SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

<table>
<thead>
<tr>
<th>Product form</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Substance name</td>
<td>4-AMINO-3,3-DIMETHYLBUTYLMETHYLDIMETHOXYSilane</td>
</tr>
<tr>
<td>Product code</td>
<td>SIA0587.05</td>
</tr>
<tr>
<td>Formula</td>
<td>C9H23NO2Si</td>
</tr>
<tr>
<td>Synonyms</td>
<td>AMINONEOHEXYLMETHYLDIMETHOXYSilane; 1-BUTANAMINE, 4-(DIMETHOXYMETHYLSILYL)-2,2-DIMETHYL</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOMETHOXYSilane</td>
</tr>
</tbody>
</table>

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture: Chemical intermediate
For research and industrial use only

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification
Skin Irrit. 2 H315
Eye Irrit. 2A H319
STOT SE 3 H335
Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US): !

Signal word (GHS-US): Warning
Hazard statements (GHS-US)
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H335 - May cause respiratory irritation

Precautionary statements (GHS-US)
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P261 - Avoid breathing vapors
- P264 - Wash hands thoroughly after handling
- P271 - Use only outdoors or in a well-ventilated area
- P302+P352 - If on skin: Wash with plenty of water
- P332+P313 - If skin irritation occurs: Get medical advice/attention
- P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P337+P313 - If eye irritation persists: Get medical advice/attention
- P312 - Call a doctor if you feel unwell
- P321 - Specific treatment (see first aid instructions on this label)
- P364 - Take off contaminated clothing and wash it before reuse
- P403+P233 - Store in a well-ventilated place. Keep container tightly closed
- P405 - Store locked up
- P501 - Dispose of contents/container to licensed waste disposal facility.
4-AMINO-3,3-DIMETHYLBUTYLMETHYLDIMETHOXYSILANE
Safety Data Sheet

2.3. Other hazards

Other hazards not contributing to the classification: Additional methanol may be formed by reaction with moisture and water. The US OSHA PEL (TWA) for methanol is 200 ppm.

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substance

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Mono-constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>4-AMINO-3,3-DIMETHYLBUTYLMETHYLDIMETHOXYSILANE</td>
</tr>
<tr>
<td>CAS No</td>
<td>156849-43-3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Amino-3,3-dimethylbutylmethyldimethoxysilane (CAS No)</td>
<td>156849-43-3</td>
<td>95 - 100</td>
<td>Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335</td>
</tr>
</tbody>
</table>

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of soap and water. Get medical advice/attention.

First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention.

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

Symptoms/injuries after inhalation: May cause respiratory irritation.

Symptoms/injuries after skin contact: Causes skin irritation.

Symptoms/injuries after eye contact: Causes serious eye irritation.

Symptoms/injuries after ingestion: Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard. On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system.

Chronic symptoms: Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision. On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system.

4.3. Indication of any immediate medical attention and special treatment needed

NOTE TO PHYSICIAN: This product reacts with water in the acid contents of the stomach to form methanol. The combination of visual disturbances, metabolic acidosis and formic acid in urine is evidence of methanol poisoning. The therapeutic intravenous administration of ethanol (10 mls/hour) allows methanol to be preferentially oxidized and reduces production of methanol metabolites. Acidosis must be treated with intravenous administration of sodium bicarbonate and methanol elimination may be increased by hemodialysis, as indicated. Treatment should be based on blood methanol levels and acid-base balance.

SECTION 5: Firefighting measures

5.1. Extinguishing media


Unsuitable extinguishing media: Do not use straight streams.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters

Firefighting instructions: Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment as described in Section 8.
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapor and mist. Ground/bond container and receiving equipment. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Store locked up.
Storage area : Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls : Provide local exhaust or general room ventilation.
Personal protective equipment : Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection : Neoprene or nitrile rubber gloves.
Eye protection : Chemical goggles. Contact lenses should not be worn.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor - amine gas (brown cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Clear liquid.
Molecular mass : 205.37 g/mol
Color : Straw.
Odor threshold : No data available
Refractive index : 1.4365
pH : No data available
Relative evaporation rate (butyl acetate=1) : No data available
4-AMINO-3,3-DIMETHYLBUTYL METHYLDIMETHOXYSilANE
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Melting point : No data available
Freezing point : < 0 °C
Boiling point : 230 °C
Flash point : 100 °C
Auto-ignition temperature : No data available
 Decomposition temperature : No data available
 Flammability (solid, gas) : No data available
 Vapor pressure : < 1 mm Hg @ 25°C
 Relative vapor density at 20 °C : > 1
 Relative density : 0.9248
 Solubility : Reacts with water.
 Log Pow : No data available
 Log Kow : No data available
 Viscosity, kinematic : No data available
 Viscosity, dynamic : No data available
 Explosive properties : No data available
 Oxidizing properties : No data available
 Explosion limits : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable when stored in sealed containers.

10.3. Possibility of hazardous reactions
Reacts with water and moisture in air, liberating methanol.

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Methanol. Organic amine vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified

4-Amino-3,3-dimethylbutylmethyldimethoxysilane (156849-43-3)
LD50 oral rat : 631 mg/kg

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : May cause respiratory irritation.
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified
Potential Adverse human health effects and symptoms : This material liberates small amounts of methanol on contact with moisture. Material generates methanol on contact with water or moisture in skin, eyes and mucous membranes and has an irritating, dehydrating effect on overexposed tissue.
Symptoms/injuries after inhalation : May cause respiratory irritation.
Symptoms/injuries after skin contact : Causes skin irritation.
4-AMINO-3,3-DIMETHYLBUTYL METHYLDIMETHOXY SILANE  
Safety Data Sheet

<table>
<thead>
<tr>
<th>Symptom/Injury after Eye Contact</th>
<th>Causes serious eye irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom/Injury after Ingestion</td>
<td>Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.</td>
</tr>
<tr>
<td>Chronic Symptoms</td>
<td>Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision. On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system.</td>
</tr>
<tr>
<td>Reason for Classification</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

### SECTION 12: Ecological Information

#### 12.1. Toxicity
No additional information available

#### 12.2. Persistence and Degradability
No additional information available

#### 12.3. Bioaccumulative Potential
No additional information available

#### 12.4. Mobility in Soil
No additional information available

#### 12.5. Other Adverse Effects
- **Other adverse effects**: This substance may be hazardous to the environment.
- **Effect on ozone layer**: No additional information available
- **Effect on the global warming**: No known ecological damage caused by this product.

### SECTION 13: Disposal Considerations

#### 13.1. Waste Treatment Methods

<table>
<thead>
<tr>
<th>Sewage Disposal Recommendations</th>
<th>Do not dispose of waste into sewer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Disposal Recommendations</td>
<td>May be incinerated. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.</td>
</tr>
<tr>
<td>Ecology - Waste Materials</td>
<td>Avoid release to the environment.</td>
</tr>
</tbody>
</table>

### SECTION 14: Transport Information

#### 14.1. UN Number
Not regulated for transport.

#### 14.2. UN Proper Shipping Name
Not applicable

#### 14.3. Additional Information
- **Other Information**: No supplementary information available.
- **Transport by Sea**: No additional information available
- **Air Transport**: No additional information available

### SECTION 15: Regulatory Information

#### 15.1. US Federal Regulations

- **4-Amino-3,3-dimethylbutylmethyldimethoxysilane (156849-43-3)**
  Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International Regulations

- **4-Amino-3,3-dimethylbutylmethyldimethoxysilane (156849-43-3)**
  Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

#### 15.3. US State Regulations

- **4-AMINO-3,3-DIMETHYL BUTYL METHYLDIMETHOXY SILANE (156849-43-3)**
  - U.S. - California - Proposition 65 - Carcinogens List: No
  - U.S. - California - Proposition 65 - Developmental Toxicity: No
  - U.S. - California - Proposition 65 - Reproductive Toxicity - Female: No
4-AMINO-3,3-DIMETHYLBUTYLMETHYLDIMETHOXYSILANE
Safety Data Sheet

SECTION 16: Other information

Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND</td>
<td>Not Determined, No Data</td>
</tr>
<tr>
<td>NA</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>LD</td>
<td>Lethal Dose</td>
</tr>
<tr>
<td>LC</td>
<td>Lethal Concentration</td>
</tr>
<tr>
<td>ATE</td>
<td>Acute Toxicity Estimates</td>
</tr>
<tr>
<td>H</td>
<td>hour</td>
</tr>
<tr>
<td>°</td>
<td>°C unless otherwise stated</td>
</tr>
<tr>
<td>mm</td>
<td>millimeters Hg, torr</td>
</tr>
<tr>
<td>PEL</td>
<td>permissible exposure level</td>
</tr>
<tr>
<td>TWA</td>
<td>time weighted average</td>
</tr>
<tr>
<td>TLV</td>
<td>threshold limit value</td>
</tr>
<tr>
<td>TG</td>
<td>Test Guideline</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety and Health</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>HMIS</td>
<td>Hazardous Material Information System</td>
</tr>
<tr>
<td>CAS No.</td>
<td>Chemical Abstract Service Registration Number</td>
</tr>
<tr>
<td>EC No.</td>
<td>European Commission Registration Number</td>
</tr>
<tr>
<td>EC Index No.</td>
<td>European Commission Index Number</td>
</tr>
<tr>
<td>OECD</td>
<td>The Organisation for Economic Co-operation and Development</td>
</tr>
</tbody>
</table>

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-Phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 (Oral)</td>
<td>Acute toxicity (oral) Category 4</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation Category 2A</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation Category 2</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) Category 3</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
</tbody>
</table>

HMIS III Rating

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given</td>
</tr>
<tr>
<td>Flammability</td>
<td>2 Moderate Hazard</td>
</tr>
<tr>
<td>Physical</td>
<td>1 Slight Hazard</td>
</tr>
</tbody>
</table>

Prepared by safety and environmental affairs.

Date of issue: 11/13/2015
Version: 1.0

SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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