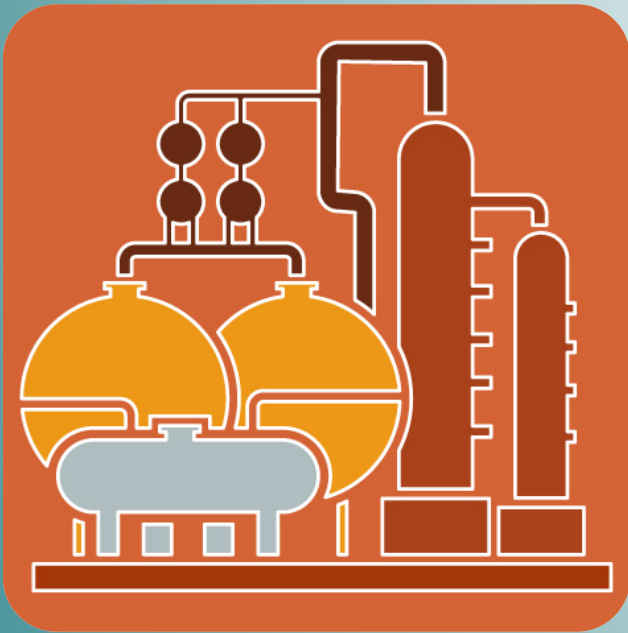


# Chemical Process Design / Diseño de Procesos Químicos

## Topic 4.4. Nomenclature. Mixer



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# 4.- Development of Linear Mass Balance (LMB) models

## Nomenclature

$\mu$   $m_i$

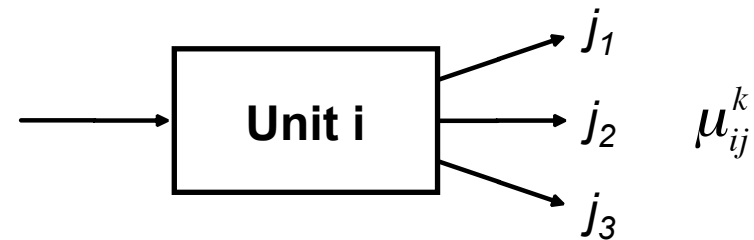
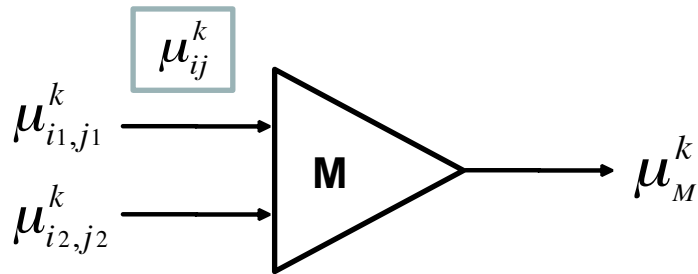
**F**: total flow.

**X**: concentration component **k**.

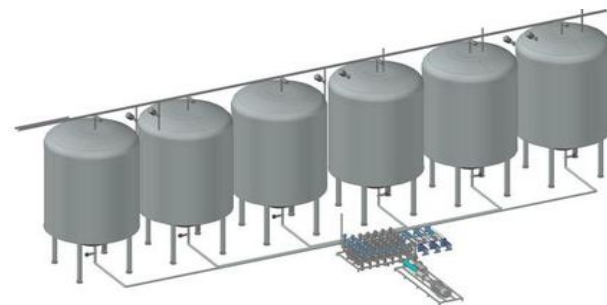
$\mu_{ij}^k$ : molar flowrate of component **k**, from unit **i** through output stream **j**.

If only ONE output  $\rightarrow$  suppress index **j**:  $\mu_i^k$

### 4.1. Mixer



$$\mu_M^k = \sum_j \mu_{ij}^k \quad \text{For all } k.$$



- This could be a vessel or part of a pipe, i.e.
- There are no degrees of freedom (d.f.).