

## 1 Identification

- **Product identifier**
- **Trade name: Phenol water-saturated, non-stabilized + separate Tris - Solution**
- **Article number:** A0444
- **Application of the substance / the mixture** 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. 3 H301 Toxic 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.  
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 GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
Phenol crystalline
- **Hazard statements**  
H301+H311+H331 Toxic if swallowed, in contact with skin or 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.
- **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.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P309 IF exposed or if you feel unwell:

(Contd. on page 2)

**Trade name: Phenol water-saturated, non-stabilized + separate Tris - Solution**

(Contd. of page 1)

P310 Immediately call a poison center/doctor.

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

**3 Composition/information on ingredients**

- **Chemical characterization: Substances**
- **CAS No. Description**  
108-95-2 phenol
- **Identification number(s)** 604-001-00-2
- **EC number:** 203-632-7
- **Index number:** 604-001-00-2
- **Chemical characterization: Mixtures**
- **Description:** Mixture: consisting of the following components.

- **Dangerous components:**

108-95-2	Phenol crystalline	>50-<100%
----------	--------------------	-----------

**4 First-aid measures**

- **Description of first aid measures**
- **General information:**  
Personal protection for the First Aider.  
Involve doctor immediately.
- **After inhalation:**  
Call a doctor immediately.  
Supply fresh air or oxygen; call for doctor.  
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.  
Immediately remove any clothing soiled by the product.  
Wash with polyethylene glycol 400 and then rinse with copious amounts of water.
- **After eye contact:**  
Rinse opened eye for several minutes under running water.  
Call a doctor immediately.
- **After swallowing:**  
Rinse out mouth.  
Do not induce vomiting; immediately call for medical help.  
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.

(Contd. on page 3)

Trade name: Phenol water-saturated, non-stabilized + separate Tris - Solution

(Contd. of page 2)

- **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.
- **For safety reasons unsuitable extinguishing agents:** None
- **Special hazards arising from the substance or mixture**  
Development of hazardous combustion gases or vapours possible in the event of fire.  
CO, CO2  
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**  
Wear protective equipment. Keep unprotected persons away.  
Avoid substance contact.  
Do not inhale steams/aerosols.  
Ensure adequate ventilation
- **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 (AppliSorb).  
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
----------	--------------------	--------

· **PAC-2:**

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

· **PAC-3:**

108-95-2	Phenol crystalline	200 ppm
----------	--------------------	---------

Trade name: Phenol water-saturated, non-stabilized + separate Tris - Solution

(Contd. of page 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:** Not required.
- **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:** 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:

#### 108-95-2 Phenol crystalline

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

### 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:**  
Short term filter device:  
Filter ABEK

(Contd. on page 5)

**Trade name: Phenol water-saturated, non-stabilized + separate Tris - Solution**

(Contd. of page 4)

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:**

Butyl rubber, BR

Recommended thickness of the material:  $\geq 0.3$  mm

Value for the permeation: Level  $\geq 480$  min

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

Recommended thickness of the material:  $\geq 0.11$  mm

Butyl rubber, BR

Value for the permeation: Level  $\geq 120$  min

· **Eye protection:**



Tightly sealed goggles

· **Body protection:**

Use protective suit.

Full head, face and neck protection

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: different

· **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.

(Contd. on page 6)

**Trade name: Phenol water-saturated, non-stabilized + separate Tris - Solution**

(Contd. of page 5)

· <b>Ignition temperature:</b>	595 °C (1,103 °F)
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
<b>Lower:</b>	1.3 Vol %
<b>Upper:</b>	9.5 Vol %
· <b>Vapor pressure:</b>	Not determined.
· <b>Density:</b>	Not determined.
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	75.0 %
<b>VOC content:</b>	75.00 %
	750.0 g/l / 6.26 lb/gl
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No dangerous reactions known.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** Strong heating
- **Possibility of hazardous reactions**  
Violent reactions possible with:  
oxidizing agent  
aldehydes  
halogens  
hydrogen peroxide, iron(III) compounds  
bases  
Strong exothermic reaction with acids.  
Risk of explosion with:  
nitrates, nitrites, peroxi compounds, strong oxidizing agents
- **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
- **Additional information:**  
hygroscopic  
light sensitive  
Forms explosive mixtures with air on intense heating.

US

(Contd. on page 7)

Trade name: Phenol water-saturated, non-stabilized + separate Tris - Solution

(Contd. of page 6)

## 11 Toxicological information

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

Components	Type	Value	Species
<b>108-95-2 Phenol crystalline</b>			
Oral	LD50	317 mg/kg (rat)	
Dermal	LD50	669 mg/kg (rat) 850 mg/kg (rabbit)	
Inhalative	LC50	316 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  
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

- 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
<b>108-95-2 Phenol crystalline</b>			
EC50	25 mg/l (Bakterien)		
	100 mg/l (daphnia magna)		
	44.5 mg/l (fish)		

- Persistence and degradability** The product is easily biodegradable.
- Behavior in environmental systems:**
- Bioaccumulative potential**  
Due to the distribution coefficient n-octanol/water a worth-mentioning accumulation in organisms is not expected.
- Mobility in soil** No further relevant information available.
- Ecotoxic effects:**
- Remark:** Toxic for fish
- Additional ecological information:**
- General notes:**  
Must not reach bodies of water or drainage ditch undiluted or unneutralized.  
Also poisonous for fish and plankton in water bodies.

(Contd. on page 8)

**Trade name: Phenol water-saturated, non-stabilized + separate Tris - Solution**

(Contd. of page 7)

Toxic for 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** Phenol solutions  
· **ADR** Phenol solutions, ENVIRONMENTALLY HAZARDOUS  
· **IMDG** PHENOL SOLUTION, MARINE POLLUTANT  
· **IATA** PHENOL SOLUTION

· **Transport hazard class(es)**

· **DOT**



· **Class** 6.1 Toxic substances

· **Label** 6.1

· **ADR**



· **Class** 6.1 (T1) Toxic substances

· **Label** 6.1

· **IMDG**




· **Class** 6.1 Toxic substances

(Contd. on page 9)



Trade name: Phenol water-saturated, non-stabilized + separate Tris - Solution

(Contd. of page 8)

· <b>Label</b>	6.1
· <b>IATA</b>	
	
· <b>Class</b>	6.1 Toxic substances
· <b>Label</b>	6.1
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	II
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No Symbol (fish and tree)
· <b>Special marking (ADR):</b>	Symbol (fish and tree)
· <b>Special precautions for user</b>	Warning: Toxic substances
· <b>Danger code (Kemler):</b>	60
· <b>EMS Number:</b>	F-A,S-A
· <b>Stowage Category</b>	A
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E4 Maximum net quantity per inner packaging: 1 ml Maximum net quantity per outer packaging: 500 ml
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	100 ml
· <b>Excepted quantities (EQ)</b>	Code: E4 Maximum net quantity per inner packaging: 1 ml Maximum net quantity per outer packaging: 500 ml
· <b>UN "Model Regulation":</b>	UN 2821 PHENOL SOLUTIONS, 6.1, II, ENVIRONMENTALLY HAZARDOUS

**15 Regulatory information**

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

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

All ingredients are listed.

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

All ingredients are 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.

(Contd. on page 10)

**Trade name: Phenol water-saturated, non-stabilized + separate Tris - Solution**

(Contd. of page 9)

**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.

**Carcinogenicity 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 GHS08

**Signal word** Danger

**Hazard-determining components of labeling:**

Phenol crystalline

**Hazard statements**

- H301+H311+H331 Toxic if swallowed, in contact with skin or 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.

**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.
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P309 IF exposed or if you feel unwell:
- P310 Immediately call a poison center/doctor.

**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** 12/10/2017 / 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)

(Contd. on page 11)

**Trade name: Phenol water-saturated, non-stabilized + separate Tris - Solution**

(Contd. of page 10)

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. 3: Acute toxicity – Category 3  
Skin Corr. 1B: Skin corrosion/irritation – Category 1B  
Eye Dam. 1: Serious eye damage/eye irritation – 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.**

US