

# Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878 Issue date: 1/13/2015 Revision date: 3/14/2024 Version: 2.2

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

# 1.1. Product identifier

Product form : Mixture

Product name : TRIMETHOXYSILYLPROPYL MODIFIED (POLYETHYLENIMINE), 50% in isopropanol

Product code : SSP-060

Synonyms : AZIRIDINE, POLYMER WITH (3-CHLOROPROPYL)TRIMETHOXYSILANE;

POLYETHYLENEIMINE, [N-(TRI(ISOPROPOXY, METHOXY)SILYLPROPYL]-,

**HYDROCHLORIDES** 

Product group : Blend

Chemical family : ORGANOSILANE

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

#### 1.2.1. Relevant identified uses

Use of the substance/mixture : Chemical intermediate

#### 1.2.2. Uses advised against

No additional information available

## 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

## Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 2

Skin corrosion/irritation, Category 2

Serious eye damage/eye irritation, Category 2

Specific target organ toxicity – Single exposure, Category 3, Narcosis

H336

Full text of H- and EUH-statements: see section 16

## Adverse physicochemical, human health and environmental effects

No additional information available

### 2.2. Label elements

# Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)





GHS02 GHS07

Signal word (CLP) : Danger
Contains : Isopropanol

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Hazard statements (CLP) : H225 - Highly flammable liquid and vapour.

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

H336 - May cause drowsiness or dizziness.

Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

No smoking.

P233 - Keep container tightly closed.

P240 - Ground and bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting equipment.

P261 - Avoid breathing vapours.

P264 - Wash hands thoroughly after handling.

#### 2.3. Other hazards

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

# **SECTION 3: Composition/information on ingredients**

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Isopropanol	CAS-No.: 67-63-0 EC-No.: 200-661-7 EC Index-No.: 603-117-00-0	50	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 STOT SE 3, H336
Trimethoxysilylpropyl modified (polyethylenimine)	CAS-No.: 136856-91-2	50	Skin Irrit. 2, H315 Eye Irrit. 2, H319

Full text of H- and EUH-statements: see section 16

# **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 person to fresh air and keep

: Remove person to fresh air and keep comfortable for breathing. Call a POISON

CENTER/doctor if you feel unwell.

First-aid measures after skin contact : Wash with plenty of 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/effects after inhalation : May cause drowsiness or dizziness. May cause irritation to the respiratory tract.

Overexposure may cause: Cough. Headache. Nausea.

Symptoms/effects after skin contact : Causes skin irritation.

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

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Symptoms/effects after ingestion

: May be harmful if swallowed. Oral toxicity is associated with isopropanol or methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness. Onset of symptoms may be delayed up to 48 hours.

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

No additional information available

# **SECTION 5: Firefighting measures**

#### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Foam. Carbon dioxide. Dry chemical.

## 5.2. Special hazards arising from the substance or mixture

Fire hazard : Highly flammable liquid and vapour. Irritating fumes and organic acid vapors may develop

when material is exposed to elevated temperatures or open flame.

Explosion hazard : May form flammable/explosive vapour-air mixture.

#### 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 vapour and mist.

#### **SECTION 6: Accidental release measures**

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges.

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.

# 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. Use only non-sparking tools.

## 6.4. Reference to other sections

See Section 8. Exposure controls and personal protection.

## **SECTION 7: Handling and storage**

# 7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.

Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapour and mist. Use only outdoors or in a well-ventilated area. Provide good ventilation in process area to prevent formation of

vapour. Containers and transfer lines require grounding during use. Take precautionary measures against static discharge. Use only non-sparking tools.

Hygiene measures : Wash contaminated clothing before reuse. Wash hands thoroughly after handling.

# 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond

container and receiving equipment. Use explosion-proof electrical equipment.

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Storage conditions : Keep container tightly closed.

Incompatible materials : Acids. alcohols. Oxidizing agent. Peroxides.

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

#### 8.1.1 National occupational exposure and biological limit values

No additional information available

#### 8.1.2. Recommended monitoring procedures

No additional information available

#### 8.1.3. Air contaminants formed

No additional information available

#### 8.1.4. DNEL and PNEC

No additional information available

#### 8.1.5. Control banding

No additional information available

#### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

### Appropriate engineering controls:

Provide local exhaust or general room ventilation.

#### 8.2.2. Personal protection equipment

#### 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.

## 8.2.2.1. Eye and face protection

## Eye protection:

Chemical goggles. Contact lenses should not be worn

#### 8.2.2.2. Skin protection

#### Skin and body protection:

Wear suitable protective clothing

#### Hand protection:

Neoprene or nitrile rubber gloves

## 8.2.2.3. Respiratory protection

# 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.

#### 8.2.2.4. Thermal hazards

No additional information available

#### 8.2.3. Environmental exposure controls

No additional information available

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# **SECTION 9: Physical and chemical properties**

## 9.1. Information on basic physical and chemical properties

Physical state : Liquid

Colour : Straw yellow. Amber.

Appearance : Clear solution.

Molecular mass : 1500 – 1800 g/mol

Odour : Not available

Odour threshold : Not available

Melting point : < 0 °C

Freezing point : Not available

Boiling point : 82 °C (initial, isopropanol)

Flammability : Highly flammable liquid and vapour.

Explosive limits : 2.5 – 12 vol %
Lower explosion limit : Not available
Upper explosion limit : Not available
Flash point : 12 °C

Auto-ignition temperature : 455 (isopropanol)

Decomposition temperature : Not available
pH : Not available
Viscosity, kinematic : 125 – 175 mm²/s

Solubility : Reacts with water. Dissolves.

Partition coefficient n-octanol/water (Log Kow) : Not available Vapour pressure : Not available Vapour pressure at 50°C : Not available Density : Not available Relative density : 0.92 Relative vapour density at 20°C : > 2

Particle characteristics : Not applicable

9.2. Other information

### 9.2.1. Information with regard to physical hazard classes

Explosion limits : 2.5 – 12 vol %

9.2.2. Other safety characteristics

VOC content : > 45 °C

# **SECTION 10: Stability and reactivity**

## 10.1. Reactivity

No additional information available

## 10.2. Chemical stability

Stable in sealed containers stored under a dry inert atmosphere.

# 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Heat. Open flame. Sparks.

## 10.5. Incompatible materials

Acids. alcohols. Oxidizing agent. Peroxides.

#### 10.6. Hazardous decomposition products

Methanol. Organic amine vapors.

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# **SECTION 11: Toxicological information**

## 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Isopropanol (67-63-0)	
LD50 oral rat	1870 mg/kg
LD50 dermal rabbit	4059 mg/kg
LC50 Inhalation - Rat	72600 mg/m³ (Exposure time: 4 h)

 Skin corrosion/irritation
 : Causes skin irritation.

 Serious eye damage/irritation
 : Causes serious eye irritation.

Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Isopropanol (67-63-0)
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IARC group 3 - Not classifiable

Reproductive toxicity : Not classified

STOT-single exposure : May cause drowsiness or dizziness. Additional information : May cause respiratory irritation.

#### Isopropanol (67-63-0)

STOT-single exposure May cause drowsiness or dizziness.

STOT-repeated exposure : Not classified Aspiration hazard : Not classified

# TRIMETHOXYSILYLPROPYL MODIFIED (POLYETHYLENIMINE), 50% in isopropanol

Viscosity, kinematic 125 – 175 mm²/s

## Trimethoxysilylpropyl modified (polyethylenimine) (136856-91-2)

Viscosity, kinematic 125 – 175 mm²/s

# 11.2. Information on other hazards

No additional information available

# **SECTION 12: Ecological information**

## 12.1. Toxicity

Hazardous to the aquatic environment, short-term : Not classified

(acute)

Hazardous to the aquatic environment, long-term : Not classified

(chronic)

Isopropanol (67-63-0)	
LC50 - Fish [1]	9640 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 - Fish [2]	11130 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 - Crustacea [1]	13299 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 72h - Algae [1]	> 1000 mg/l (Species: Desmodesmus subspicatus)
EC50 96h - Algae [1]	> 1000 mg/l (Species: Desmodesmus subspicatus)

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### 12.2. Persistence and degradability

No additional information available

## 12.3. Bioaccumulative potential

## Isopropanol (67-63-0)

Partition coefficient n-octanol/water (Log Pow) 0.05 (at 25 °C)

#### 12.4. Mobility in soil

No additional information available

# 12.5. Results of PBT and vPvB assessment

No additional information available

#### 12.6. Endocrine disrupting properties

No additional information available

## 12.7. Other adverse effects

Other adverse effects : This substance may be hazardous to the environment.

## **SECTION 13: Disposal considerations**

## 13.1. Waste treatment methods

Product/Packaging 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...

Additional information : Handle empty containers with care because residual vapours are flammable.

Ecological information : Avoid release to the environment.

# SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1993	UN 1993	UN 1993	UN 1993	UN 1993
14.2. UN proper shippin	g name			
FLAMMABLE LIQUID, N.O.S.	FLAMMABLE LIQUID, N.O.S.	Flammable liquid, n.o.s.	FLAMMABLE LIQUID, N.O.S.	FLAMMABLE LIQUID, N.O.S.
Transport document descr	iption			
UN 1993 FLAMMABLE LIQUID, N.O.S. (TRIMETHOXYSILYLPRO PYL MODIFIED (POLYETHYLENIMINE), 50% in isopropanol), 3, II, (D/E)	UN 1993 FLAMMABLE LIQUID, N.O.S. (TRIMETHOXYSILYLPRO PYL MODIFIED (POLYETHYLENIMINE), 50% in isopropanol), 3, II	UN 1993 Flammable liquid, n.o.s. (TRIMETHOXYSILYLPRO PYL MODIFIED (POLYETHYLENIMINE), 50% in isopropanol), 3, II	UN 1993 FLAMMABLE LIQUID, N.O.S. (TRIMETHOXYSILYLPRO PYL MODIFIED (POLYETHYLENIMINE), 50% in isopropanol), 3, II	UN 1993 FLAMMABLE LIQUID, N.O.S. (TRIMETHOXYSILYLPRO PYL MODIFIED (POLYETHYLENIMINE), 50% in isopropanol), 3, II
14.3. Transport hazard class(es)				
3	3	3	3	3
3	3	3	3	3

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ADR	IMDG	IATA	ADN	RID
4.4. Packing group				
II	II	II	II	II
4.5. Environmental haz	zards			
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No

33

1993

## 14.6. Special precautions for user

#### **Overland transport**

Classification code (ADR) : F1

Special provisions (ADR) : 274, 601, 640C

Limited quantities (ADR) : 11
Excepted quantities (ADR) : E2
Packing instructions (ADR) : P001
Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T7

Portable tank and bulk container special provisions : TP1, TP8, TP28

(ADR)

Tank code (ADR) : L1.5BN

Vehicle for tank carriage : FL

Transport category (ADR) : 2

Special provisions for carriage - Operation (ADR) : S2, S20

Hazard identification number (Kemler No.) : 33

Orange plates

Tunnel restriction code (ADR) : D/E

Transport by sea

Special provisions (IMDG): 274Limited quantities (IMDG): 1 LExcepted quantities (IMDG): E2Packing instructions (IMDG): P001IBC packing instructions (IMDG): IBC02Tank instructions (IMDG): T7

Tank special provisions (IMDG) : TP1, TP8, TP28

EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-E
Stowage category (IMDG) : B

Air transport

PCA Excepted quantities (IATA) : E2 PCA Limited quantities (IATA) Y341 PCA limited quantity max net quantity (IATA) 1L PCA packing instructions (IATA) 353 PCA max net quantity (IATA) : 5L CAO packing instructions (IATA) : 364 CAO max net quantity (IATA) : 60L Special provisions (IATA) : A3 ERG code (IATA) : 3H

Inland waterway transport

Classification code (ADN) : F1

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Special provisions (ADN) : 274, 601, 640C

Limited quantities (ADN) : 1 L

Excepted quantities (ADN) : E2

Carriage permitted (ADN) : T

Equipment required (ADN) : PP, EX, A

Ventilation (ADN) : VE01

Number of blue cones/lights (ADN) : 1

#### Rail transport

Classification code (RID) : F1

Special provisions (RID) : 274, 601, 640C

Limited quantities (RID) : 1L

Excepted quantities (RID) : E2

Packing instructions (RID) : P001

Mixed packing provisions (RID) : MP19

Portable tank and bulk container instructions (RID) : T7

Portable tank and bulk container special provisions : TP1, TP8, TP28

(RID)

Tank codes for RID tanks (RID): L1.5BNTransport category (RID): 2Colis express (express parcels) (RID): CE7Hazard identification number (RID): 33

## 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

# **SECTION 15: Regulatory information**

## 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

## **REACH Annex XVII (Restriction List)**

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(a)	TRIMETHOXYSILYLPRO PYL MODIFIED (POLYETHYLENIMINE), 50% in isopropanol; Isopropanol	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F
3(b)	TRIMETHOXYSILYLPRO PYL MODIFIED (POLYETHYLENIMINE), 50% in isopropanol; Isopropanol; Trimethoxysilylpropyl modified (polyethylenimine)	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
40.	Isopropanol	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.

## **REACH Annex XIV (Authorisation List)**

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

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#### **REACH Candidate List (SVHC)**

Contains no substance(s) listed on the REACH Candidate List

#### **PIC Regulation (Prior Informed Consent)**

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

#### **POP Regulation (Persistent Organic Pollutants)**

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

#### Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

#### VOC Directive (2004/42)

VOC content : > 45 °C

#### **Explosives Precursors Regulation (2019/1148)**

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

#### **Drug Precursors Regulation (273/2004)**

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

#### 15.1.2. National regulations

No additional information available

## 15.2. Chemical safety assessment

No additional information available

# **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; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information

: Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:		
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2	
Flam. Liq. 2	Flammable liquids, Category 2	
H225	Highly flammable liquid and vapour.	
H302	Harmful if swallowed.	
H315	Causes skin irritation.	
H319	Causes serious eye irritation.	
H336	May cause drowsiness or dizziness.	
Skin Irrit. 2	Skin corrosion/irritation, Category 2	
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis	

SDS EU (REACH Annex II) - Custom v22

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