



SAFETY DATA SHEET

Preparation Date 14-May-2009

Revision Date 11-Feb-2014

Revision Number 3

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Name **ORGANO SILANE AE-301**

Other means of identification

Product Code 3674500
CAS Number 1760-24-3
Formula C₈H₂₂N₂O₃Si
Synonyms 1,2-Ethanediamine, N-(3-(Trimethoxysilyl)Propyl)-

Recommended use of the chemical and restrictions on use

Recommended Use Coatings
Uses advised against Repeated contact with food. Avoid prolonged contact with eyes, skin, and clothing.

Details of the supplier of the safety data sheet

Supplier Address ACETO CORPORATION
4 Tri Harbor Court
Port Washington, NY 11050-4661
Phone: (516) 627-6000
Fax: (516) 627-6093
Email: aceto@aceto.com

Emergency Telephone Number(s)

ChemTrec: 1-800-424-9300 Outside of the United States: 1-703-527-3887

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Inhalation (Gases)	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin Corrosion/Irritation	Category 2
Serious eye damage/eye irritation	Category 1
Respiratory Sensitization	Category 1
Skin Sensitization	Category 1A
Specific target organ toxicity (single exposure)	Category 3

Label elements**Emergency Overview****Signal Word****DANGER****Hazard statements**

Harmful if inhaled
 Causes skin irritation
 Causes serious eye damage
 May cause allergy or asthma symptoms or breathing difficulties if inhaled
 May cause an allergic skin reaction
 May cause respiratory irritation. May cause drowsiness or dizziness

**Appearance**

Clear to Pale Yellow

Physical State

Liquid

Odor

Mild Ammonia-like

Precautionary Statements - Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Wash face, hands and any exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection
 In case of inadequate ventilation wear respiratory protection
 Contaminated work clothing should not be allowed out of the workplace

Precautionary Statements - Response

Specific treatment (see supplemental first aid instructions on this label)
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a POISON CENTER or doctor/physician
 IF ON SKIN: Wash with plenty of soap and water
 Take off contaminated clothing and wash before reuse
 If skin irritation or rash occurs: Get medical advice/attention
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed
 Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None known

Other Information

- Harmful to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms 1,2-Ethanediamine, N-(3-(Trimethoxysilyl)Propyl)-

Formula C₈H₂₂N₂O₃Si

Chemical Name	CAS-No	Weight %	North American Hazard Indicator
Ethylene Diamine	107-15-3	0.5	10 ppm TWA; 25 mg/m ³ TWA 10 ppm TWA
1,2-Ethanediamine, N-(3-(Trimethoxysilyl)Propyl)-	1760-24-3	99	True
Methanol	67-56-1	0.5	200 ppm TWA; 260 mg/m ³ TWA 250 ppm STEL 200 ppm TWA

4. FIRST AID MEASURES

First Aid Measures

General Advice Show this safety data sheet to the doctor in attendance.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult a physician.

Skin Contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Consult a physician.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Consult a physician.

Ingestion Do not induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Consult a physician.

Protection of First-aiders Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Most important symptoms and effects, both acute and delayed

Main Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties Combustible liquid.

Suitable Extinguishing Media Carbon dioxide (CO₂). Dry powder. Foam.

Unsuitable Extinguishing Media Water.

Hazardous Combustion Products Thermal decomposition or combustion may produce hazardous gases and/or materials.

Explosion Data

Sensitivity to mechanical impact Not available.

Sensitivity to static discharge Not available.

Specific Hazards Arising from the Chemical

Keep product and empty container away from heat and sources of ignition.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures****Personal Precautions**

Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental Precautions

Local authorities should be advised if significant spillages cannot be contained. Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Should not be released into the environment.

Methods and material for containment and cleaning up**Methods for Cleaning up**

Evacuate personnel to safe areas. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE**Precautions for Safe Handling****Handling**

Use only in an area equipped with a safety shower. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation. Use only in well-ventilated areas. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Avoid repeated exposure.

Conditions for safe storage, including any incompatibilities**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers. Protect from water. Keep away from heat and sources of ignition.

Incompatible Materials

Oxidizing agents. Acids. Peroxides. Alcohols.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ethylene Diamine 107-15-3	10 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route	10 ppm TWA; 25 mg/m ³ TWA	1000 ppm IDLH

1,2-Ethanediamine, N-(3-(Trimethoxysilyl)Propyl)- 1760-24-3	-	-	-
Methanol 67-56-1	200 ppm TWA 250 ppm STEL Skin - potential significant contribution to overall exposure by the cutaneous route	200 ppm TWA; 260 mg/m ³ TWA	6000 ppm IDLH

IDLH: *Immediately Dangerous to Life or Health*

Appropriate engineering controls

Engineering Controls Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face Protection Tightly fitting safety goggles.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory Protection In case of insufficient ventilation, wear suitable respiratory equipment.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance Clear to Pale Yellow
Physical State Liquid
Odor Mild Ammonia-like
Odor Threshold Not available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	
Melting/freezing point	< -36 °C	Literary Reference
Boiling Point/Range	259 °C	
Flash Point	120 °C	No information available
Evaporation Rate	Not available	
Flammability Limits in Air		
upper flammability limit	No information available	
lower flammability limit	Not available	
Vapor Pressure	< 1 mmHg @ 25°C	
Vapor Density	> 1	
Specific Gravity	1.028g/cm ³ @ 25°C	
Water Solubility	Reacts	
Solubility in other solvents	No information available	
Partition coefficient: n-octanol/water	Not available	
Autoignition temp (°C)	300 °C	Estimated
Decomposition temperature	No data available	
Viscosity, kinematic	No information available	
Viscosity, dynamic	Not available	
Explosive Properties	No information available	
Oxidizing Properties	No information available	

Other Information

Softening Point No information available
Molecular Weight 222.36
VOC Content No information available

Density No information available
Bulk Density No information available

10. STABILITY AND REACTIVITY

Reactivity Not applicable.
Chemical Stability Stable under recommended storage conditions

Conditions to Avoid Keep away from open flames, hot surfaces and sources of ignition. Protect from water. Avoid moisture. May decompose on exposure to moist air or water. Reacts with water and moisture in air to liberate methanol.

Incompatible Materials Oxidizing agents. Acids. Peroxides. Alcohols.

Hazardous Decomposition Products Carbon monoxide Carbon dioxide (CO₂) Nitrogen Oxides (NO_x)
Silicone oxide Organic vapors Methanol

Possibility of Hazardous Reactions None under normal processing

11. TOXICOLOGICAL INFORMATION

Product Information

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethylene Diamine 107-15-3	= 637 mg/kg (Rat)	= 1000 mg/kg (Rat) = 550 mg/kg (Rabbit)	-
1,2-Ethanediamine, N-(3-(Trimethoxysilyl)Propyl)- 1760-24-3	= 7460 µL/kg (Rat)	-	-
Methanol 67-56-1	= 5628 mg/kg (Rat)	= 15800 mg/kg (Rabbit)	= 64000 ppm (Rat) 4 h = 83.2 mg/L (Rat) 4 h

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 7513 mg/kg
ATEmix (dermal) 600 mg/kg

Information on likely routes of exposure

Eyes Severe eye irritation. Risk of serious damage to eyes. May cause chemical conjunctivitis. May cause corneal injury. Avoid contact with eyes.

Skin Toxic in contact with skin. Severe skin irritation. Possible burns. May cause sensitization by skin contact. May cause dermatitis. Avoid contact with skin.

Inhalation Harmful by inhalation. Severe respiratory irritant. Coughing. Headache. Nausea. Shortness of breath. Can produce delayed pulmonary edema. Avoid breathing vapors or mists.

Ingestion Harmful if swallowed. Possible burns. Do not ingest.

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Ethylene Diamine 107-15-3	A4 - Not Classifiable as a Human Carcinogen			

Irritation Skin,rabbit: 500 mg OPEN ; Eye,rabbit: 15 mg SEV

Eye damage/irritation No information available.

Skin Corrosion/Irritation No information available.

Sensitization No information available.

Reproductive Effects No information available.

Mutagenic Effects No information available.

Developmental Effects No information available.

STOT - single exposure No information available.

STOT - Repeated Exposure No information available.

Chronic Toxicity Avoid repeated exposure.

Aspiration Hazard No information available.

Numerical measures of toxicity - Product Information**Acute Toxicity**

ATEmix (inhalation-gas) 4545 mg/L

ATEmix (inhalation-dust/mist) 1.5 mg/L

ATEmix (inhalation-vapor) 11 mg/L

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Harmful to aquatic life with long lasting effects. Avoid release to the environment.

0.5 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Freshwater Algae Data	Freshwater Fish Species Data	Microtox Data	Water Flea Data
Ethylene Diamine 107-15-3	= 151 mg/L EC50 = 645 mg/L EC50		= 20 mg/L EC50 Photobacterium phosphoreum 15 min = 29 mg/L EC50 Pseudomonas putida 17 h	= 17 mg/L EC50

Methanol 67-56-1			= 39000 mg/L EC50 Photobacterium phosphoreum 25 min = 40000 mg/L EC50 Photobacterium phosphoreum 15 min = 43000 mg/L EC50 Photobacterium phosphoreum 5 min	
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Persistence / Degradability No information available.

Bioaccumulation / Accumulation No information available.

Mobility in Soil No information available.

Chemical Name	log Pow =
Ethylene Diamine 107-15-3	-1.221
Methanol 67-56-1	-0.77

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Method Contact waste disposal services. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of in accordance with local regulations. Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

DOT Not regulated

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA Not regulated

IMDG/IMO Not regulated

RID Not regulated

ADR Not regulated

ADN Not regulated

15. REGULATORY INFORMATION

International Inventories

U.S.A. (TSCA)	Complies
Canada (DSL)	Complies
EU (EINECS)	Complies
EU (ELINCS)	Does not Comply
Japan (ENCS)	Complies
China	Complies
Korea (KECL)	Complies
Philippines (PICCS)	Complies
Australia (AICS)	Complies

Chemical Name	U.S.A. (TSCA)	Canada (DSL)	EU (EINECS)	EU (ELINCS)	
Ethylene Diamine	Present	Present	Present	-	
1,2-Ethanediamine, N-(3-(Trimethoxysilyl)Propyl)	Present	Present	Present	-	
Methanol	Present	Present	Present	-	
Chemical Name	Japan (ENCS)	China	Korea (KECL)	Philippines (PICCS)	Australia (AICS)
Ethylene Diamine	Present (2)-150	Present	Present	Present	Present
1,2-Ethanediamine, N-(3-(Trimethoxysilyl)Propyl)	Present (2)-2083;(2)-2059	Present	Present	Present	Present
Methanol	Present (2)-201	Present	Present	Present	Present

Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Component	SARA 313 - Threshold Values
Methanol 67-56-1 (0.5)	1.0 % de minimis concentration

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	Yes

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following HAPs:

Chemical Name	HAPS data
Methanol	Present

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	CERCLA/SARA Hazardous Substances	CERCLA/SARA RQ	RQ
Ethylene Diamine 107-15-3	5000 lb final RQ; 2270 kg final RQ		5000 lb final RQ; 2270 kg final RQ
Methanol 67-56-1	5000 lb final RQ; 2270 kg final RQ		5000 lb final RQ; 2270 kg final RQ

*State Regulations***California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS-No	Category	Type
Methanol	67-56-1	Developmental toxicity, initial date 3/16/12	

State Right-to-Know

This product contains the following State Right-to-Know chemicals:

Chemical Name	New Jersey	Massachusetts	Illinois	Rhode Island	Pennsylvania
Ethylene Diamine 107-15-3	sn 0875	Extraordinarily hazardous		Toxic; Flammable	Environmental hazard
Methanol 67-56-1	sn 1222	Present	Present	Toxic; Flammable	Environmental hazard

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

*Canada***WHMIS Statement**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

NFPA

Health 3

Flammability 1

Instability 0

Physical Hazard 0



Preparation Date 14-May-2009

Revision Date 11-Feb-2014

Revision Summary

Not available

Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS