



The Power to Question

# SAFETY DATA SHEET

Santa Cruz Biotechnology, Inc.

Revision date 24-Mar-2015

Version 1

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

### Product identifier

Product Name Triethyl orthoformate  
Product Code SC-397864

### Recommended use of the chemical and restrictions on use

For research use only. Not intended for diagnostic or therapeutic use.

### Details of the supplier of the safety data sheet

Santa Cruz Biotechnology, Inc.  
10410 Finnell Street  
Dallas, TX 75220  
831.457.3800  
800.457.3801  
scbt@scbt.com

### Emergency telephone number

Chemtrec  
1.800.424.9300 (Within USA)  
+1.703.527.3887 (Outside USA)

## 2. HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification

Flammable liquids

Category 3

### Label elements

Signal word  
Hazard statements  
Symbols/Pictograms

Warning  
FLAMMABLE LIQUID AND VAPOR



Precautionary Statements - Prevention

Keep away from heat/sparks/open flames/hot surfaces. — No smoking

Keep container tightly closed

Ground/bond container and receiving equipment

Use only non-sparking tools

Take precautionary measures against static discharge

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

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

IF ON SKIN (or hair): Remove/Take off immediately all

contaminated clothing. Rinse skin with water/shower

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

Store in a well-ventilated place. Keep cool

Precautionary Statements - Storage

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

### Hazards not otherwise classified (HNOC)

Hazards not otherwise classified (HNOC)

Not applicable

### Other Information



<b>NFPA</b>	Health hazards	0		<b>HMIS</b>	Health hazards	0
	Flammability	3			Flammability	3
	Stability	0			Physical hazards	0
	Physical and chemical properties	-			Personal protection	-

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS No 122-51-0  
 Molecular Weight 148.20  
 Formula C<sub>7</sub>H<sub>16</sub>O<sub>3</sub>

Chemical Name	CAS No	Weight %	Oral LD50	Dermal LD50	Inhalation LC50
Triethyl orthoformate	122-51-0	>98	= 7060 mg/kg ( Rat )	= 20 mL/kg ( Rabbit )	-

### 4. FIRST AID MEASURES

**First Aid Measures**

General advice Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).  
 Eye contact Wash with plenty of water.  
 Skin Contact Wash off immediately with plenty of water.  
 Inhalation Remove to fresh air If breathing is difficult, give oxygen If not breathing, give artificial respiration  
 Ingestion Never give anything by mouth to an unconscious person. Clean mouth with water.  
 Self-protection of the first aider Remove all sources of ignition.

**Most important symptoms and effects, both acute and delayed**

Symptoms No information available.

**Indication of any immediate medical attention and special treatment needed**

Note to physicians Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media None.

**Specific hazards arising from the chemical**

Specific hazards arising from the chemical No information available.

Hazardous combustion products Carbon oxides.

**Explosion data**

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

**Protective equipment and precautions for firefighters**

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

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### Personal precautions, protective equipment and emergency procedures

Personal precautions Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas.

### Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information.

### Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.  
Methods for cleaning up Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers.

## 7. HANDLING AND STORAGE

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### Precautions for safe handling

Advice on safe handling Ensure adequate ventilation, especially in confined areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded.

### Conditions for safe storage, including any incompatibilities

Storage Conditions Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Desiccate at room temperature.  
Incompatible materials None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Control parameters

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

### Appropriate engineering controls

Engineering Controls Showers  
Eyewash stations  
Ventilation systems

### Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).  
Skin and Body Protection Wear protective gloves and protective clothing.  
Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.  
General Hygiene Considerations When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

## 9. PHYSICAL AND CHEMICAL PROPERTIES



Physical State	liquid
Appearance	No information available
Odor	No information available

<b>Property</b>	<b>Values</b>
pH	No information available
Melting point/freezing point	-76 °C
Boiling point	146 °C
Flash point	35 °C CC (closed cup)
Density	0.89 g/mL
Evaporation rate	No information available
Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	2.9
Vapor density	5.11
Specific gravity	0.89
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	1.20
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

## 10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Chemical stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	No information available.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents.
Hazardous Decomposition Products	Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

Inhalation	No data available.
Eye contact	No data available.
Skin Contact	No data available.
Ingestion	No data available.

### Information on toxicological effects

Symptoms	No information available.
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### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity	No information available.
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### Numerical measures of toxicity - Product Information

Unknown acute toxicity	No information available
The following values are calculated based on chapter 3.1 of the GHS document	
ATEmix (oral)	7060 mg/kg
ATEmix (dermal)	18000 mg/kg



## 12. ECOLOGICAL INFORMATION

Ecotoxicity May cause long lasting harmful effects to aquatic life

Chemical Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Triethyl orthoformate 122-51-0	-	592: 48 h Leuciscus idus mg/L LC50	-	-

100% of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability No information available.

Bioaccumulation No information available.

Mobility No information available.

Chemical Name	Partition coefficient
Triethyl orthoformate 122-51-0	1.2

## 13. DISPOSAL CONSIDERATIONS

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

## 14. TRANSPORT INFORMATION

### DOT

UN/ID no UN2524  
 Hazard Class 3  
 Packing Group III  
 Proper shipping name Ethyl orthoformate  
 Description UN2524, Ethyl orthoformate, 3, III  
 Emergency Response Guide Number 129

### IMDG

UN/ID no UN2524  
 Hazard Class 3  
 Packing Group III  
 Proper shipping name Ethyl orthoformate  
 Description UN2524, Ethyl orthoformate, 3, III, (35°C c.c.)  
 EmS-No F-E, S-D

### IATA

UN/ID no UN2524  
 Hazard Class 3  
 Packing Group III  
 Proper shipping name Ethyl orthoformate  
 Description UN2524, Ethyl orthoformate, 3, III

## 15. REGULATORY INFORMATION

### International Inventories



**All of the components in the product are on the following Inventory lists**

TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC) ENCS (Japan): Philippines (PICCS)

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Triethyl orthoformate	X	X	-	X	-	X	X	X	X	X

X - Listed

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

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive hazard	No

**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).

**US State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Triethyl orthoformate 122-51-0	X	X	X

**16. OTHER INFORMATION**

Revision note

No information available

**Disclaimer**

The information provided in this Material 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**