



8210 N. Austin Avenue, Morton Grove, IL 60053-3205, U.S.A.
 847-967-6000 800-323-8144
 (Monday - Friday: 7:30 a.m. - 4:00 p.m. CST)

Emergency Contact:
 INFOTRAC 800-535-5053 [U.S.A.]

Name: *N-Methyl-N-(tert-butyldimethylsilyl)trifluoroacetamide or MtBSTFA*
 Code: 1-270240-200; 1-270241-200; 1-270242-200; 1-270243-200; 1-270245-200; 1-270245-500; 1-270246-200

SAFETY DATA SHEET

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

- 1.1 Product Identifier
 - Name N-Methyl-N-(tert-butyldimethylsilyl)trifluoroacetamide or MtBSTFA
 - Code 1-270240-200; 1-270241-200; 1-270242-200; 1-270243-200; 1-270245-200; 1-270245-500; 1-270246-200
- 1.2 Use of Substance/Mixture
 - Use Analytical Reagent—GC Derivatization; Silylation Reagent
- 1.3 Details of Manufacturer/Supplier
 - Company Regis Technologies, Inc.
 8210 N. Austin Avenue
 Morton Grove, IL 60053
 847-967-6000; 800-323-8144 (toll free)
 Email: cservice@registech.com
 www.registech.com
- 1.4 Emergency Telephone
 - INFOTRAC 800-535-5053 [U.S.A.]

SECTION 2 HAZARDS IDENTIFICATION

- 2.1 Classification of the Substance or Mixture
 - GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
 - Physical Hazards
 - Flammable Liquid Category 3 H226
 - Health Hazards
 - Skin Corrosion / Irritation Category 2A H315
 - Serious Eye Damage / Irritation Category 2 H319
 - Specific Target Organ Toxicity – Single Exposure Category 3 H335, Respiratory system
 - Environmental Hazards - Not classified

GHS Label Elements

Pictograms or hazard symbols



Signal Word Warning

Hazard Statement

- H226 Flammable liquid and vapor.
- H315 Causes skin irritation.
- H319 Causes severe eye irritation.
- H335 May cause respiratory irritation.

Precautionary Statements

- [Prevention] P210 – Keep away from heat and hot surfaces.
- P264 – Wash thoroughly after handling.
- P280 – Wear protective gloves/protective clothing/eye protection/face protection.
- [Response] P302+P352 – IF ON SKIN: Wash with plenty of water.
- P305+P351+P338 – IF IN EYES: Rinse cautiously with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing.
- PP313+P332+P337 – Get medical advice/attention if skin or eye irritation persists
- P403+P235 – Store in a well-ventilated place. Keep cool.

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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Name N-Methyl-N-(tert-butyldimethylsilyl)trifluoroacetamide or MtBSTFA

Synonyms *N-(t-butyldimethylsilyl)-N-methyltrifluoroacetamide*

Hazardous components

Component	Classification	Concentration
N-Methyl-N-(tert-butyldimethylsilyl)trifluoroacetamide	Flam. Liq. 3; Skin Irr. 2A; Eye Irr. 2; STOT-SE 3; H226, H315, H319; H335	> 99%
CAS No. 77377-52-7		
EC No. Not Assigned		

For full test of the H-Statements mentioned in this Section, see Section 16.

SECTION 4 FIRST AID MEASURES

4.1 Description of first aid measures

- Eye contact: Rinse eyes with plenty of water for at least 15 minutes; lift eyelids occasionally. If irritation persists, consult physician.
- Skin contact: Immediately remove contaminated clothing and shoes, then wash skin with soap and plenty of water. If irritation persists, consult physician.
- Inhalation: Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and keep person warm and at rest. Consult physician.
- Ingestion: Give large amounts of water or milk (two glasses at most). Avoid vomiting. Consult physician immediately.
- Physician note: Symptomatic and supportive care. There is no specific antidote.

4.2 Most important symptoms and effects, both acute and delayed.

Eyes-can cause severe irritation, dryness, lacrimation (excessive tearing). Skin-Can cause moderate irritation, dryness. Extremely irritating to mucous membranes or eye and upper respiratory tract.

4.3 Indication of immediate medical attention and special treatment needed.

No information available.

SECTION 5 FIRE-FIGHTING MEASURES

5.1 Suitable Extinguishing Media

Carbon dioxide, dry chemical powder, dry sand, foam.
 Water may be effective for cooling, but may not effect extinguishment for large fires.

5.2 Specific hazards arising from the chemical.

Flammable liquid and vapor.
 Hydrolyzes readily on contact with water, but **not violently** so, to produce t-butyldimethylsilanol (flammable) and 2,2,2-trifluoro-N-methylacetamide.
 Containers may build pressure or rupture when heated. Container explosion may occur under fire conditions
 Exposure to oxidizers or acids could start or accelerate fire conditions.
 Emits toxic fumes under fire conditions: carbon oxides, silicon oxides, nitrogen oxides, hydrogen fluoride

5.3 Advice for fire-fighters

Wear personal protective equipment for flammable organic/acid vapor conditions.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

For non-emergency personnel - Avoid material contact or inhalation of mists. Evacuate unnecessary personnel from area.
 For emergency responders – Wear protective clothing to prevent contact with skin and eyes. Avoid breathing mists. Wear NIOSH/MSHA approved respirator for organic/acid gas, dust, and mists to prevent inhalation. See Section 8.3.

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- 6.2 Environmental precautions
Prevent material from entering drains.
- 6.3 Methods of clean up
Evacuate unnecessary people from area. Isolate spilled material.
Ventilate area. Eliminate all ignition sources. Use spark proof tools.
Keep away from water. Hydrolyzes readily on contact with water, but **not violently** so, to produce t-butyldimethylsilanol (flammable) and 2,2,2-trifluoro-N-methylacetamide.
Contain and recover material when possible. Neutralize with sodium bicarbonate or other suitable neutralizing agent.
If neat or in solution, mix with sand or similar inert adsorbent material or spill pillow.
Sweep up, if not absorbed in pillow, seal in appropriate hazardous waste container, and hold for proper waste disposal.
Keep out of water supplies and sewers. Wash spill site after material pickup is complete.

SECTION 7 HANDLING AND STORAGE.....

- 7.1 Precautions for Safe Handling
Observe precautions in Section 2.
Avoid inhalation contact with vapor, mist or contact with liquid.
Ground and bond containers or use inert gas purge when transferring or handling material.
Use spark proof tools and explosion proof equipment.
Empty containers retain product residue, (liquid/vapor), and can be dangerous.
Wear suitable protective equipment to avoid contact with skin, eyes, or inhalation of organic/acid vapors or mists.
Vapor or liquid readily hydrolyzes on contact with water or moist air.
Contact with water or moist air generates t-butyldimethylsilanol (flammable) and 2,2,2-trifluoro-N-methylacetamide.
Handle under nitrogen. Protect from moisture. Do not inhale vapors.
- 7.2 Conditions for safe storage, including any incompatibilities
Store in tinted glass bottle under nitrogen, in a cool, dry place with adequate ventilation, in area suitable for flammables.
Protect from light and heat. May be stored refrigerated.
Store away from incompatible materials (See Section 10.).

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION.....

- 8.1 Control parameters
Exposure limits: No limits established.
Environmental Do not empty into drains.
- 8.2 Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice.
Local exhaust and mechanical ventilation required. Hood recommended. Fume scrubber. Safety shower and eye wash.
- 8.3 Personal protection
Eye/Face Tightly fitting safety goggles or safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US).
Hand Use compatible chemical-resistant gloves.
Respiratory If exposure to mist or vapors likely: NIOSH/MSHA (US) approved respirator for organic/acid vapor and mists.
Dermal (not hand) Protective Clothing (e.g., lab coat)
Hygiene Avoid inhalation, ingestion; contact with eyes, skin, and clothing; Avoid prolonged or repeated exposure. Remove contaminated clothing and discard contaminated footwear. Wash thoroughly after handling.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

- 9.1 Information on physical and chemical data
Chemical Formula C₉H₁₈F₃NOSi

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Molecular Weight	241.33	
Form	liquid	
Appearance	clear, colorless	
Odor	strong odor	
Odor threshold	Not available	
pH	Not available	
Melting/freezing point	<0°C (<32°F)	
Boiling point:	343°F (172°C) at 1.013 hPa (14 mmHg) (Lit.)	
Flammability (liquid)		
Flash Point	51°C; 124°F;	Method: tcc
Flammable limits (%v/v)	UEL (upper explosive limit)	Not available
	LEL (lower explosive limit)	1.2 %
Autoignition temperature	Not available	
Decomposition temperature	Not available	
OSHA Flammability Class	II	
Evaporation Rate (BuAc = 1.0)	Not available	
Vapor pressure (mmHg)	11.7 hPa (8.8 mmHg) at 27 °C (81 °F)	
Vapor density (air=1):	1.121	
Relative density (g/cm ³)	1.023 g/mL	
Water Solubility/Reactive	Hydrolyzes to produce t-butyldimethylsilanol and 2,2,2-trifluoro-N-methylacetamide.	
Solubility (other)	Not available	
Partition coefficient: N-octanol/water	Pow = 1.96 (calculated), (Lit.), Bioaccumulation is not expected.	
Viscosity	Not available	
Refractive Index (n _D ²⁰)	1.402 (20°C)	

SECTION 10 STABILITY AND REACTIVITY

- 10.1 Reactivity
 - Readily hydrolyzes in contact with water for form t-butyldimethylsilanol (flammable) and 2,2,2-trifluoro-N-methylacetamide.
 - While BSTFA is reacts with water, it does **not** do so violently.
- 10.2 Chemical Stability
 - Stable if stored under nitrogen and protected from moisture.
- 10.3 Possibility of hazardous reactions
 - Flammable liquid and vapor—protect from heat and ignition sources.
- 10.4 Conditions to avoid
 - Avoid incompatibilities.
 - Protect from static, heat, flames, sparks, and ignition sources.
 - Keep out of water supplies and sewers.
- 10.5 Incompatible materials
 - Heat, light
 - Strong acids, strong oxidizers, alcohols, peroxides.
 - Water, moisture, or humid air—readily hydrolyzes to t-butyldimethylsilanol (flammable) and 2,2,2-trifluoro-N-methylacetamide.
- 10.6 Hazardous decomposition products
 - Combustion carbon oxides, silicon oxides, nitrogen oxides, hydrogen fluoride
 - Decomposition t-butyldimethylsilanol (flammable), 2,2,2-trifluoro-N-methylacetamide

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Toxicological Information		
Acute toxicity	Oral LD50	No data available
	Inhalation LC50	No data available
	Dermal LD50	No data available

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Skin corrosion/irritation	Other acute toxicity	No data available
Serious eye damage/irritation	No data available	
Respiratory irritation	No data available	
Respiratory or skin sensitization	No data available	
Germ cell mutagenicity	No data available	
Carcinogenicity		
IARC	No data available.	
NTP	No data available	
OSHA	No data available	
Reproductive toxicity (Including teratogenicity)	No data available	
Specific target organ toxicity (STOT)		
STOT-single exposure	No data available	
STOT-repeated exposure	No data available	
Aspiration hazard	No data available	
RTECS Number	AC9800000	

11.2 Further Information

Potential health effects	
Eye	Can cause serious irritation to eyes and mucous membranes. Lachrymator.
Skin	Can cause irritation, dryness, and local short-term, reversible damage to skin.
Inhalation	May cause respiratory irritation. Extremely destructive to mucous membranes of the upper respiratory tract. Symptoms: coughing, shortness of breath, difficulty breathing, headache.
Ingestion	May be harmful if in contact with mucous membranes of the GI system.
Symptoms	See above route. Pre-existing conditions that may be aggravated: not determined.
Miscellaneous	No data available.

SECTION 12 ECOLOGICAL INFORMATION.....

12.1 Ecotoxicity	No data available for this product.
12.2 Persistence and degradability	No data available for this product.
12.3 Bioaccumulative potential	BCF = No data available for this product.
12.4 Motility in soil	Log Kow = No data available for this product. Pow = 1.96 (calculated), (Lit.), Bioaccumulation is not expected.
12.5 Other adverse effects	No data available for this product.

SECTION 13 DISPOSAL CONSIDERATIONS.....

13.1 Disposal methods	
U . S. EPA Waste Codes	None
Waste Characterization (per U. S. regulations)	RCRA Hazard Class (40CFR 261): D001 (Ignitable) Generator is responsible for proper waste characterization. NOTE: U. S. Federal and state hazardous waste regulations may differ considerably.
Waste Disposal	That which cannot be recovered or recycled, should be disposed of in accordance with all applicable international, national, regional, state, and local laws. Do NOT dump into any sewer, on ground, or into any body of water.

SECTION 14 TRANSPORT INFORMATION.....

14.1 UN number	UN 1993
14.2 UN proper shipping name	Flammable Liquids, n.o.s., (<i>N-Methyl-N-(tert-butyl-dimethylsilyl)trifluoroacetamide</i>).
14.3 Transport Hazard Class	3
14.5 Packing group	PG III
14.6 Environmental hazards	Not applicable
14.6 Special precautions for user	See Section 8 for exposure/personal protection guidance.

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SECTION 15 **REGULATORY INFORMATION**

15.1 Safety, health and Environmental regulations specific for the product in question.

NFPA: H3 F3 R1 ~~W~~ (avoid water) HMIS: H3 F3 R1

15.2 Chemical Inventory Lists

..... MSTFA or N-Methyltrimethylsilyl2,2,2-trifluoro-N-methylacetamide
 CAS Number..... 77377-52-7
 TSCA:NL*
**This chemical is used strictly for research and development analytical uses as defined under TSCA.*
 EINECS:..... N
 Number NL
 CERCLA [Section 103 (40 CFR 302.4)]:..... NL
 RQ (lbs) NA
 RCRA Waste Code..... NL
 OSHA Process Safety [29 CFR 1910.119]: NL
 TQ (lbs) NA
 Clean Air Act
 [Section 112r (40 CFR 68)]: NL
 TQ (lbs) NA
 Contains Ozone Depleters (Class I or Class II) N
 [Section 103 (40 CFR 302.4)]: NL
 SARA Title III Notification [40 CFR 302.4]:
 Section 302/304 (EHS) Ingredient [40 CFR 355.3]..... NL
 TPQ (lbs)..... NA
 RQ (lbs) NA
 Section 313 Ingredient [40 CFR 372.65] NL
 SARA Hazards Acute.....Y Chronic..... N Fire.....Y Pressure..... N ReactivityN
 State Lists:*Not listed on*
 States..... CA, FL, MA,MN, NJ, PA
 On CA 65 Significant Risk Level..... NL

SECTION 16 **OTHER INFORMATION**

16.1 Full test of H-Statements referred to under Section 2 and 3.

Eye Irr.	Eye Irritant
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes severe eye irritation
H335	May cause respiratory irritation.
Skin Irr.	Skin Irritant
STOT-SE	Specific Target Organ Toxicity – Single Exposure

The above information is believed to be correct to the best of our present state knowledge, but does not purport to be all-inclusive and shall be used only as a guide. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

Prepared by: Regis Technologies

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