

GC DERIVATIZATION REAGENTS

- Increase sample volatility
- Improve selectivity and efficiency
- Enhance detectability

GC derivatization is frequently used to simplify complex separation problems. For GC analysis, this has a number of benefits including those detailed above. Hichrom offers several ranges of GC derivatization reagents including products from Regis Technologies, Thermo Scientific and Macherey-Nagel. Ordering information is provided on the following pages for selected products from Regis Technologies and Thermo Scientific. Please contact us for details of any product not listed and ordering information on any Macherey-Nagel GC derivatization reagent.

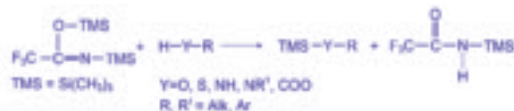
Regis Technologies GC Derivatization Reagents

A wide range of reagents is available from Regis Technologies for silylation, acylation or alkylation of reactive functional groups. A selection of these reagents is discussed below.

BSTFA-Regisil®/BSTFA +TMCS (1%, 10%)

[N,O-Bis(trimethylsilyl)trifluoroacetamide]

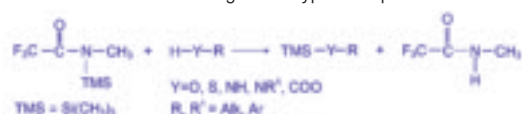
- Highly volatile and stable products
- Excellent solubility and solvency
- Addition of TMCS catalyzes reactions of hindered functional groups and other difficult functionalities



MSTFA

[N-Methyltrimethylsilyltrifluoroacetamide]

- Most volatile of the TMS-acetamides
- Useful in analysis of volatile trace materials where derivatives elute near reagent or byproduct peak



MTBSTFA/MTBSTFA + 1% t-BDMCS

[N-Methyl-N-(t-butyl(dimethylsilyl)trifluoroacetamide)]

- Derivatives are 10⁴ times more stable to hydrolysis than corresponding TMS derivatives
- Produce easily interpreted mass spectra for GC-MS
- Addition of t-BDMCS catalyzes reactions of hindered alcohols and amines



TMSI

[Trimethylsilylimidazole]

- Potent, selective TMS donor that reacts with hydroxyls but not amines or amides
- Derivatizes wet sugar samples, hindered hydroxyl groups in steroids, and amino acids in fluorinated acylation reagents



PFPA

[Pentafluoropropionic anhydride]

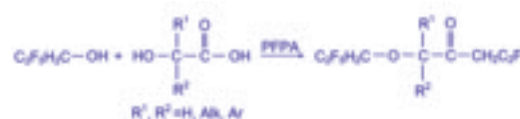
- Most commonly used for ECD
- Reacts with alcohols, amines and phenols
- Frequently used for drugs of abuse confirmation



PFPOH

[2,2,3,3,3-Pentafluoropropanol]

- Used in combination with PFPA to make ECD derivatives of the most common functional groups, especially polyfunctional bio-organic compounds

Ordering Information - Regis GC Derivatization Reagents¹

Reagent	Package Size ²			
	10 x 1g (ampoule)	5g	4 x 5g	25g
Regisil RC-1 (BSTFA)	270111	-	270112	270113
Regisil RC-2 (BSTFA + 1% TMCS)	270121	-	270122	270123
Regisil RC-3 (BSTFA + 10% TMCS)	270131	-	270132	270133
MSTFA	270590	-	-	270593
MTBSTFA	-	-	-	270243
MTBSTFA + t-BDMCS	270144	-	-	270143
TMSI	270401	270402	-	270403
PFPA	640110	-	-	640113
PFPOH	-	270815	-	270816

¹ Other reagents available – please enquire ² Other package sizes available – please enquire

Regis also offers a wide range of additional derivatization and other reagents. Please contact Hichrom for information on reagents not listed here.

Thermo Scientific GC Derivatization Reagents

Thermo Scientific produces a range of derivatization reagents for silylation, acylation and alkylation. A selection of these is listed below.

Thermo Scientific GC Derivatization Reagents¹

Reagent	Application
Silylation Reagents	
BSTFA + TMCS	Fatty acid amides, slightly hindered hydroxyls and other compounds
MSTFA	TMS derivatives of small molecules
MSTFA + 1% TMCS	Amides, secondary amines and hindered hydroxyls not derivatized by MSTFA alone
BSA	Alcohols, amines, amides, carboxylic acids, phenols, steroids, biogenic amines, alkaloids
MTBSTFA	Derivatizes hydroxyl, carboxyl, thiol and primary and secondary amines
TMSI	Alcohols, phenols, organic acids, steroids, hormones, glycols, nucleotides, narcotics
HMDS	Sugars and related substances
TMCS	Difficult to silylate compounds, organic acids
MOX	Preparation of oximes of steroids and ketoacids prior to silylation
Tri-Sil HTP (HDMS:TMCS:Pyridine)	Carbohydrates, phenols, steroids, organic acids, alcohols and some amines
Acylation Reagents	
Pentafluoropropanol	Carboxylic acids
MBTFA	Trifluoroacylation of primary and secondary amines, hydroxyl and thiol groups and carbohydrates
Perfluoroacylimidazoles (HFBI and TFAI)	Hydroxyl groups and primary and secondary amines
Perfluoro acid anhydrides (TFAA, PFAA and HFAA)	Preparation of perfluoroacyl derivatives for GC-MS, FID or ECD
Alkylation Reagents	
BF ₃ - Methanol	Esterification of fatty acids
Pentafluorobenzyl bromide	Electron capture GC of carboxylic acids, phenols and sulphonamides
Methylate Reagent (DMFDMA)	Methyl esters of fatty acids and amino acids
TMPAH	Methylation and detection of barbiturates, sedatives, xanthine bases, phenolic alkaloids

¹ Other reagents available – please enquire.

Please contact Hichrom for further details and ordering information for these derivatization reagents.

Reacti-Therm™ Sample Derivatization System

The modular design of the Thermo Scientific Reacti-Therm™ Sample Derivatization System, with interchangeable accessories, makes it adaptable to a variety of vial sizes and types, as well as offering heating, mixing and evaporation of the sample. Applications include:

- Sample incubation
- Sample evaporation
- Protein hydrolysis
- Small scale reactions
- Vacuum hydrolysis for amino acid analysis
- Derivatization reactions for HPLC and GC

Heat transfer is achieved through aluminium alloy blocks, with uniform, steady heating from ambient plus 10°C to 200°C. Four models of heating/stirring modules are available – single block and triple block sizes with either heat only or heat and stir capability. A Reacti-Vap evaporator suitable for each block size is available – please enquire for details.



Ordering Information

Description	Size of Unit	Part Number	Price
Reacti-Therm Heating/Stirring Module	Single block	TS-18821	
Reacti-Therm Heating Module	Single block	TS-18822	
Reacti-Therm Heating/Stirring Module	Triple block	TS-18823	
Reacti-Therm Heating Module	Triple block	TS-18824	