

1 Identification

- **Product identifier**
- **Trade name:** TRltidy G
- **Article number:** A4051
- **Application of the substance / the mixture**
Biochemistry
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
Fax.: +49 (0)6151 935711
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. 3 H331 Toxic if inhaled.
Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.
Skin Sens. 1 H317 May cause an allergic skin reaction.
Muta. 2 H341 Suspected of causing genetic defects.
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05 GHS06 GHS07 GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
Phenol crystalline
guanidinium thiocyanate
2-mercaptoethanol
N-Lauroylsarcosine sodium salt
- **Hazard statements**
H302 Harmful if swallowed.
H311+H331 Toxic in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.

(Contd. on page 2)

Trade name: TRItidy G

(Contd. of page 1)

H373 May cause damage to organs through prolonged or repeated exposure.

• **Precautionary statements**

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
- P302+P352 If on skin: Wash with plenty of water.
- P308+P313 IF exposed or concerned: Get medical advice/attention.

• **Classification system:**

• **NFPA ratings (scale 0 - 4)**



Health = 3
Fire = 0
Reactivity = 0

• **HMIS-ratings (scale 0 - 4)**



HEALTH 3 Health = 3
FIRE 0 Fire = 0
REACTIVITY 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:**

108-95-2	Phenol crystalline	>30-≤40%
593-84-0	guanidinium thiocyanate	>20-≤25%
60-24-2	2-mercaptoethanol	>0.1-≤1%
137-16-6	N-Lauroylsarcosine sodium salt	>0.1-≤1%

4 First-aid measures

• **Description of first aid measures**

• **General information:**

Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Remove breathing apparatus only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Involve doctor immediately.

• **After inhalation:**

Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

• **After skin contact:**

Call a doctor immediately.
Wash with polyethylene glycol 400 and then rinse with copious amounts of water.
Immediately remove any clothing soiled by the product.

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

• **After swallowing:**

Do not induce vomiting; immediately call for medical help.
Supply fresh air or oxygen; call for doctor.

(Contd. on page 3)

Trade name: TRItidy G

(Contd. of page 2)

In case of unconsciousness place patient stably in side position for transportation.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

- **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**
Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
Nitrogen oxides (NO_x)
CO, CO₂
(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.
Wear protective equipment. Keep unprotected persons away.
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).
Use neutralizing agent.
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:**

108-95-2	Phenol crystalline	15 ppm
593-84-0	guanidinium thiocyanate	0.98 mg/m ³
60-24-2	2-mercaptoethanol	0.6 ppm
6131-90-4	Sodium Acetate 3-hydrate	11 mg/m ³
148-24-3	quinolin-8-ol	3.6 mg/m ³

· **PAC-2:**

108-95-2	Phenol crystalline	23 ppm
----------	--------------------	--------

(Contd. on page 4)

Trade name: TRItidy G

(Contd. of page 3)

593-84-0	guanidinium thiocyanate	11 mg/m ³
60-24-2	2-mercaptoethanol	3.5 ppm
6131-90-4	Sodium Acetate 3-hydrate	120 mg/m ³
148-24-3	quinolin-8-ol	40 mg/m ³
· PAC-3:		
108-95-2	Phenol crystalline	200 ppm
593-84-0	guanidinium thiocyanate	65 mg/m ³
60-24-2	2-mercaptoethanol	29 ppm
6131-90-4	Sodium Acetate 3-hydrate	690 mg/m ³
148-24-3	quinolin-8-ol	240 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep respiratory protective device available.
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:**
Protect from exposure to the light.
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:** 2-8 °C
- **Storage class:** 6.1 B
- **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 following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

108-95-2 Phenol crystalline

PEL	Long-term value: 19 mg/m ³ , 5 ppm Skin
REL	Long-term value: 19 mg/m ³ , 5 ppm Ceiling limit value: 60* mg/m ³ , 15.6* ppm *15-min; Skin
TLV	Long-term value: 19 mg/m ³ , 5 ppm Skin; BEI

(Contd. on page 5)

Trade name: TRItidy G

(Contd. of page 4)

60-24-2 2-mercaptoethanol

WEEL	Long-term value: 0.2 ppm Skin
------	----------------------------------

· **Ingredients with biological limit values:**

108-95-2 Phenol crystalline

BEI	250 mg/g creatinine Medium: urine Time: end of shift Parameter: Phenol with hydrolysis (background, nonspecific)
-----	---

· **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.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.

· **Breathing equipment:**

Combination filter A-P3
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **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:**

Recommended thickness of the material: ≥ 0.7 mm
Fluorocarbon rubber (Viton)
Value for the permeation: Level ≥ 480 min

· **As protection from splashes gloves made of the following materials are suitable:**

Recommended thickness of the material: ≥ 0.7 mm
Fluorocarbon rubber (Viton)
Value for the permeation: Level ≥ 480 min

· **Eye protection:**



Tightly sealed goggles

· **Body protection:**

Use protective suit.
Full head, face and neck protection

(Contd. on page 6)

Trade name: TRItidy G

(Contd. of page 5)

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Fluid
Color:	Red
Odor:	Characteristic
Odor threshold:	Not determined.

· pH-value at 20 °C (68 °F): ~4

· Change in condition

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

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 595 °C (1,103 °F)

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

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

· Explosion limits:

Lower:	1.3 Vol %
Upper:	9.5 Vol %

· Vapor pressure at 20 °C (68 °F): 0.2 hPa (0.2 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:

Organic solvents:	33.8 %
Water:	44.1 %
VOC content:	33.75 %

· Other information: No further relevant information available.

10 Stability and reactivity

· **Reactivity** No dangerous reactions known.

· **Chemical stability**

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

No decomposition if used according to specifications.

(Contd. on page 7)

Trade name: TRItidy G

(Contd. of page 6)

- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** strong acids
- **Incompatible materials:** strong acids
- **Hazardous decomposition products:** In the event of fire: See chapter 5

11 Toxicological information

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

Components	Type	Value	Species
108-95-2 Phenol crystalline			
Oral	LD50	317 mg/kg	(rat)
Dermal	LD50	669 mg/kg	(rat)
		850 mg/kg	(rabbit)
Inhalative	LC50	316 mg/l	(rat)
593-84-0 guanidinium thiocyanate			
Oral	LD50	354 mg/kg	(rat)
60-24-2 2-mercaptoethanol			
Oral	LD50	244 mg/kg	(rat)
Dermal	LD50	150 mg/kg	(rabbit)
137-16-6 N-Lauroylsarcosine sodium salt			
Oral	LD50	2,888 mg/kg	(rat)
Inhalative	LC50/4 h	0.05-0.5 mg/l	(rat)

- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:**
Strong caustic effect.
Strong irritant with the danger of severe eye injury.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic
Harmful
Corrosive
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- **Carcinogenic categories**

IARC (International Agency for Research on Cancer)		
108-95-2	Phenol crystalline	3
148-24-3	quinolin-8-ol	3

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

US

(Contd. on page 8)

Trade name: TRItidy G

(Contd. of page 7)

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:**

Type of test	Effective concentration	Method	Assessment
108-95-2 Phenol crystalline			
EC50	25 mg/l (Bakterien)		
	100 mg/l (daphnia magna)		
	44.5 mg/l (fish)		
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:**
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
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.
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, IMDG, IATA	UN2821
· UN proper shipping name	
· DOT, ADR	Phenol solutions
· IMDG, IATA	PHENOL SOLUTION

(Contd. on page 9)

Trade name: TRItidy G

(Contd. of page 8)

· **Transport hazard class(es)**

· **DOT**



· **Class** 6.1 Toxic substances
· **Label** 6.1

· **ADR**



· **Class** 6.1 (T1) Toxic substances
· **Label** 6.1

· **IMDG, IATA**



· **Class** 6.1 Toxic substances
· **Label** 6.1

· **Packing group**

· **DOT, ADR, IMDG, IATA** II

· **Environmental hazards:**

· **Marine pollutant:** No

· **Special precautions for user**

Warning: Toxic substances

· **Danger code (Kemler):**

60

· **EMS Number:**

F-A,S-A

· **Stowage Category**

A

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

Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Excepted quantities (EQ)**

Code: E4
Maximum net quantity per inner packaging: 1 ml
Maximum net quantity per outer packaging: 500 ml

· **IMDG**

· **Limited quantities (LQ)**

100 ml

· **Excepted quantities (EQ)**

Code: E4
Maximum net quantity per inner packaging: 1 ml
Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":**

UN 2821 PHENOL SOLUTIONS, 6.1, II

US

(Contd. on page 10)

Trade name: TRItidy G

(Contd. of page 9)

15 Regulatory information

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

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

108-95-2	Phenol crystalline
----------	--------------------

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

108-95-2	Phenol crystalline
----------	--------------------

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

108-95-2	Phenol crystalline
593-84-0	guanidinium thiocyanate
60-24-2	2-mercaptoethanol
137-16-6	N-Lauroylsarcosine sodium salt
148-24-3	quinolin-8-ol
7732-18-5	water

• **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.

• **Carcinogeny categories**

• **EPA (Environmental Protection Agency)**

108-95-2	Phenol crystalline	D, I
----------	--------------------	------

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

108-95-2	Phenol crystalline	A4
----------	--------------------	----

• **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**



GHS05 GHS06 GHS07 GHS08

• **Signal word** Danger

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

Phenol crystalline
guanidinium thiocyanate
2-mercaptoethanol
N-Lauroylsarcosine sodium salt

• **Hazard statements**

H302 Harmful if swallowed.
H311+H331 Toxic in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.

(Contd. on page 11)

Trade name: TRItidy G

(Contd. of page 10)

H341 Suspected of causing genetic defects.

H373 May cause damage to organs through prolonged or repeated exposure.

• **Precautionary statements**

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

P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.

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

P308+P313 IF exposed or concerned: Get medical advice/attention.

• **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** 07/14/2018 / 4

• **Abbreviations and acronyms:**

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)

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

BEI: Biological Exposure Limit

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 3: Acute toxicity – Category 3

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Muta. 2: Germ cell mutagenicity – Category 2

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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