

1 Identification

- **Product identifier**
- **Trade name:** Guanidine thiocyanate - Solution (6 M in 0.1 M Tris; pH 7.5)
- **Article number:** A0703
- **Application of the substance / the mixture**
 Molecular biology
 Laboratory chemical
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 AppliChem GmbH
 Ottoweg 4
 D-64291 Darmstadt
- **Information department:** Dept. Compliance
- **Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

Tel.: +49 (0)6151 93570
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 msds@applichem.com

2 Hazard(s) identification

- **Classification of the substance or mixture**
 Acute Tox. 4 H302 Harmful if swallowed.
 Acute Tox. 3 H311 Toxic in contact with skin.
 Acute Tox. 4 H332 Harmful if inhaled.

• Label elements

• GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

• Hazard pictograms



GHS06

- **Signal word** Danger
- **Hazard-determining components of labeling:**
 guanidinium thiocyanate
- **Hazard statements**
 H302+H332 Harmful if swallowed or if inhaled.
 H311 Toxic in contact with skin.
- **Precautionary statements**
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray
 P264 Wash thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves / protective clothing.
 P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
 P302+P352 If on skin: Wash with plenty of water.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P321 Specific treatment (see on this label).
 P330 Rinse mouth.
 P361+P364 Take off immediately all contaminated clothing and wash it before reuse.

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P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **Classification system:**

• **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

• **HMIS-ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

• **Other hazards**

• **Results of PBT and vPvB assessment**

• **PBT:** Not applicable.

• **vPvB:** Not applicable.

3 Composition/information on ingredients

• **Chemical characterization: Mixtures**

• **Description:** aqueous solution

• **Dangerous components:**

593-84-0	guanidinium thiocyanate	>50-<100%
77-86-1	TRIS	>1-≤2.5%

4 First-aid measures

• **Description of first aid measures**

• **General information:**

Seek immediate medical advice.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

• **After inhalation:**

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

• **After skin contact:** Call a doctor immediately.

• **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

• **After swallowing:**

Rinse out mouth.

Call a doctor immediately.

• **Information for doctor:**

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

No further relevant information available.

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

No further relevant information available.

5 Fire-fighting measures

• **Extinguishing media**

• **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

• **Special hazards arising from the substance or mixture**

Nitrogen oxides (NO_x)

CO, CO₂

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(SO₂, SO₃)

Non-combustible.

• **Advice for firefighters**

• **Protective equipment:**

Mouth respiratory protective device.

Wear self-contained respiratory protective device.

• **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Contain escaping vapours with water.

6 Accidental release measures

• **Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Avoid substance contact.

• **Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

• **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Clean up affected area.

• **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

• **Protective Action Criteria for Chemicals**

• **PAC-1:**

593-84-0	guanidinium thiocyanate	0.98 mg/m ³
77-86-1	TRIS	18 mg/m ³

• **PAC-2:**

593-84-0	guanidinium thiocyanate	11 mg/m ³
77-86-1	TRIS	190 mg/m ³

• **PAC-3:**

593-84-0	guanidinium thiocyanate	65 mg/m ³
77-86-1	TRIS	1,200 mg/m ³

7 Handling and storage

• **Handling:**

• **Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

• **Information about protection against explosions and fires:** The product is not flammable.

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

• **Storage:**

• **Requirements to be met by storerooms and receptacles:** Prevent any seepage into the ground.

• **Information about storage in one common storage facility:** Do not store together with acids.

• **Further information about storage conditions:**

Keep receptacle tightly sealed.

Open receptacle only under localized extractor facilities.

Store receptacle in a well ventilated area.

Store under lock and key and with access restricted to technical experts or their assistants only.

• **Recommended storage temperature:** +15 - +25 °C

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- **Storage class:** 12
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Change contaminated clothing.
- **Breathing equipment:**
Respiratory protection required when vapours/aerosols are generated.
Filter ABEK
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact gloves made of the following materials are suitable:**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
Value for the permeation: Level ≥ 480 min
- **As protection from splashes gloves made of the following materials are suitable:**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
Value for the permeation: Level ≥ 480 min
- **Eye protection:** Safety glasses
- **Body protection:**
Use protective suit.
Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

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9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Fluid
Color:	Colorless
Odor:	No data available
Odor threshold:	Not determined.

· pH-value at 20 °C (68 °F): 7.5

· Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not applicable.

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

· Vapor pressure at 50 °C (122 °F): >110 hPa (>82.5 mm Hg)

· Density: Not determined.

· Relative density: Not determined.

· Vapor density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water: Fully miscible.

· Partition coefficient (n-octanol/water): Not determined.

· Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

· Solvent content:

Water:	27.9 %
VOC content:	0.00 %

Solids content: 72.2 %

· Other information: No further relevant information available.

10 Stability and reactivity

· **Reactivity** No dangerous reactions known.

· Chemical stability

· **Thermal decomposition / conditions to be avoided:** heating

· **Possibility of hazardous reactions** No dangerous reactions known.

· **Conditions to avoid** No further relevant information available.

· **Incompatible materials:** No dangerous reactions known.

· **Hazardous decomposition products:** In the event of fire: See chapter 5

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11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
- LD/LC50 values that are relevant for classification:

Components	Type	Value	Species
593-84-0 guanidinium thiocyanate			
Oral	LD50	354 mg/kg (rat)	

- Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

- Carcinogenic categories

- IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

- NTP (National Toxicology Program)

None of the ingredients is listed.

- OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

- Toxicity
- Aquatic toxicity:

Type of test	Effective concentration	Method	Assessment
593-84-0 guanidinium thiocyanate			
EC50/72 h	130 mg/l (Algae)		
EC50/48 h	42.4 mg/l (Aquatic Invertebrata)		
LC50/96 h	89.1 mg/l (fish)		

- Persistence and degradability No further relevant information available.

- Behavior in environmental systems:

- Bioaccumulative potential No further relevant information available.

- Mobility in soil No further relevant information available.

- Ecotoxicological effects:

- Remark: Harmful to fish

- Additional ecological information:

- General notes:

Harmful to aquatic organisms

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

- Results of PBT and vPvB assessment

- PBT: Not applicable.

- vPvB: Not applicable.

- Other adverse effects No further relevant information available.

13 Disposal considerations

- Waste treatment methods

- Recommendation:

Chemicals must be disposed of in compliance with the respective national regulations.

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Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

• **Uncleaned packagings:**

• **Recommendation:**

Disposal must be made according to official regulations.

Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

14 Transport information

• **UN-Number**

• DOT, ADR, ADN, IMDG, IATA Void

• **UN proper shipping name**

• DOT, ADR, ADN, IMDG, IATA Void

• **Transport hazard class(es)**

• DOT, ADR, ADN, IMDG, IATA

• Class Void

• **Packing group**

• DOT, ADR, IMDG, IATA Void

• **Environmental hazards:**

• Marine pollutant: No

• **Special precautions for user**

Not applicable.

• **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

• **Transport/Additional information:**

Not dangerous according to the above specifications.

• **UN "Model Regulation":**

Void

15 Regulatory information

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

• **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

• **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

• **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

• **Proposition 65**

• **Chemicals known to cause cancer:**

None of the ingredients is listed.

• **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

• **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

• **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

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• **Cancerogenity categories**

• **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

• **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

• **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

• **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

• **Hazard pictograms**



GHS06

• **Signal word** Danger

• **Hazard-determining components of labeling:**

guanidinium thiocyanate

• **Hazard statements**

H302+H332 Harmful if swallowed or if inhaled.

H311 Toxic in contact with skin.

• **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves / protective clothing.

P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.

P302+P352 If on skin: Wash with plenty of water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P321 Specific treatment (see on this label).

P330 Rinse mouth.

P361+P364 Take off immediately all contaminated clothing and wash it before reuse.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• **Department issuing SDS:** Dept. Compliance

• **Date of preparation / last revision** 07/07/2018 / 3

• **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

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HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 3: Acute toxicity – Category 3

· *** Data compared to the previous version altered.**

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