Innovative biochemistry solutions from Interchim

■ Derivatization reagents

Acylation Reagents Acylating amines, hydroxyl, thiol groups, carbohydrates. MBTFA, , TFAA, HFBI…	**Silylation Reagents** For excellent chromatographic separations. BSA, BSTFA, HMDS, MAX, MSTFA, MTBSTFA
Alkylation Reagents Substitution of active hydrogens with aliphatic or aliphatic-aromatic groups. BF3, TMPAH, DMFDMA, PFBBr	**Silylation Grade Solvents** Manufactured to meet your exacting silylation needs.

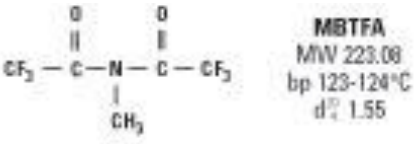
Acylation Reagents

Acylation

Provides derivatives that are better suited to chromatography an give a better response than the parent compound. Delivers enhanced detectability by electron capture detector (ECD).

MBTFA

MBTFA is for trifluoroacylating primary and secondary amines, hydroxyl and thiol groups and carbohydrates.



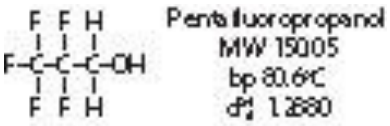
TS-49700	10 x 1mL ampules
TS-49703	25mL
TS-49704	100mL
TS-49701	5g

- Reacts under nonacidic conditions
- Principle byproduct from the derivatization reaction is N-methyltrifluoroacetamine, which is stable, volatile and does not present problems in subsequent GC
- Produces very volatile derivatives of carbohydrates
- Can be used to selectively acylate amines in the presence of hydroxyl and carboxyl groups that have been protected by silylation

Pentafluoropropanol

an acylation reagent purified for GC/MS applications.

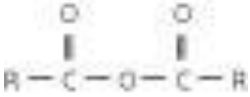
TS68195, 10x1ml amps



- Addition of fluorine atoms into compounds greatly enhances the sensitivity of certain detectors for all those materials
- Carboxylic acids can be derivatized using a two-step reaction involving reaction with anhydride, followed by a fluorinated alcohol

Perfluoro Acid Anhydrides (TFAA, PFAA and HFAA)

highly purified for optimal preparation of fluoracyl derivatives.



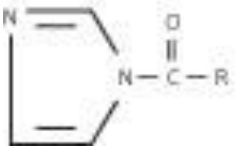
TS-67363	Trifluoroacetic Acid Anhydride; 100g
TS-65193	Pentafluoropropionic Avid Anhydride; 10 x 1mL ampules
TS-65192	Pentafluoropropionic Acid Anhydride; 25g
TS-65191	Pentafluoropropionic Acid Anhydride; 100g
TS-63164	Heptafluorobutyric Acid Anhydride; 10 x 1mL ampules

- Used to prepare fluoracyl derivatives for GC/MS
- Produce stable volatile derivatives for FID and ECD techniques

Perfluoroacylimidazoles HFBI and TFAI

offer effective acylation of hydroxyl groups and primary and secondary amines.

TS-44211 HFBI; 5g
TS-48882 TFAI; 10 x 1mL ampules



- Reactions are smooth, quantitative and produce no acid byproducts
- Principal by-product, imidazole, is relatively inert
- Excellent for FID and ECD techniques
- Derivatives are volatile, despite size of group
- Closely bound fluorines contribute to stability

Recommended for:

∞ Use in bifunctional derivatization schemes and in exchange reactions where TMS derivatives are converted to HFB derivatives
∞ Hydroxyl groups of catecholamines are derivatized with TMSI, followed by conversion of the amines to acylamides with HFBI
∞ Tryptamine and metabolites present in spinal fluid have been analyzed by ECD using HFBI

Alkylation Reagents

BF3-Methanol

provides convenient, fast and quantitative esterification of fatty acids.

TS-49370 100mL

- Supplied in septum-sealed Hypo-Vial Sample Storage Vial for convenient syringe removal
- Consists of 14% BF3, MW 67.82, and 86% CH3OH, MW 32.04

MethElute* Reagent (TMPAH)

provides accurate, sensitive on-column methylation.

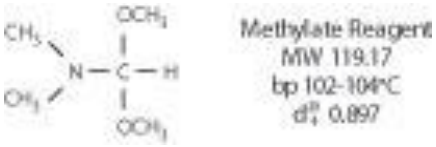
TS-49300 10mL
TS-49301 12 x 1mL

- 0.2M trimethylanilinium hydroxide (TMPAH) in methanol solution
- For quantitative methylation and detection of barbituates, sedatives, xanthine bases, phenolic alkaloids and phenytoin by gas chromatography
- Single quantitative peak for each substance
- When reagent is heated with drug-containing extracts, serum or urine, those drugs containing reactive amino, hydroxyl and carboxyl functions will be methylated at the reactive sites
- Comparable to or better than UV/TLC method (when phenobarbitol and phenytoin are present, GC is superior to UV/TLC)
- Coefficient of variation is 5% or less
- Detects barbiturates to 0.2mg/dL

Methylate Reagent (DMFDMA)

offers easy, effective preparation of methyl esters from fatty acids and amino acids.

TS-49350 For 0.53mm I.D. Columns; 0.8mm Ferrule I.D.



Advantages for preparation of methyl esters for gas chromatography:

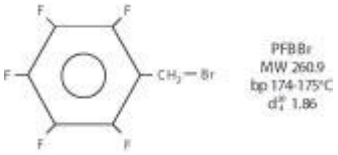
- Speed: the reaction is complete upon dissolution (except long chain solid acids)
- No water washing, extraction or concentration of derivatives required
- No water formed
- Quantitation: quantitative yields are obtained when the reagent and sample are injected without prior mixing
- Convenient: ready-to-use reagent contains 2mEq/mL pyridine

Stored in hypovials, stable at RT

Pentafluorobenzyl Bromide (PFBBr)

for electron capture GC analysis of carboxyl acids, phenols and sulfonamides. Analysis of trace organics in asphalt.

TS-58220 5g



- Fast reaction times for extraction alkylation technique: ~20 minutes
- Derivatives are highly EC-sensitive, making them useful in low-level determinations of fatty acids
- Analysis of trace organics in asphalt

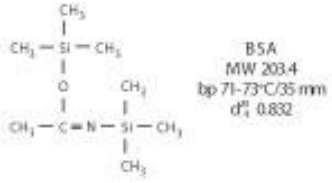
Silylation Reagents

Trimethylsilyl and t-butyldimethyl derivatives offering excellent thermal stability. They improve chromatography separations.

BSA

The perfect reagent for volatile TMS derivatives.

TS-38836 10 x 1mL
TS-38839 100g
TS-38838 25g



- Highly reactive trimethylsilyl donor that reacts quantitatively to form volatile, stable TMS derivatives
- Reacts quickly and quantitatively under mild conditions with a variety of compounds
- Derivatizes alcohols, amines, amides, carboxylic acids, phenols, steroids, biogenic amines and alkaloids

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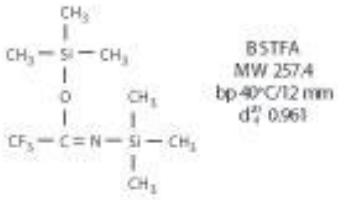
e-mail interchim@interchim.com - web www.interchim.com

BSTFA

provides excellent chromatographic separations.

TS-38830	10 x 1mL ampules
TS-38828	25g
TS-38829	100g



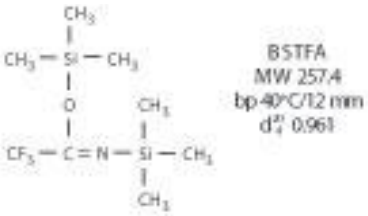
BSTFA is a powerful thrimethylsilyl donor, with donor strength that is comparable to its unfluorinated analog BSA [N,O-Bis(trimethylsilyl)acetamide]. BSTFA reacts to replace labile hydrogens on a wide range of polar compounds with a -Si(CH3)3 group. This physical characteristic is particularly useful in the gas chromatography of some lower boiling TMS-amino acids and TMS Krebs cycle acids.

- Increased volatility of reaction byproducts mono(trimethylsilyl)trifluoroacetamide and trifluoroacetamide over corresponding nonfluorinated compounds from BSA
- Increased volatility makes it possible to derivatize smaller molecules with which the TMS derivatives elute with the byproducts from BSA

BSTFA + TMCS

well-suited for difficult-to-silylate compounds.

TS-38831	BSTFA +1% TMCS; 10 x 1mL ampules
TS-38832	BSTFA +1% TMCS; 10g
TS-38833	BSTFA +1% TMCS; 25g
TS-38834	BSTFA +1% TMCS; 100g
TS-38840	BSTFA +10% TMCS; 10 x 1mL ampules

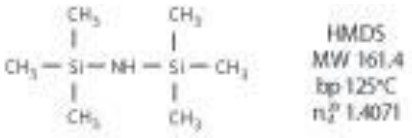


- Excellent for derivatizing fatty acid amides, slightly hindered hydroxyls and other compounds
- Catalyzed formulation is stronger than BSTFA alone

HMDS (Hexamethyldisilazane)

greatly extends the practical range of GC, improving chromatographic results in the silylation of sugars and related substances.

TS-84770	25g
TS-84769	100g



- Suitable for deactivating and coating chromatographic supports
- Monofunctional, making polymerization not possible and eliminating surface moisture

Methoxamine (MOX) Reagent

useful for preparing oximes of steroids and ketoacids prior to silylation.

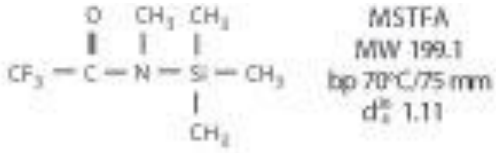
TS-45950	Hypo-Vial Container; 10mL

- 2% methoxyamine·HCl (M.W. 83.51) in pyridine
- Prevents formation of multiple derivatives when enols are present during silylation
- Supplied in amber Hypo-Vial Sample Storage Vial with septum and crimp top

MSTFA and MSTFA 1% TMCS

offer maximum volatility.

48910	MSTFA; 10 x 1mL ampules
48911	MSTFA; 10g
48913	MSTFA; 25mL
48914	MSTFA; 100mL
48915	MSTFA +1% TMCS; 10 x 1mL ampules

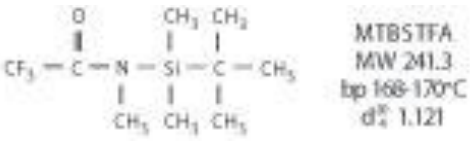


- Trimethylsilyl donor strength comparable to BSA and BSTFA
- Reacts to replace labile hydrogens on a wide range of polar compounds with a Si(CH3)3 group
- Used to prepare volatile and thermally stable derivatives for GC and MS
- Volatile byproduct, N-methyltrifluoroacetamide, has an even lower retention time than MSTFA
- Often TMS derivatives of small molecules can be analyzed when derivatized with MSTFA because the byproducts and the reagent itself usually elute with the solvent front
- Addition of TMCS aids derivatization of amides, secondary amines and hindered hydroxyls not derivatized by MSTFA alone

MTBSTFA and MTBSTFA+1% TBDMCS

stable TBDMS (tert-butyldimethylsilyl) derivatization of hydroxyl, carboxyl, thiol and primary and secondary amines.

TS-48920	MTBSTFA; 5mL ampules
TS-48927	MTBSTFA +1% TBDMS; 10 x 1mL



- Derivatizes hydroxyl, carboxyl, thiol and primary and secondary amines
- Typical yields are >96%
- Provides TBDMS ethers that are 104 times more stable to hydrolysis than TMS ethers
- Reaction byproducts are neutral and volatile
- Derivatives have a high molecular concentration at M-57
- Silylating potential increased by adding 1% TBDMS

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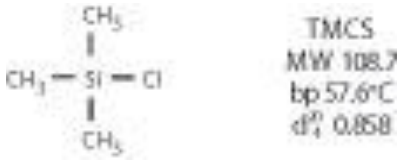
TMCS (Trimethylchlorosilane)
an excellent catalyst for difficult-to-silylate compounds.

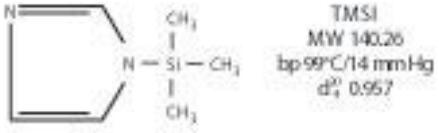
TS-88530 25g



- Excellent adjunct for forming trimethylsilyl ethers for GC determinations
- Used to prepare TMS derivatives of organic acids

TMSI (N-Trimethylsilylimidazole)
the strongest silylator available for carbohydrates and steroids.

TS-88623 TMSI (trimethylsilyimidazole); 10 x 1mL ampules
TS-88625 TMSI (trimethylsilyimidazole); 25g
TS-88626 TMSI (trimethylsilyimidazole); 100g



- Reacts quickly and smoothly with hydroxyls and carboxylic acids but not with amines
- Especially useful in multiderivatization schemes for compounds containing both hydroxyl and amine groups
- Used in the derivatization of alcohols, phenols, organic acids, steroids, hormones, glycols, nucleotides and narcotics
- Excellent for C1 through C5 fatty acids in serum and urine

Tri-Sil BP (BSA:pyridine) Reagent
derivatizes alcohols, phenols, organic acids, aromatic amides and amines.

TS-49012 25mL

Excellent for unhindered steroids, but not recommended for carbohydrates. Reacts with:
- Alcohols, phenols, some enols and other hydroxyl and polyhydroxyl compounds to form trimethylsilyl esters
- Organic acids to form trimethylsilyl esters
- Aromatic amides to form N-trimethylsilyl derivatives
- Amino acids to form both N- and O-trimethylsilyl derivatives
- Amines to form N-trimethylsilyl derivatives

Silylation Grade Solvents

TS-20062 Acetonitrile, 50mL
TS-20672 Dimethylformamide (DMF); 50mL
TS-20684 Dimethylsulfoxide (DMSO); 50mL
TS-27530 Pyridine; 50mL
TS-27860 Tetrahydrofuran (THF); 50mL

- Purified, dried and packaged under nitrogen in convenient 50mL Hypo-Vial Sample Storage Vials
- Supplied with elastomer septa, allowing immediate access to the sample without exposure to moisture and oxygen
- Use polar solvents (acetonitrile, dimethylformamide, dimethylsulfoxide, pyridine, tetrahyrdrofuran) to facilitate reactions; nonpolar organic solvents may be used, but they will not accelerate the rate of reaction

Recommended to:
- ∞ Avoid water or alcohol because TMS reagents react with active hydrogen; avoid enolizable ketones
- ∞ Use dimethylformamide for steroids and other large molecules
- ∞ Use dimethylsulfoxide to prepare TMS derivatives of tertiary alcohols and some compounds with reluctant solubility in other silylation solvents
- ∞ Pyridine is an excellent solvent and reaction medium for MS reactions and is an HCl acceptor in reactions involving organochlorosilanes
- ∞ Other commonly used solvents include tetrahyrdrofuran and acetonitrile

Multi Maleimide agents
Sulfhydryl reactive tris- and tetra maleimide reagents for preparing multimeric aggregrates of polypeptides
Applications: preparation of self-repairing polymers (Wudl, F., et.al. (2002) Science 295, 1698)

TMAE (Mal-3) **86685A, 50mg**
tris-(2-Maleimidoethyl)amine; MW: 386.36; spacer: 10.3 Å

See other multifunctional crosslinkers in the technical sheet

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