## 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>N-(2-AMINOETHYL)-3-AMINOPROPYLTRIMETHOXYSILANE, tech-95</td>
</tr>
<tr>
<td>Product code</td>
<td>SIA0591.0</td>
</tr>
<tr>
<td>Formula</td>
<td>C8H22N2O3Si</td>
</tr>
<tr>
<td>Synonyms</td>
<td>DAMO; N-(3-(TRIMETHOXYSILYL)PROPYL)ETHYLENEDIAMINE; 3-(2-AMINOETHYLAMINO)PROPYLTRIMETHOXYSILANE</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

<table>
<thead>
<tr>
<th>Use of the substance/mixture</th>
<th>Chemical intermediate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For research and industrial use only</td>
</tr>
</tbody>
</table>

### 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

<table>
<thead>
<tr>
<th>Classification (GHS-US)</th>
<th>Acute Tox. 3 (Inhalation:vapour)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H331</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>H315</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>H318</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
<td>H317</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>H335</td>
</tr>
<tr>
<td>Aquatic Acute 2</td>
<td>H401</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

### 2.2. Label elements

**GHS-US labeling**

| Hazard pictograms (GHS-US) | ![GHS05](image), ![GHS06](image), ![GHS07](image) |

<table>
<thead>
<tr>
<th>Signal word (GHS-US)</th>
<th>Danger</th>
</tr>
</thead>
</table>

| Hazard statements (GHS-US) | H315 - Causes skin irritation |
|----------------------------| H317 - May cause an allergic skin reaction |
|                            | H318 - Causes serious eye damage |
|                            | H331 - Toxic if inhaled |
|                            | H335 - May cause respiratory irritation |
|                            | H401 - Toxic to aquatic life |

<table>
<thead>
<tr>
<th>Precautionary statements (GHS-US)</th>
<th>P280 - Wear protective gloves/protective clothing/eye protection/face protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P261 - Avoid breathing mist, vapors</td>
</tr>
<tr>
<td></td>
<td>P264 - Wash hands thoroughly after handling</td>
</tr>
<tr>
<td></td>
<td>P271 - Use only outdoors or in a well-ventilated area</td>
</tr>
<tr>
<td></td>
<td>P272 - Contaminated work clothing must not be allowed out of the workplace</td>
</tr>
<tr>
<td></td>
<td>P273 - Avoid release to the environment</td>
</tr>
<tr>
<td></td>
<td>P333+P313 - If skin irritation or rash occurs: Get medical advice/attention</td>
</tr>
<tr>
<td></td>
<td>P302+P352 - If on skin: Wash with plenty of water</td>
</tr>
<tr>
<td></td>
<td>P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing</td>
</tr>
<tr>
<td></td>
<td>P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing</td>
</tr>
</tbody>
</table>

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N-(2-AMINOETHYL)-3-AMINOPROPYLTRIMETHOXYSILANE, tech-95
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2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS-US)
No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane</td>
<td>(CAS No) 1760-24-3</td>
<td>&gt; 95</td>
<td>Acute Tox. 3 (Inhalation: vapour), H331 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1B, H317 STOT SE 3, H335 Aquatic Acute 2, H401</td>
</tr>
<tr>
<td>N,N'-Bis[(3-trimethoxysilyl)propyl]ethylenediamine</td>
<td>(CAS No) 68845-16-9</td>
<td>2 - 3</td>
<td>Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1B, H317 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. If skin irritation or rash occurs: 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 skin contact: Causes skin irritation. May cause an allergic skin reaction.

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

Symptoms/injuries after ingestion: May be harmful if swallowed.

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

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

N-(2-Aminoethyl)-3-Aminopropyltrimethoxysilane, tech-95
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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: Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire.
- 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
- Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
- Protective equipment: Equip cleanup crew with proper protection.

6.2. Environmental precautions
- Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
- 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
- Hygiene measures: Avoid all eye and skin contact and do not breathe vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors. Use only in well ventilated areas.

7.2. Conditions for safe storage, including any incompatibilities
- Storage conditions: Keep container tightly closed.
- 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: 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: 222.36 g/mol
- Color: Straw.
- Odor threshold: No data available
- Refractive index: 1.450
N-(2-AMINOETHYL)-3-AMINOPROPYLTRIMETHOXYSILANE, tech-95
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pH : No data available
Relative evaporation rate (butyl acetate=1) : < 1
Melting point : No data available
Freezing point : < -20 °C
Boiling point : 140 °C @ 15 mm Hg
Flash point : 150 °C
Auto-ignition temperature : 300 °C
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 : 1.019
VOC content : < 5 %
Solubility : Reacts with water. Dissolves.
Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : 6.5 cSt
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Explosive 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 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 acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Inhalation:vapour: Toxic if inhaled.

<table>
<thead>
<tr>
<th>N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane (1760-24-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat : 2413 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rat : &gt; 2009 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit : 16 ml/kg</td>
</tr>
<tr>
<td>LD50 intravenous mouse : 180 mg/kg</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l) : 1.49 - 2.44</td>
</tr>
<tr>
<td>ATE US (oral) : 2413.000 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (vapors) : 1.490 mg/l/4h</td>
</tr>
<tr>
<td>ATE US (dust, mist) : 1.490 mg/l/4h</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitization : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
N-(2-AMINOETHYL)-3-AMINOPROPYLTRIMETHOXYSILANE, tech-95
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Specific target organ toxicity (single exposure): May cause respiratory irritation.
Specific target organ toxicity (repeated exposure): Not classified
Aspiration hazard: Not classified
Symptoms/injuries after skin contact: Causes skin irritation. May cause an allergic skin reaction.
Symptoms/injuries after eye contact: Causes serious eye damage.
Symptoms/injuries after ingestion: May be harmful if swallowed.
Chronic symptoms: On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system. Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision.
Reason for classification: Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
Ecology - water: Harmful to aquatic life with long lasting effects.

N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane (1760-24-3)

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>&gt; 100 mg/l</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>90 mg/l</td>
</tr>
<tr>
<td>ErC50 (algae)</td>
<td>8.8 mg/l</td>
</tr>
<tr>
<td>NOEC chronic crustacea</td>
<td>&lt; 63 mg/l</td>
</tr>
<tr>
<td>NOEC chronic algae</td>
<td>1.6 mg/l</td>
</tr>
</tbody>
</table>

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
Waste disposal recommendations: May be incinerated. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
UN-No.(DOT): 3082
DOT NA no.: UN3082

14.2. UN proper shipping name
Proper Shipping Name (DOT): Environmentally hazardous substances, liquid, n.o.s. (N-(2-AMINOETHYL)-3-AMINOPROPYLTRIMETHOXYSILANE)
Department of Transportation (DOT) Hazard Classes: 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Hazard labels (DOT): 9 - Class 9 (Miscellaneous dangerous materials)

DOT Symbols: G - Identifies PSN requiring a technical name
Packing group (DOT): III - Minor Danger
DOT Packaging Exceptions (49 CFR 173.xxx): 155
# N-(2-AMINOETHYL)-3-AMINOPROPYLTRIMETHOXYSILANE, tech-95 Safety Data Sheet

| DOT Packaging Non Bulk (49 CFR 173.xxx) | 203 |
| DOT Packaging Bulk (49 CFR 173.xxx) | 241 |

## 14.3 Additional information

Other information: No supplementary information available.

### Transport by sea

- **DOT Vessel Stowage Location**: A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.

### Air transport

- **DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)**: No limit
- **DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)**: No limit

### SECTION 15: Regulatory information

#### 15.1 US Federal regulations

- **N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane (1760-24-3)**
  - Listed on the United States TSCA (Toxic Substances Control Act) inventory
- **N,N'-Bis[(3-trimethoxysilyl)propyl]ethylenediamine (68845-16-9)**
  - Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2 International regulations

- **N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane (1760-24-3)**
  - Listed on the AICS (Australian Inventory of Chemical Substances)
  - Listed on the Canadian DSL (Domestic Substances List)
  - Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
  - Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
  - Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
  - Listed on the Japanese ISHL (Industrial Safety and Health Law)
  - Listed on the Korean ECL (Existing Chemicals List)
  - Listed on NZIoC (New Zealand Inventory of Chemicals)
  - Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- **N,N'-Bis[(3-trimethoxysilyl)propyl]ethylenediamine (68845-16-9)**
  - Listed on the AICS (Australian Inventory of Chemical Substances)
  - Listed on the Canadian NDSL (Non-Domestic Substances List)
  - Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
  - Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
  - Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
  - Listed on NZIoC (New Zealand Inventory of Chemicals)
  - Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

#### 15.3 US State regulations

**N-(2-AMINOETHYL)-3-AMINOPROPYLTRIMETHOXYSILANE, tech-95(1760-24-3)**

| 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 |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |

**N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane (1760-24-3)**

| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significance risk level (NSRL) |
| No | No | No | No | |

**N,N'-Bis[(3-trimethoxysilyl)propyl]ethylenediamine (68845-16-9)**

| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significance risk level (NSRL) |
| No | No | No | No | |
N-(2-AMINOETHYL)-3-AMINOPROPYLTRIMETHOXYSILANE, tech-95
Safety Data Sheet

SECTION 16: Other information

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

Full text of H-phrases:
- Acute Toxicity (Inhalation: vapour) Category 3
- Hazardous to the aquatic environment - Acute Hazard Category 2
- Serious eye damage/eye irritation Category 1
- Skin corrosion/irritation Category 2
- Skin sensitization Category 1
- Skin sensitization Category 1B
- Specific target organ toxicity (single exposure) Category 3
- Causes skin irritation
- May cause an allergic skin reaction
- Causes serious eye damage
- Toxic if inhaled
- May cause respiratory irritation
- Toxic to aquatic life

HMIS III Rating
- Health: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
- Flammability: 1 Slight Hazard
- Physical: 1 Slight Hazard

Prepared by safety and environmental affairs.

Date of issue: 01/07/2015

Date of issue: 01/07/2015

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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