PRODUCTION of WASTE LOCK® 770 Superabsorbent Polymer

Waste Lock® 770 (CAS # 09003-04-7) is a water-swellable super absorbent polymer chemically classified as “Sodium Polyacrylate, Cross-Linked”. It is a petrochemical that is produced from feedstocks that are derived from natural gas or crude oil.

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\text{Natural Gas} \quad \rightarrow \quad \text{Propylene} \quad \rightarrow \quad \text{Glacial Acrylic Acid (GAA) monomer} \quad \rightarrow
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\[
\begin{align*}
\text{GAA} &+ \\
\text{Water} &+ \\
\text{Cross-Linker (1/4 – 1/2%) } &\rightarrow \\
\text{Polymerization under UV Lights} &\rightarrow
\end{align*}
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\[
\text{Polyacrylic Acid, Cross-linked} \quad + \quad \text{NaOH} \quad \rightarrow \quad \text{Sodium Polyacrylate, Cross-linked + Water} \rightarrow
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\text{Drying (to lower water to <5%), grinding and sizing of particles} \quad \rightarrow \quad \text{WASTE LOCK® 770}
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