Ethanol is not used industrially as a precursor to ethyl halides, but the reactions are illustrative. Ethanol reacts with hydrogen halides to produce ethyl halides such as ethyl chloride and ethyl bromide via an S_N2 reaction:

$$CH_3CH_2OH + HCl \rightarrow CH_3CH_2Cl + H_2O$$

Now,

CH₃CH₂Cl+2Na + ClCH₃ → CH₃CH₂CH₃ + 2NaCl

Dehydrogenation with using chromium (III) oxide as a catalyst at 500 °C.

 $CH_3CH_2CH_3 \rightarrow CH_3CH=CH_2+H_2$

 $CH_3CH=CH_2 + H_2O \rightarrow CH_3CH(OH)CH_3$