



Derivatization Reagents

- Reagents available for acylation, alkylation, and silylation.
- Packaged in 10 x 1 g vials or 25 g vials.
- High purity for accurate results.

Silylation Derivatization Reagents

- Replaces active hydrogen, reducing polarity and making the compounds more volatile.
- Increases stability of derivatives.

Silylation is the most widely used derivatization procedure for sample analysis by GC. In silylation, an active hydrogen is replaced by an alkylsilyl group such as trimethylsilyl (TMS) or *tert*-butyldimethylsilyl (*tert*-BDMS). Silyl derivatives are more volatile, less polar, and more thermally stable. As a result, GC separation is improved and detection is enhanced.

Both TMS and *tert*-BDMS reagents are suitable for a wide variety of compounds and can be used for many GC applications. Note that silylation reagents are generally moisture sensitive and must be sealed to prevent deactivation.

Compound	CAS#	cat.#	price
MSTFA (N-methyl-N-trimethylsilyltrifluoroacetamide)			
10-pk. (10x1g)	24589-78-4	35600	
25g vial	24589-78-4	35601	
MSTFA w/1% TMCS (N-methyl-N-trimethylsilyltrifluoroacetamide w/1% trimethylchlorosilane)			
10-pk. (10x1g)	24589-78-4	35602	
25g vial	24589-78-4	35603	
BSTFA (N,O-bis[trimethylsilyl]trifluoroacetamide)			
10-pk. (10x1g)	25561-30-2	35604	
25g vial	25561-30-2	35605	
BSTFA w/1% TMCS (N,O-bis[trimethylsilyl]trifluoroacetamide] w/1% trimethylchlorosilane)			
10-pk. (10x1g)	25561-30-2	35606	
25g vial	25561-30-2	35607	
MTBSTFA w/1% TBDMCS (N-methyl-N[<i>tert</i> -butyldimethylsilyl] trifluoroacetamide] w/1% <i>tert</i> -butyldimethylchlorosilane)			
10-pk. (10x1g)	77377-52-7	35608	
25g vial	77377-52-7	35610	
TMCS (trimethylchlorosilane)			
10-pk. (10x1g)	75-77-4	35611	
25g vial	75-77-4	35612	

Acylation Derivatization Reagents

- Most commonly used for electron capture detection.
- React with alcohols, amines and phenols.
- Frequently used for drugs of abuse confirmation.

Acylation reagents offer the same types of advantages available from silylation reagents: creating less polar, more volatile derivatives. In comparison to silylating reagents, the acylating reagents can more readily target highly polar multi-functional compounds, such as carbohydrates and amino acids. In addition, acylating reagents offer the distinct advantage of introducing electron-capturing groups, thus enhancing detectability during analysis.

Compound	CAS#	cat.#	price
MBTFA (N-methyl-bis-trifluoroacetamide)			
10-pk. (10x1g)	685-27-8	35616	
25g vial	685-27-8	35617	
TFAA (trifluoroacetic acid anhydride)			
10-pk. (10x1g)	407-25-0	35618	
25g vial	407-25-0	35619	
PFAA (pentafluoropropionic acid anhydride)			
10-pk. (10x1g)	356-42-3	35620	
25g vial	356-42-3	35621	
HFAA (heptafluorobutyric acid anhydride)			
10-pk. (10x1g)	336-59-4	35622	
25g vial	336-59-4	35623	
PFPOH (pentafluoropropanol)			
10-pk. (10x1g)	422-05-9	35624	
25g vial	422-05-9	35625	

Alkylation Derivatization Reagents

- Adds alkyl groups to functional hydrogens (H).
- Decreases polarity on compounds containing acidic hydrogens, i.e., phenols, carboxylic acids.
- Forms an ester.

Alkylation reagents reduce molecular polarity by replacing active hydrogens, such as carboxylic acids and phenols. Alkylation reagents can be used alone to form esters and amides or they can be used in conjunction with acylation or silylation reagents. A two-step approach is commonly used in the derivatization of amino acids, where multiple functional groups of these compounds may necessitate protection during derivatization.

Esterification is the reaction of an acid with an alcohol in the presence of a catalyst. It is the most popular method of alkylation due to the availability of reagents and ease of use. Alkyl esters are stable, and can be formed quickly and quantitatively. Retention of the derivative can be varied by altering the length of the substituted alkyl group. In addition to the formation of simple esters, alkylation reagents can be used in extraction procedures where biological matrices are present.

Compound	CAS#	cat.#	price
TMPAH			
10-pk. (10x1g)	1899-02-1	35614	
25g vial	1899-02-1	35615	