**Definition:**
In some cases, the starting materials are loaded onto the resin in one form, such as carboxylic acid, and cleaved in another form; a carboxamide for example. This is perfectly acceptable if the target compound requires the released function. (Peptides invariably contain a carboxylic acid or carboxamide.) However, the growth in interest in combinatorial libraries of low molecular weight non-peptides has elicited a need for new types of linker. These linkers show non-specific function after cleavage. Traceless linkers are so called because an examination of the final compound reveals no trace of the point of linkage to the solid phase.
The oldest definition for „traceless“ traces back to the import of a Hydrogenatom instead of the previous linker. This definition has been extended by the formation of alkenes by ring-closing-methathesis, cleavage of ethers, alcohols, aldehydes, ketones and carboxacides. The Hydrogenatom possess very low biological and chemical activity. Therefore the formation of a C-H group at the linkingsite of the resin is the most attractive concept for a traceless linker.

Some examples for traceless linkers:

1. Traceless Germanium Linker
   and Traceless Silicium Linker (Si instead of Ge)

2. Traceless Phenylhydrazide Linker

**Structures:**

1. Acid-cleavable germanium-linker

   ![Acid-cleavable germanium-linker](image)

2. Acid-cleavable silicium-linker

   ![Acid-cleavable silicium-linker](image)

3. Traceless oxidation labile Phenylhydrazide Linker

   ![Traceless oxidation labile Phenylhydrazide Linker](image)
Publications:

Plunkett, M. J.; Ellman, J. A.
*J. Org. Chem.*; (Article); 1997; 62(9); 2885-2893.