

Safety Data Sheet

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)
Classification according to Regulation (EC) No. 1272/2008 [CLP]

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

Product identifier

Product code	15596018
Product name	TRIZOL REAGENT
Unique Formula Identifier (UFI)	Not Applicable
Chemical Name	Not Applicable
REACH registration number	No registration number is given yet for this substance / substances in this mixture since the annual import quantity is less than one tonnage per annum or the transition period for its registration according to Article 23 of REACH has not yet expired.

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

Relevant identified uses	For research use only
Use Description Code	SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen), PROC15 - Use as laboratory reagent, PC21 - Laboratory chemicals, SU24 - Scientific research and development
Uses advised against	Not for consumer use.

Details of the supplier of the safety data sheet

Manufacturer / Supplier

LIFE TECHNOLOGIES EUROPE BV
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2665 NN BLEISWIJK
NETHERLANDS
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Emergency telephone number

Revision number 19
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24 hour Emergency Response for Hazardous Materials Within the USA + Canada: 1-800-424-9300 and
[or Dangerous Goods] Incident. Spill, Leak, Fire, 1-703-527-3887
Exposure, or Accident. Call CHEMTREC Outside the USA + Canada: 1-703-741-5970

Country Specific Emergency Number (if available):

CHEMTREC Ireland (Dublin) +(353)-19014670 (Greeting Language: English and Irish)
CHEMTREC UK (London) +(44)-870-8200418 (Greeting Language: English)

SECTION 2: Hazards identification

Classification of the substance or mixture

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

Physical hazards

Not Hazardous

Health hazards

Acute oral toxicity	Category 4
Acute dermal toxicity	Category 4
Acute inhalation toxicity	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Germ cell mutagenicity	Category 2
Specific target organ toxicity - Repeated exposure	Category 2

Environmental hazards

Chronic aquatic hazard	Category 3
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Additional information

Not Applicable

Label elements

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

Hazard pictograms



Signal Word

Danger

Hazard Statements

H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H332 - Harmful if inhaled
H314 - Causes severe skin burns and eye damage
H341 - Suspected of causing genetic defects

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H373 - May cause damage to organs through prolonged or repeated exposure
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements

Prevention

P264 - Wash hands thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P201 - Obtain special instructions before use
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P273 - Avoid release to the environment
P202 - Do not handle until all safety precautions have been read and understood

Response

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical advice/attention if you feel unwell
P330 - Rinse mouth

Storage

Not Applicable

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards

This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/information on ingredients

Mixtures

We recommend handling all chemicals with caution.

Chemical Name	CAS No	EINECS-No.	Weight-%	REACH registration number	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Thiocyanic acid, compound with guanidine (1:1)	593-84-0	209-812-1	25-35	01-2120735072-65-xx xx	Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Corr. 1C - H314 Eye Damage 1 - H318 Aquatic Chronic 3 - H412
Phenol	108-95-2	203-632-7	45-55	-	Muta. 2 - H341 Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 3 - H331 Skin Corr. 1B - H314 STOT RE 2 - H373

Chemical Name	Specific concentration limit (SCL)	M-Factor	Acute Toxicity Estimate
Thiocyanic acid, compound with guanidine (1:1)	-	-	-
Phenol	Eye Irrit. 2 (H319) :: 1%≤C<3% Skin Corr. 1B (H314) :: C≥3% Skin Irrit. 2 (H315) :: 1%≤C<3%	-	-

SECTION 4: First aid measures

Description of first aid measures

Skin contact	Rinse skin with water. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Ingestion	Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Call a doctor or poison control centre immediately.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Call a doctor or poison control centre immediately.
Notes to Physician	Treat symptomatically.

Most important symptoms and effects, both acute and delayed

H302 - Harmful if swallowed H312 - Harmful in contact with skin H332 - Harmful if inhaled H314 - Causes severe skin burns and eye damage H341 - Suspected of causing genetic defects H373 - May cause damage to organs through prolonged or repeated exposure

Indication of any immediate medical attention and special treatment needed

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media	Water spray. Carbon dioxide (CO ₂). Foam. Dry chemical.
Unsuitable extinguishing media	No information available.

Special hazards arising from the substance or mixture Not known

Hazardous Combustion Products	No data available.
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Advice for firefighters Standard procedure for chemical fires.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation
Always wear recommended Personal Protective Equipment
Use personal protection equipment
Avoid contact with skin, eyes or clothing
See section 8 for more information

Environmental precautions

No special environmental precautions required. Avoid discharge into drains and waterways whenever possible.

Methods and material for containment and cleaning up

Soak up with inert absorbent material.

Reference to other sections

See section 8 for more information.

SECTION 7: Handling and storage

Precautions for safe handling

Ensure adequate ventilation. Use personal protective equipment as required. Always wear recommended Personal Protective Equipment. Avoid contact with eyes, skin and clothing. Avoid breathing dust/fume/gas/mist/vapours/spray. See section 8 for more information.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep in properly labelled containers.

Specific end use(s)

For research use only.

SECTION 8: Exposure controls/personal protection

Control parameters

Chemical Name	EU OEL (TWA)	EU OEL (STEL)	EU Skin Notation
Thiocyanic acid, compound with guanidine (1:1) 593-84-0	None	None	None
Phenol 108-95-2	2 ppm 8 mg/m ³	4 ppm 16 mg/m ³	Possibility of significant uptake through the skin

Chemical Name	Austria	Belgium (TWA)	Czech Republic
Thiocyanic acid, compound with guanidine (1:1) 593-84-0	None	None	None
Phenol 108-95-2	2 ppm 8 mg/m ³	2 ppm 8 mg/m ³	7.5 mg/m ³ TWA 15 mg/m ³ Ceiling Irritant Potential for cutaneous absorption

Chemical Name	Denmark (TWA)	Finland OEL (TWA)	France OEL (VME)
Thiocyanic acid, compound with guanidine (1:1) 593-84-0	None	None	None
Phenol 108-95-2	1 ppm 4 mg/m ³	20 mg/m ³ 5 ppm	2 ppm 7.8 mg/m ³

Chemical Name	Germany OEL (TWA)	Ireland (TWA)	Italy OEL (TWA)
Thiocyanic acid, compound with guanidine (1:1) 593-84-0	None	None	None
Phenol 108-95-2	2 ppm exposure factor 2 8 mg/m ³ exposure factor 2	2 ppm 8 mg/m ³	2 ppm 8.0 mg/m ³

Chemical Name	Lithuania OEL (TWA)	Netherlands OEL (MAC)	Norway
Thiocyanic acid, compound with guanidine (1:1) 593-84-0	None	None	None
Phenol 108-95-2	2 ppm 8 mg/m ³	2 ppm 8 mg/m ³	1 ppm TWA 4 mg/m ³ TWA 3 ppm STEL 12 mg/m ³ STEL

Chemical Name	Poland	Portugal	Spain OEL (TWA)
Thiocyanic acid, compound with guanidine (1:1) 593-84-0	None	None	None
Phenol 108-95-2	7.8 mg/m ³ TWA Skin Notation 16 mg/m ³ STEL	2 ppm TWA 8 mg/m ³ TWA 4 ppm STEL 16 mg/m ³ STEL skin - potential for cutaneous exposure A4 - Not Classifiable as a Human Carcinogen	2 ppm 8 mg/m ³

Chemical Name	Sweden - Occupational Exposure Limits - TLVs (LLVs)	Switzerland	United Kingdom
Thiocyanic acid, compound with guanidine (1:1) 593-84-0	None	None	None
Phenol 108-95-2	1 ppm TLV NGV 4 mg/m ³ TLV NGV	5 ppm STEL 19 mg/m ³ STEL	2 ppm TWA 7.8 mg/m ³ TWA

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		5 ppm TWA 19 mg/m ³ TWA	
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Derived No Effect Level (DNEL)

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Thiocyanic acid, compound with guanidine (1:1) 593-84-0 (25-35)	None	None	None	DNEL = 0.31mg/kg bw/day
Phenol 108-95-2 (45-55)	None	None	None	DNEL = 1.23mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Thiocyanic acid, compound with guanidine (1:1) 593-84-0 (25-35)	None	DNEL = 3.28mg/m ³	None	DNEL = 1.092mg/m ³
Phenol 108-95-2 (45-55)	DNEL = 16mg/m ³	None	None	DNEL = 8mg/m ³

Predicted No Effect Concentration (PNEC)

See table for values

Chemical Name	Fresh water sediment	Fresh water	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Thiocyanic acid, compound with guanidine (1:1) 593-84-0	PNEC = 165µg/kg sediment dw	None	PNEC = 424µg/L	PNEC = 20mg/L	PNEC = 8.03µg/kg soil dw
Phenol 108-95-2	PNEC = 0.0915mg/kg sediment dw	None	PNEC = 0.031mg/L	PNEC = 2.1mg/L	PNEC = 0.136mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water Intermittent	Food chain	Air
Thiocyanic acid, compound with guanidine (1:1) 593-84-0 (25-35)	PNEC = 4.24µg/L	PNEC = 16.5µg/kg sediment dw	PNEC = 424µg/L	None	None
Phenol 108-95-2 (45-55)	PNEC = 0.00077mg/L	PNEC = 0.00915mg/kg sediment dw	None	None	None

Engineering Measures

Ensure adequate ventilation, especially in confined areas.

Exposure controls

Personal protection equipment

Respiratory protection

In case of insufficient ventilation wear respirators and components tested and approved under appropriate government standards.

Hand protection

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

Eye protection

Tight sealing safety goggles.

Skin and Body Protection

Wear suitable protective clothing.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

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No special environmental precautions required. Avoid discharge into drains and waterways whenever possible.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	liquid	
Colour	No data	
Odour	No data	
Molecular Weight	No data	
Melting point / melting range	°C No data	°F No data
Boiling point / boiling range	°C No data	°F No data
Flammability (solid, gas)	No data	
Lower explosion limit	No data	
Upper explosion limit	No data	
Flash point	°C No data	°F No data
Autoignition Temperature	°C No data	°F No data
Decomposition temperature	°C No data	°F No data
pH	No data	
Evaporation rate	No data	
Viscosity	No data	
Solubility	No data	
Partition coefficient: n-octanol/water	No data	
Vapour Pressure	No data	
Specific gravity	No data	
Relative density	No data	
Vapour density	No data	
Explosive properties	No data	
Oxidising properties	No data	
Particle characteristics	No data	

Other information

Information with regards to physical hazard classes

No information available

Other safety characteristics

No information available

SECTION 10: Stability and reactivity

Reactivity	None known.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous reaction has not been reported.
Conditions to avoid	Contact with acids or bleach liberates toxic gases. DO NOT ADD acids or bleach to any liquid wastes containing this product.
Incompatible materials	No dangerous reaction known under conditions of normal use.
Hazardous decomposition products	No data available.

SECTION 11: Toxicological information

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

Product Information Harmful if swallowed Toxic by inhalation and in contact with skin

Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Thiocyanic acid, compound with guanidine (1:1)	593 mg/kg	No data available	No data available
Phenol	= 340 mg/kg (Rat)	= 630 mg/kg(Rabbit)	No data available

Principal Routes of Exposure

Skin corrosion/irritation Causes skin burns

Serious eye damage/irritation Causes serious eye damage

Respiratory or skin sensitisation Data are conclusive but insufficient for classification

Specific target organ toxicity (STOT) – single exposure Data are conclusive but insufficient for classification

Specific target organ toxicity (STOT) – repeated exposure May cause damage to organs through prolonged or repeated exposure

Carcinogenicity Data are conclusive but insufficient for classification

Germ cell mutagenicity Product is or contains a chemical which may cause mutations in the germ cells of humans

Reproductive Toxicity Data are conclusive but insufficient for classification

Aspiration Hazard Data are conclusive but insufficient for classification

Information on other hazards

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

SECTION 12: Ecological information

Toxicity

The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Microtox Data	log Pow
Thiocyanic acid, compound with guanidine (1:1)	No data available	No data available	No data available	No data available	No data available
Phenol	Desmodesmus subspicatus EC50 187 - 279 mg/L (72 h) Pseudokirchneriella subcapitata EC50 46.42 mg/L (96 h)	Daphnia magna EC50 4.24 - 10.7 mg/L (48 h) Daphnia magna EC50 10.2 - 15.5 mg/L (48 h)	No data available	No data available	logPow1.47

Persistence and degradability No information available.

Bioaccumulative potential No information available.

Mobility in soil No information available.

Results of PBT and vPvB assessment No information available.

Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors

Other adverse effects

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

Ozone depletion potential (ODP) This product does not contain any known or suspected substance

SECTION 13: Disposal considerations

Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in accordance with approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

SECTION 14: Transport information

IATA / ADR / DOT-US / IMDG

Classified as dangerous in the meaning of transport regulations

UN number or ID number
UN proper shipping name

1760
Corrosive liquid, n.o.s. (Phenol - Guanidine thiocyanate solution)

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Transport hazard class(es)
Packing group

8
II

Environmental hazards

Not Applicable

Special precautions for user

Not Applicable

Maritime transport in bulk according to IMO instruments

Not Applicable.

SECTION 15: Regulatory information

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

Substances of Very High Concern

None

Substance subject to authorisation per REACH Annex XIV

None

Restricted substances under EC 1907/2006, Annex XVII

Chemical Name	Weight-%	EU - REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances
Phenol	45-55	Use restricted. See item 75.

Regulation (EC) No 649/2012 (Rotterdam Convention - export/import of dangerous chemicals)

None

Regulation (EU) No 2019/1021 (Stockholm Convention – persistent organic pollutants)

None

EU - Substances Depleting the Ozone layer (1005/2009)

None

German Water hazard classes (Wassergefährdungsklassen)

Chemical Name	Weight-%	Water hazard class (WGK)
Thiocyanic acid, compound with guanidine (1:1)	25-35	hazard class 2 - obviously hazardous to water
Phenol	45-55	hazard class 2 - obviously hazardous to water

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Other International Inventories

Chemical Name	EINECS (European Union)	ELINCS (European List of Notified Chemical Substances)	ENCS (Japan)	PICCS (Philippines)
Thiocyanic acid, compound with guanidine (1:1)	Listed	-	Listed	Listed
Phenol	Listed	-	Listed	Listed

Chemical Name	AICS (Australia)	South Korea (KECL)	Canada (DSL)	NDSL
Thiocyanic acid, compound with guanidine (1:1)	Listed	-	Listed	-
Phenol	Listed	Listed	Listed	-

Chemical safety assessment

No Chemical safety assessment has been carried out.

SECTION 16: Other information

Reason for revision Update according to Commission Regulation EU No. 2020/878
Revision number 19
Revision date 25-Jun-2024

References

- ECHA: <http://echa.europa.eu/>
- TOXNET: <http://toxnet.nlm.nih.gov/>
- eChemPortal: <http://www.echemportal.org/>
- LOLI database: <https://www.chemadvisor.com/loli-database>

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Acute oral toxicity	Category 4	Calculation method
Acute dermal toxicity	Category 4	Calculation method
Acute inhalation toxicity	Category 4	Calculation method
Skin corrosion/irritation	Category 1	Calculation method
Serious eye damage/eye irritation	Category 1	Calculation method
Germ cell mutagenicity	Category 2	Specific target organ toxicity - Repeated exposure
Chronic aquatic hazard	Category 3	

Abbreviations and acronyms

TWA - Time-Weighted Average
OELs - Occupational Exposure Limits
STEL - Short Term Exposure Limit
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
KECL - Korean Existing and Evaluated Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
CEPA - Canadian Environmental Protection Act
EPA - Environmental Protection Agency
OSHA - Occupational Safety and Health Administration of the US Department of Labour
IATA - International Air Transport Association
DOT - Department of Transportation
IMDG - International Maritime Dangerous Goods
ACGIH - American Conference of Governmental Industrial Hygienists
NIOSH - National Institute for Occupational Safety and Health
AIHA - American Industrial Hygiene Association
HMIS - Department of Defense Hazardous Materials Information System
NTP - National Toxicology Program
IARC - International Agency for Research on Cancer

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006.

"The above information was acquired by diligent search and/or investigation and the recommendations are based on prudent application of professional judgment. The information shall not be taken as being all inclusive and is to be

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used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since the Company cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. THE INFORMATION IN THIS SDS DOES NOT CONSTITUTE A WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE"