



Homework for Monday

- 4-69 Please do the DOF on element balances
- 4.78 Workbook available, plus hint on web (work by hand <u>and then</u> using solver in Excel or Mathcad)



Class 14 Multiple Reactions, Multiple Units

- Conversion & Excess Reactant (Review)
- Extent of Reaction (Review)
- Recommendations & Cautions (repeat)
- Definitions
 - Recycle
 - Purge
- Examples





• Moles reacted for a given reaction (normalized)

 $\begin{array}{lll} \bullet & \text{Example: Carbon Tetrachloride Production} \\ & CS_2+3Cl_2 & \rightarrow S_2Cl_2+CCl_4 & \xi_1 \\ & CS_2+S_2Cl_2 & \rightarrow 6S+CCl_4 & \xi_2 \\ & 6S+3C & \rightarrow 3CS_2 & \xi_3 \end{array}$

- Write expressions for $n_{CCl4},\,n_{Cl2},\,\text{and}\,\,n_{CS2}$ in terms of ξ 's

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\begin{split} n_{\text{CCl4}} &= n_{\text{CCl4},0} + \xi_1 + \xi_2 \\ n_{\text{Cl2}} &= n_{\text{Cl2},0} - 3\xi_1 \end{split}
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 $n_{CS2} = n_{CS2,0} - \xi_1 - \xi_2 + 3 \xi_3$

















