



Name: Trimethylsilylimidazole or TMSI  
 Code: 1-270040-500, 1-270401-200, 1-270402-200, 1-270403-200, 1-270404-200

..... **SAFETY DATA SHEET** .....

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

- 1.1 Product Identifier
  - Name Trimethylsilylimidazole or TMSI
  - Code 1-270040-500, 1-270401-200, 1-270402-200, 1-270403-200, 1-270404-200
- 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
    - Highly Flammable Liquid Category 2 H225
  - Health Hazards
    - Skin Corrosion / Irritation Category 2 H315
    - Serious Eye Damage / Irritation Category 2A H319
    - Specific Target Organ Toxicity – Single Exposure, Respiratory system Category 3 H335
  - Environmental Hazards - Not classified

GHS Label Elements  
 Pictograms or hazard symbols



Signal Word Danger

Hazard Statement

- H225 Highly 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 Trimethylsilylimidazole or TMSI  
 Synonyms 1-(Trimethylsilyl)imidazole; N-Trimethylsilylimidazole; 1-(Trimethylsilyl)-1H-imidazole; TSIM

Hazardous components

Component	Classification	Concentration
Trimethylsilylimidazole	Flam. Liq. 6; Skin Irr. 2A; Eye Irr. 2; STOT-SE 3; H225, H315, H319; H335	≥ 96%
CAS No. 18156-74-6		
EC No. 242-040-3		

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.  
 Severe eye irritation. Skin irritation. Cough. Shortness of breath.
- 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.  
 Highly flammable liquid and vapor. Vapor-air mixtures are explosive above flash point, within above stated limits.  
 Hydrolyzes mildly on contact with water to produce hexamethyldisiloxane (flammable) and imidazole (corrosive).  
 Containers may build pressure or rupture when heated. Container explosion may occur under fire conditions.  
 Water spray may be used to cool fire-exposed containers. Emits toxic fumes under fire conditions.  
 Produces carbon oxides, silicon oxides, nitrogen oxides.
- 5.3 Advice for fire-fighters  
 Wear personal protective equipment for flammable and corrosive conditions. Wear self-contained breathing apparatus (SCBA) if necessary.

**SECTION 6 ..... ACCIDENTAL RELEASE MEASURES .....**

- 6.1 Personal precautions, protective equipment, and emergency procedures  
 For non-emergency personnel - Do not breath vapors or mists. Avoid material contact. Evacuate unnecessary personnel from area, observe emergency procedures, consult an expert.  
 For emergency responders – Protective equipment for flammable and organic/amine vapor conditions. See Section 8.3.

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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.]

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- 6.2 Environmental precautions  
 Prevent material from entering drains. Reacts mildly with water to produce flammable hexamethyldisiloxane and corrosive imidazole.
- 6.3 Methods of clean up  
 Evacuate unnecessary people from area. Isolate spilled material.  
 Ventilate area. Eliminate all ignition sources. Use spark proof tools.  
 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 Safe Handling Precautions  
 Wear suitable protective equipment to avoid contact with skin, eyes, or inhalation of organic/amine vapors.  
 Wash thoroughly after handling. Immediately remove contaminated clothing.  
 Handle in a dry, well ventilated area. Use local exhaust if vapor can be generated.  
 Keep away from ignition sources. Take precautionary measures against static discharge.  
 Handle under nitrogen. Protect from moisture. Water/moist air contact may cause mild reaction to produce imidazole and hexamethyldisiloxane.
- 7.2 Storage Conditions  
 Store under inert gas in a tightly sealed container. Store in a cool, dry place suitable for flammable materials. Protect from moisture, ignition sources, and away from alcohols, acids, and oxidizing materials. 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. Mildly water reactive—produces imidazole and hexamethyldisiloxane.
- 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 Chemical safety eyewear or goggles  
 Hand Compatible chemical-resistant gloves: Rubber (e.g., natural rubber, neoprene, nitrile, or equivalent)  
 Respiratory NIOSH/MSHA or European Standard EN 149 approved respirator for organic/amine gas, dust, and mists if exposure limits are exceeded or irritation or other symptoms are experienced.  
 Dermal (not hand) Protective Clothing (e.g., lab coat)--flame retardant anti-static material recommended.  
 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	C <sub>6</sub> H <sub>12</sub> N <sub>2</sub> Si
Molecular Weight	140.26
Form	liquid
Appearance	clear, colorless to slightly yellow
Odor	amine or musty odor
Odor threshold	Not available
pH	>7 basic in aqueous solution

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Melting/freezing point	<0°C; <32°F
Boiling point:	93-94 °C; 199-201 °F (14 mmHg)
Flammability (liquid, solid)	
Flash Point	5°C; 42°F Method: closed cup
Flammable limits (%v/v)	LEL (lower explosive limit) Not available UEL (upper explosive limit) Not available
Autoignition temperature	540°C; 1004°F
Decomposition temperature	Not available
OSHA Flammability Class	IB
Evaporation Rate (BuAc = 1.0)	> 1
Vapor pressure (mmHg)	0.5 mmHg @ 40°C
Vapor density (air=1):	> 1
Relative density (g/cm <sup>3</sup> )	0.956
Water Solubility	Decomposes/ hydrolyzes
Water reactive	Yes—mildly hydrolyzes to form hexamethyldisiloxane and imidazole
Solubility (other)	Not available
Partition coefficient: N-octanol/water	Not available
Viscosity	Not available
% Volatiles	<1 (H <sub>2</sub> O = 1.0)
Refractive Index (n <sub>D</sub> <sup>20</sup> ):	1.4750
Dissociation constant (pK <sub>b</sub> )	15.07
Dipole Moment:	4.64

**SECTION 10** ..... **STABILITY AND REACTIVITY** .....

- 10.1 Reactivity  
Mildly reactive to water or moisture.
- 10.2 Chemical Stability  
Stable if stored under nitrogen and protected from moisture.
- 10.3 Possibility of hazardous reactions  
Highly flammable liquid and vapor—protect from heat and ignition sources.  
Mildly reactive--decomposes on contact with water/moist air to form hexamethyldisiloxane and imidazole.
- 10.4 Conditions to avoid  
Avoid incompatibilities.  
Protect from static, heat, and ignition sources.  
Protect from moisture.  
Keep out of water supplies and sewers.
- 10.5 Incompatible materials  
Alcohols  
Strong acids  
Strong oxidizers, peroxides  
Water, moisture, or humid air--mildly reactive, forms precipitate on contact--hydrolyzes to corrosive imidazole and flammable hexamethyldisiloxane.  
Heat
- 10.6 Hazardous decomposition products  
Combustion carbon oxides, silicon oxides, nitrogen oxides, hydrogen fluoride  
Decomposition hexamethyldisiloxane (flammable), imidazole (corrosive)

**SECTION 11** ..... **TOXICOLOGICAL INFORMATION** .....

11.1 Toxicological Information  
 Acute toxicity Oral LD50 No data available

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	Inhalation LC50	No data available
	Dermal LD50	No data available
	Other acute toxicity	See Further Information below.
Skin corrosion/irritation	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	Mouse, intraperitoneal, TDLo 1g/kg – Tumorigenic-Neoplastic by RTECS criteria. Lungs, Thorax, or Respiration-Tumors.	
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	NI8700000	

11.2 Further Information

Potential health effects	
Eye	Serious eye irritation.
Skin	Can cause irritation, dryness, and local short-term, reversible damage to skin.
Inhalation	May cause respiratory irritation from mist inhalation. Unlikely from vapors due to very low volatility. 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.
12.5 Other adverse effects	No data available for this product.
General Notes	TNSI is mildly reactive, forms precipitate on contact--hydrolyzes to corrosive imidazole and flammable hexamethyldisiloxane. Do not empty into drains or water courses.

**SECTION 13 DISPOSAL CONSIDERATIONS**

13.1 Disposal methods	
U . S. EPA Waste Codes	D001
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., (bis(trimethylsilyl)imidazole).

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- 14.3 Transport Hazard Class 3
- 14.5 Packing group PG II
- 14.6 Environmental hazards Not applicable
- 14.6 Special precautions for user See Section 8 for exposure/personal protection guidance.  
 ERG No. 128 ; Maritime Hazard – No; Poison Inhalation Hazard - No

**SECTION 15 REGULATORY INFORMATION**

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

NFPA: H2 F3 R0 HMIS: H2\* F3 R0 (\*Chronic health effect)

15.2 Chemical Inventory Lists

- ..... Trimethylsilylimidazole or TMSI
- CAS Number ..... 18156-74-6
- TSCA: ..... Y
- \*This chemical is used strictly for research and development analytical uses as defined under TSCA.*
- EINECS: ..... Y
- Number ..... 242-040-3
- 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.....Y Fire .... Y Pressure..... N Reactivity .....N
- State Lists: ..... *Not listed on*
- States ..... 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
- H225 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**

**This is the last page of this MSDS.**

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