

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 29-Jun-2010 Revision Date 29-Sep-2023 Revision Number 6

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: <u>Ethanol, denatured, 85.4%</u>

Cat No. : 313370000, 313370250, 313371000

 CAS No
 1558-33-4

 EC No
 216-319-5

 Molecular Formula
 C2 H5 Cl3 Si

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company

UK entity/business name

Fisher Scientific UK Bishop Meadow Road,

Loughborough, Leicestershire LE11 5RG, United Kingdom

EU entity/business name Thermo Fisher Scientific

Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Physical hazards

Flammable liquids Category 3 (H226)

Health hazards

Acute Inhalation Toxicity - Vapors Category 3 (H331)

Ethanol, denatured, 85.4% Revision Date 29-Sep-2023

Skin Corrosion/Irritation Category 1 A (H314)
Serious Eye Damage/Eye Irritation Category 1 (H318)

Environmental hazards

Chronic aquatic toxicity Category 3 (H412)

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H226 - Flammable liquid and vapor

H331 - Toxic if inhaled

H314 - Causes severe skin burns and eye damage

H412 - Harmful to aquatic life with long lasting effects

EUH014 - Reacts violently with water

EUH071 - Corrosive to the respiratory tract

Precautionary Statements

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/physician

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

2.3. Other hazards

Reacts violently with water

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB) Lachrymator (substance which increases the flow of tears)

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Silane, dichloro(chloromethyl)methyl-	1558-33-4	EEC No. 216-319-5	>95	Flam. Liq. 3 (H226) Skin Corr. 1A (H314) Eye Dam. 1 (H318)

Ethanol, denatured, 85.4% Revision Date 29-Sep-2023

		Acute Tox. 3 (H331)
		Aquatic Chronic 3 (H412)
		(EUH014)
		(EUH071)

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

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

the case of contact with eyes, rinse immediately with plenty of water and seek medical

advice.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical

attention is required.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Inhalation If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim

ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove to fresh

air. Immediate medical attention is required.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to

protect themselves and prevent spread of contamination.

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

Causes burns by all exposure routes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue

and danger of perforation

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

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

CO₂, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

Water.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous

Ethanol, denatured, 85.4%

Revision Date 29-Sep-2023

membranes. Reacts violently with water. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO2), Silicon dioxide, Hydrogen chloride gas.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges.

6.2. Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Do not expose spill to water. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Do not allow contact with water. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from water or moist air. Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Flammables area. Keep away from heat, sparks and flame.

Technical Rules for Hazardous Substances (TRGS) 510 Class 3 Storage Class (LGK) (Germany)

7.3. Specific end use(s)

Ethanol, denatured, 85.4%

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

	Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
ſ	Silane,				DNEL = 1.2mg/kg
1	dichloro(chloromethyl)methyl-				bw/day
	1558-33-4 (>95)				

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Silane,			$DNEL = 9.3mg/m^3$	$DNEL = 4.1 mg/m^3$
dichloro(chloromethyl)methyl-				
1558-33-4 (>95)				

Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Silane,	PNEC = 0.2mg/L	PNEC = 0.54mg/kg		PNEC = 66.7mg/L	PNEC = 0.34 mg/kg
dichloro(chloromethyl)met		sediment dw		-	soil dw
hyl-					
1558-33-4 (>95)					

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Silane, dichloro(chloromethyl)met hyl-	PNEC = 0.02mg/L	PNEC = 0.054mg/kg sediment dw		PNEC = 16.7mg/kg food	
1558-33-4 (>95)					

8.2. Exposure controls

Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Revision Date 29-Sep-2023

Ethanol, denatured, 85.4% Revision Date 29-Sep-2023

Personal protective equipment

Eye Protection Goggles (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Nitrile rubber	See manufacturers	-	EN 374	(minimum requirement)
Neoprene	recommendations			
Natural rubber				
PVC				

Skin and body protection Long sleeved clothing.

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection When workers are facing concentrations above the exposure limit they must use

appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used

and maintained properly

Large scale/emergency use Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits

are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Organic gases and vapours filter Type A Brown conforming to

EN14387

Small scale/Laboratory use Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure

limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN

141

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls Prevent product from entering drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Liquid

Appearance Light yellow

Odor
Odor Threshold
No data available

Boiling Point/Range 121 - 122 °C / 249.8 - 251.6 °F

Flammability (liquid) Flammable On basis of test data

Flammability (solid,gas) Not applicable Liquid

Explosion Limits No data available

Flash Point 35 °C / 95 °F Method - No information available

Autoignition Temperature

No data available

No data available

No data available

pH No information availableViscosity No data available

Water Solubility Reacts violently with water

Ethanol, denatured, 85.4% Revision Date 29-Sep-2023

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Vapor Pressure No data available

Density / Specific Gravity 1.26

Bulk DensityNot applicableLiquidVapor DensityNo data available(Air = 1.0)

Particle characteristics Not applicable (liquid)

9.2. Other information

Molecular FormulaC2 H5 Cl3 SiMolecular Weight163.51

Explosive Properties explosive air/vapour mixtures possible

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity Yes

10.2. Chemical stability

Reacts violently with water. Moisture sensitive.

10.3. Possibility of hazardous reactions

Hazardous PolymerizationNo information available.Hazardous ReactionsReacts violently with water.

10.4. Conditions to avoid

Incompatible products. Exposure to moist air or water. Keep away from open flames, hot

surfaces and sources of ignition. Exposure to moisture.

10.5. Incompatible materials

Strong oxidizing agents. Peroxides. Alcohols. Amines. Strong bases. Water. Metals. Strong

acids.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO2). Silicon dioxide. Hydrogen chloride gas.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Product Information

(a) acute toxicity;

OralNo data availableDermalNo data availableInhalationCategory 3

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Silane, dichloro(chloromethyl)methyl-	LD50 = 2200 mg/kg (Rat)	-	LC50 = 6.8 mg/L (Rat) 4 h

(b) skin corrosion/irritation; Category 1 A

ACR31337

Ethanol, denatured, 85.4% Revision Date 29-Sep-2023

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory No data available No data available Skin

No data available (e) germ cell mutagenicity;

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

No data available (g) reproductive toxicity;

(h) STOT-single exposure; No data available

No data available (i) STOT-repeated exposure;

No information available. **Target Organs**

(i) aspiration hazard; No data available

Other Adverse Effects The toxicological properties have not been fully investigated.

delayed

Symptoms / effects, both acute and Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

11.2. Information on other hazards

Endocrine Disrupting Properties

Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Do not empty into drains. Harmful to aquatic organisms, may cause long-term adverse **Ecotoxicity effects**

> effects in the aquatic environment. The product contains following substances which are hazardous for the environment. Reacts with water so no ecotoxicity data for the substance

is available.

12.2. Persistence and degradability Readily biodegradable

Persistence Persistence is unlikely, based on information available.

Degradability Reacts with water.

Degradation in sewage Contains substances known to be hazardous to the environment or not degradable in waste

treatment plant water treatment plants. Reacts violently with water.

Product does not bioaccumulate due to reaction with water 12.3. Bioaccumulative potential

Ethanol, denatured, 85.4%

12.4. Mobility in soil Reacts violently with water Is not likely mobile in the environment.

12.5. Results of PBT and vPvB

assessment

Reacts violently with water. Substance is not considered persistent, bioaccumulative and

Revision Date 29-Sep-2023

toxic (PBT) / very persistent and very bioaccumulative (vPvB).

12.6. Endocrine disrupting

properties

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

Persistent Organic Pollutant Ozone Depletion Potential This product does not contain any known or suspected substance This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused

Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives

on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point. Empty containers

retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and

empty container away from heat and sources of ignition.

European Waste Catalogue (EWC) According to the European Waste Catalog, Waste Codes are not product specific, but

application specific.

Other Information Do not flush to sewer. Waste codes should be assigned by the user based on the

application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH

and harm aquatic organisms. Do not let this chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN2986

14.2. UN proper shipping name Chlorosilanes, corrosive, flammable, n.o.s.

14.3. Transport hazard class(es)
Subsidiary Hazard Class
14.4. Packing group

<u>ADR</u>

14.1. UN number UN2986

14.2. UN proper shipping name Chlorosilanes, corrosive, flammable, n.o.s.

14.3. Transport hazard class(es) 8
Subsidiary Hazard Class 3
14.4. Packing group II

ACR31337

Ethanol, denatured, 85.4% Revision Date 29-Sep-2023

IATA

14.1. UN number UN2986

14.2. UN proper shipping name Chlorosilanes, corrosive, flammable, n.o.s.

14.3. Transport hazard class(es)8Subsidiary Hazard Class314.4. Packing groupII

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Silane,	1558-33-4	216-319-5	-	-	Х	X	-	Х	X
dichloro(chloromethyl)methyl-									

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Silane, dichloro(chloromethyl)methyl-	1558-33-4	Х	ACTIVE	1	Х	Х	1	Х

Legend: X - Listed '-' - Not Listed **KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization		REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Silane, dichloro(chloromethyl)methyl-	1558-33-4	-	-	-

Not applicable

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Silane, dichloro(chloromethyl)methyl -	1558-33-4	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Ethanol, denatured, 85.4%

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Silane,	WGK2	
dichloro(chloromethyl)methyl-		

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H331 - Toxic if inhaled

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

H412 - Harmful to aquatic life with long lasting effects

EUH014 - Reacts violently with water

EUH071 - Corrosive to the respiratory tract

H226 - Flammable liquid and vapor

Legend

CAS - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances **KECL** - Korean Existing and Evaluated Chemical Substances

Substances List **ENCS** - Japanese Existing and New Chemical Substances AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50% NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average IARC - International Agency for Research on Cancer

Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50% POW - Partition coefficient Octanol:Water vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

Revision Date 29-Sep-2023

Ethanol, denatured, 85.4% Revision Date 29-Sep-2023

Dangerous Goods Code MARPOL - International Convention for the Prevention of Pollution from

Ships

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ATE - Acute Toxicity Estimate
VOC - (Volatile Organic Compound)

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Creation Date29-Jun-2010Revision Date29-Sep-2023Revision SummaryNot applicable.

This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

Disclaimer

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

End of Safety Data Sheet

ACR31337