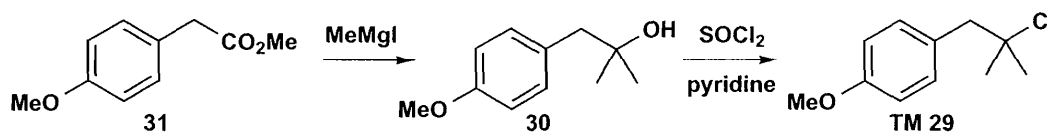The synthesis is straightforward but no yields are given in the paper.[6]
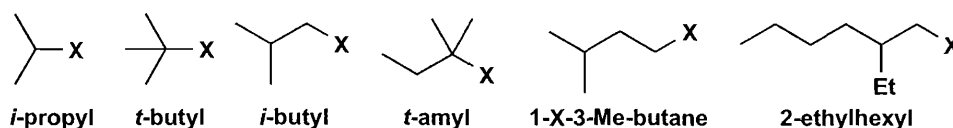

Available Compounds

A small selection of commonly used compounds but the Aldrich catalogue has over 34,000 entries.

Straight Chain Compounds: C_1 to about C_{10} and more in many cases
Alcohols, alkyl halides, acids, aldehydes, amines, nitriles, ketones.

Branched Chain Compounds: as above based on these skeletons (and others):

i-propyl   *t*-butyl   *i*-butyl   *t*-amyl   1-X-3-Me-butane   2-ethylhexyl

Cyclic Compounds: C_4 to C_{10} and others:
Ketones, alcohols, alkenes, halides, amines.

Aromatic Compounds: Very considerable variety—see catalogues.

Heterocyclic Compounds: Saturated and unsaturated in great variety.

Monomers for Polymers: Butadiene, isoprene, styrene
Acrylates, methacrylates, unsaturated nitriles, chlorides and aldehydes.

Summary of Guidelines for Good Disconnections

1. Make the synthesis as short as possible.
2. Use only disconnections corresponding to known reliable reactions.
3. Disconnect structural C–X bonds first and try to use two-group disconnections.
4. Disconnect C–C bonds using the FGs in the molecule.
   (a) Aim for the greatest simplification. If possible
       –disconnect near the middle of the molecule
       –disconnect at a branch point
       –disconnect rings from chains
   (b) Use symmetry (if any).
5. Use FGI to make disconnections easier.
6. Disconnect back to available starting materials or ones that can easily be made.

Only some of these guidelines may apply to any given target molecule and they may well contradict each other. Developing judgement in choosing good disconnections can come only with practice. There are many different approaches to any reasonably complicated target and no 'right' answer.