

Safety Data Sheet SIA0587.07 Date of issue: 12/29/2014 Version: 1.0

	ostance/mixture and of the company/undertaking
1.1. Product identifier	
Product form	: Substance
Physical state	: Liquid
Substance name	: 4-AMINO-3,3-DIMETHYLBUTYLTRIMETHOXYSILANE
Product code	: SIA0587.07
Formula	: C9H23NO3Si
Synonyms	: AMINONEOHXYLTRIMETHOXYSILANE
Chemical family	: ORGANOMETHOXYSILANE
1.2. Relevant identified uses of the sub	stance 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 info@gelest.com - www.gelest.com	AM - 5:30 PM EST
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 r	nixture
Classification (GHS-US)	
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)	
	· ·
	GHS07
Signal word (GHS-US)	: Warning
Hazard statements (GHS-US)	: H315 - Causes skin irritation H319 - Causes serious eye irritation H325 - May cause regritatory irritation
Precautionary statements (GHS-US)	H335 - May cause respiratory irritation : 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
	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
	P312 - Call a doctor if you feel unwell P332+P313 - If skin irritation occurs: Get medical advice/attention
	P337+P313 - If eye irritation persists: Get medical advice/attention
	P362 - Take off contaminated clothing and wash 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.
2.3. Other hazards	
No additional information available	

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2.4. Unknown acute toxicity (GHS-U	S)				
No data available					
SECTION 3: Composition/information	ation on	ingredients			
3.1. Substance					
Substance type	type : Mono-constituent				
Name	: 4-AMINO-3,3-DIMETHYLBUTYLTRIMETHOXYSILANE				
CAS No	: 15	: 157923-74-5			
EC no	: 60	5-117-6			
Name		Product identifier	%	Classification (GHS-US)	
4-Amino-3,3-dimethylbutyltrimethoxysilane		(CAS No) 157923-74-5	> 95	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335	
Methanol		(CAS No) 67-56-1		Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:vapour), H331 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 1, H370 STOT SE 3, H336	
3.2. Mixture					
Not applicable					
SECTION 4: First aid measures					
4.1. Description of first aid measure	S				
First-aid measures general	me	emove contaminated clothing and shoes. edical advice immediately (show the labe ailable show packaging or label.			
First-aid measures after inhalation		move victim to fresh air and keep at rest well, seek medical advice.	t in a position com	fortable for breathing. If you feel	
First-aid measures after skin contact	: Wa	ash with plenty of soap and water. Get m	nedical advice/atte	ntion.	
First-aid measures after eye contact		mediately flush eyes thoroughly with wat esent and easy to do. Continue rinsing.			
First-aid measures after ingestion	: Ne	ever give anything by mouth to an uncon	scious person. Ge	t medical advice/attention.	
.2. Most important symptoms and o	effects, bo	th acute and delayed			
Symptoms/injuries after inhalation	: Ma	: May cause respiratory irritation. Overexposure may cause: Coughing. Headache. Nausea.			
Symptoms/injuries after skin contact	: Ca	: Causes skin irritation.			
Symptoms/injuries after eye contact	: Ca	: Causes serious eye irritation.			
Symptoms/injuries after ingestion		al toxicity is associated with methanol, th usea, vomiting, headache, visual effects			
	~				

Chronic symptoms

#### 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.

in persistent or recurring headaches or impaired vision.

SECT	ION 5: Firefighting measures		
5.1.	Extinguishing media		
Suitable	e extinguishing media	:	Water spray. Foam. Carbon dioxide. Dry chemical.
5.2.	Special hazards arising from the s	ubs	ance or mixture
Fire ha	zard	:	Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.
5.3.	Advice for firefighters		
Firefigh	ting instructions	:	Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire.
Protect	ion 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.

: 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

SECTION 6: Accident				
6.1. Personal precaut	ions, protective equipment and emergency p	rocedures		
6.1.1. For non-emergen				
Emergency procedures	: Evacuate unnecessary	personnel.		
6.1.2. For emergency re	sponders			
Protective equipment	a proper protection.			
6.2. Environmental pr	ecautions			
Prevent entry to sewers and	public waters. Notify authorities if liquid enters s	ewers or public waters.		
6.3. Methods and mat	erial for containment and cleaning up			
Methods for cleaning up		oon as possible, using an absorbent material to collect it. Sweep or riate container for disposal.		
6.4. Reference to othe				
<b>.</b> .	ntrols and personal protection.			
SECTION 7: Handling	and storage			
7.1. Precautions for s	•			
Precautions for safe handling		ontact and do not breathe vapor and mist. Provide good ventilation in accumulation of vapors.		
Hygiene measures	: Wash hands and other	exposed areas with mild soap and water before eating, drinking or ing work. Wash contaminated clothing before reuse.		
7.2. Conditions for sa	fe storage, including any incompatibilities			
Storage conditions	: Keep container tightly cl	osed.		
Incompatible materials	: Acids. Alcohols. Moistur	e. Oxidizing agent. Peroxides. Water.		
Storage area	: Store in a well-ventilated	d place. Store away from heat.		
7.3. Specific end use(	s)			
No additional information ava	ailable			
<b>SECTION 8: Exposure</b>	e controls/personal protection			
8.1. Control paramete	rs			
Methanol (67-56-1)				
USA ACGIH	ACGIH TWA (ppm)	200 ppm		
USA ACGIH	ACGIH STEL (ppm)	250 ppm		
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	260 mg/m <sup>3</sup>		
USA NIOSH	NIOSH REL (TWA) (ppm)	200 ppm		
USA NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	325 mg/m <sup>3</sup>		
USA NIOSH	NIOSH REL (STEL) (ppm)	250 ppm		
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	260 mg/m <sup>3</sup>		
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm		
USA IDLH	US IDLH (ppm)	6000 ppm		
8.2. Exposure control				
Appropriate engineering cont		general room ventilation.		
Personal protective equipme		xposure. Emergency eye wash fountains and safety showers should be the vicinity of any potential exposure.		
Hand protection	· Neonrono or nitrilo rubb	er doves		
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		ation organic vapor - amine gas (brown cartridge) respirator.		
<b>SECTION 9: Physical</b>	and chemical properties			
	sic physical and chemical properties			
Physical state	: Liquid			
Appearance	Clear liquid.			
Molecular mass	: 221.37 g/mol			
Color	: Straw.			
12/20/2017	EN (English LIS)	SDS ID: SIA0587 07 3/8		

Odor	: Mild. Amine. Ammonia-like.
Odor threshold	: No data available
Refractive index	: 1.4302
рН	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: <0 °C
Boiling point	: 230 °C
Flash point	: 97 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: <1 mm Hg @ 25℃
Relative vapor density at 20 °C	: >1
Relative density	: 0.977
VOC content	: < 5 %
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
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 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	
Acids. Alcohols. Moisture. Oxidizing agent. Perc	oxides. Water.
10.6. Hazardous decomposition products	\$
Methanol. Organic acid vapors.	
<b>SECTION 11: Toxicological informa</b>	tion
11.1. Information on toxicological effects	3
Acute toxicity	: Not classified
-	
Methanol (67-56-1) LD50 oral rat	6200 malka
LD50 dermal rabbit	6200 mg/kg
	20 g/kg
LC50 inhalation rat (ppm) ATE US (oral)	22500 ppm (Exposure time: 8 h) 100.000 mg/kg body weight
ATE US (dermal)	300.000 mg/kg body weight
ATE US (definal) ATE US (vapors)	3.000 mg/l/4h
Skin corrosion/irritation	: Causes skin irritation.
Skin conosion/initiation 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
Symptoms/injuries after inhalation	: May cause respiratory irritation. Overexposure may cause: Coughing. Headache. Nausea.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness.
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
<b>SECTION 12: Ecological information</b>	
12.1. Toxicity	
Methanol (67-56-1)	
LC50 fish 1	28200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 fish 2	> 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
12.2. Persistence and degradability	
No additional information available	
12.3. Bioaccumulative potential	
Methanol (67-56-1)	
BCF fish 1	< 10
Log Pow	-0.77
12.4.   Mobility in soil     No additional information available   Image: Comparison of the second	
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 consideration	IS
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	
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-dimethylbutyltrimethoxysilane (157923-74-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Methanol (67-56-1)					
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313					
SARA Section 313 - Emission Reporting 1.0 %					
15.2. International regulation	ons				
4-Amino-3,3-dimethylbuty	yltrimethoxysilane (15792	3-74-	5)		
Listed on IECSC (Inventory	of Existing Chemical Subs	tance	s Produced or Imported in C	hina)	
Methanol (67-56-1)					
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on the Canadian DSL (Domestic Sustances 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 Korean ECL (Existing Chemicals List) Listed on NZIOC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Japanese Poisonous and Deleterious Substances Control Law Listed on the Canadian IDL (Ingredient Disclosure List)					
15.3. US State regulations					
4-AMINO-3,3-DIMETHYLBU	JTYLTRIMETHOXYSILANE	E(1579	923-74-5)		
U.S California - Proposition	n 65 - Carcinogens List	No			
U.S California - Proposition Toxicity	n 65 - Developmental	No			
U.S California - Proposition Toxicity - Female	n 65 - Reproductive	No			
U.S California - Proposition Toxicity - Male	n 65 - Reproductive	No			
4-Amino-3,3-dimethylbutyl	trimethoxysilane (157923-	-74-5)			
U.S California -	U.S California -		J.S California -	U.S California -	No significance risk level
Proposition 65 - Carcinogens List	Proposition 65 - Developmental Toxicity		Proposition 65 - Reproductive Toxicity -	Proposition 65 - Reproductive Toxicity -	(NSRL)
Carolinogenia Elot	Bevelopmental roxioity		emale	Male	
No	No		lo	No	
Methanol (67-56-1)					
U.S California -	U.S California -	τ	J.S California -	U.S California -	No significance risk level
Proposition 65 -	Proposition 65 -		Proposition 65 -	Proposition 65 -	(NSRL)
Carcinogens List	Developmental Toxicity		Reproductive Toxicity -	Reproductive Toxicity - Male	
No	Yes		lo	No	
Methanol (67-56-1)					
U.S California - Proposition	n 65 - Maximum Allowable I	Jose	evels (MADL)		
U.S California - SCAQMD					
U.S California - SCAQMD					
U.S California - Toxic Air C	Contaminant List (AB 1807,	AB 27	28)		
				ecies, Container and Spill Resi	dues
U.S Connecticut - Hazardo					
U.S Connecticut - Hazardous Air Pollutants - HLVs (8 hr) U.S Connecticut - Volatile Substances					
U.S Delaware - Pollutant D	Discharge Requirements - R				
U.S Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations					
U.S Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs) U.S Idaho - Occupational Exposure Limits - TWAs					
U.S Illinois - Toxic Air Contaminants					
U.S Louisiana - Reportable Quantity List for Pollutants					
U.S Maine - Air Pollutants - Hazardous Air Pollutants					
U.S Maine - Chemicals of High Concern U.S Massachusetts - Allowable Ambient Limits (AALs)					
U.S Massachusetts - Allowable Amblent Limits (AALS) U.S Massachusetts - Allowable Threshold Concentrations (ATCs)					
U.S Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1					
U.S Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2					
U.S Massachusetts - Oil & Hazardous Material List - Reportable Quantity U.S Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1					
U.S Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1 U.S Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2					
U.S Massachusetts - Right	U.S Massachusetts - Oli & Hazardous Material List - Soli Reportable Concentration - Reporting Category 2 U.S Massachusetts - Right To Know List				
U.S Massachusetts - Three U.S Massachusetts - Toxic		its (TE	ELs)		
U.J IVIASSAUTIUSELLS - TOXIC					

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Methanol (67-56-1)
U.S Michigan - Occupational Exposure Limits - Skin Designations
U.S Michigan - Occupational Exposure Limits - STELs
U.S Michigan - Occupational Exposure Limits - TWAs
U.S Michigan - Polluting Materials List
U.S Minnesota - Chemicals of High Concern
U.S Minnesota - Groundwater Health Risk Limits
U.S Minnesota - Hazardous Substance List
U.S Minnesota - Permissible Exposure Limits - Skin Designations
U.S Minnesota - Permissible Exposure Limits - STELs
U.S Minnesota - Permissible Exposure Limits - TWAs
U.S New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour
U.S New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual
U.S New Jersey - Discharge Prevention - List of Hazardous Substances
U.S New Jersey - Environmental Hazardous Substances List
U.S New Jersey - Right to Know Hazardous Substance List
U.S New Jersey - Special Health Hazards Substances List
U.S New Jersey - Water Quality - Ground Water Quality Criteria
U.S New Jersey - Water Quality - Practical Quantitation Levels (PQLs)
U.S New York - Occupational Exposure Limits - Skin Designations
U.S New York - Occupational Exposure Limits - TWAs
U.S New York - Reporting of Releases Part 597 - List of Hazardous Substances
U.S North Dakota - Air Pollutants - Guideline Concentrations - 1-Hour
U.S North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S North Dakota - Hazardous Wastes - Discarded Chemical Products, Off-Specification Species, Container and Spill Residues
U.S Oregon - Permissible Exposure Limits - TWAs
U.S Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S Pennsylvania - RTK (Right to Know) List
U.S Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour
U.S Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual
U.S South Carolina - Toxic Air Pollutants - Maximum Allowable Concentrations
U.S South Carolina - Toxic Air Pollutants - Pollutant Categories U.S Tennessee - Occupational Exposure Limits - Skin Designations
U.S Tennessee - Occupational Exposure Limits - Stells
U.S Tennessee - Occupational Exposure Limits - STELS
U.S Texas - Effects Screening Levels - Long Term
U.S Texas - Effects Screening Levels - Short Term
U.S Vermont - Permissible Exposure Limits - Skin Designations
U.S Vermont - Permissible Exposure Limits - SKII Designations
U.S Vermont - Permissible Exposure Limits - TWAs
U.S Washington - Dangerous Waste - Discarded Chemical Products List
U.S Washington - Permissible Exposure Limits - Skin Designations
U.S Washington - Permissible Exposure Limits - STELs
U.S Washington - Permissible Exposure Limits - TWAs

#### **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.: Chemcial 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::

1004.4			7/0
H318		Causes serious eye damage	
H315		Causes skin irritation	
H311		Toxic in contact with skin	
H301		Toxic if swallowed	
H225		Highly flammable liquid and vapor	
STOT SE 3		Specific target organ toxicity (single exposure) Category 3	
STOT SE 3		Specific target organ toxicity (single exposure) Category 3	
STOT SE 1		Specific target organ toxicity (single exposure) Category 1	
Skin Irrit. 2		Skin corrosion/irritation Category 2	
Flam. Liq. 2		Flammable liquids Category 2	
Eye Irrit. 2A		Serious eye damage/eye irritation Category 2A	
Eye Dam. 1		Serious eye damage/eye irritation Category 1	
Acute Tox. 3 (Oral)		Acute toxicity (oral) Category 3	
Acute Tox. 3 (Inhalation:vap	oour)	Acute toxicity (inhalation:vapor) Category 3	
Acute Tox. 3 (Dermal)		Acute toxicity (dermal) Category 3	

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H319	Causes serious eye irritation
H331	Toxic if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H370	Causes damage to organs

#### **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.

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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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