

Safety Data Sheet acc. to OSHA HCS

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Printing date 12/05/2017 Reviewed on 12/05/2017 Version number: 5

1 Identification

- · Product identifier
- Trade name: <u>Phenol non-stabilized : Chloroform : Isoamyl Alcohol 25 : 24 : 1 + separate Tris</u> solution
- Article number: A2489
 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

Tel.: +49 (0)6151 93570 Fax.: +49 (0)6151 935711 msds@applichem.com

- · Information department: Dept. Compliance
- Emergency telephone number: +49(0)6151 93570 (Inside normal business hours)

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.
- Carc. 2 H351 Suspected of causing cancer.
- Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 1 H372 Causes 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



- · Signal word Danger
- Hazard-determining components of labeling:
 Phenol crystalline
 trichloromethane
 3-methylbutan-1-ol
 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.
- H351 Suspected of causing cancer.

(Contd. on page 2)

H361	(Contd. of pa
	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
· Precautionary	statements
P280	Wear protective gloves / eye protection.
P301+P330+P3	31 If swallowed: Rinse mouth. Do NOT induce vomiting.
P305+P351+P3	38 If in eyes: Rinse cautiously with water for several minutes. Remove contact len
	if present and easy to do. Continue rinsing.
P309+P311	IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
Classification s	
· NFPA ratings (scale 0 - 4)
Fir	ealth = 3 e = 0 eactivity = 0
· HMIS-ratings (s	scale 0 - 4)
FIRE 0 Fi	ealth = 3 ire = 0 eactivity = 0
· Other hazards	
	and vPvB assessment
· PBT: Not applic	
· vPvB: Not appli	

· Description: Mixture: consisting of the following components.

· Dangerous components:		
67-66-3	trichloromethane	>40-≤50%
108-95-2	Phenol crystalline	>40-≤50%
123-51-3	3-methylbutan-1-ol	>1-≤2.5%

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. Call a doctor immediately.

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Trade name: Phenol non-stabilized : Chloroform : Isoamyl Alcohol 25 : 24 : 1 + separate Tris solution

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Trade name: Phenol non-stabilized : Chloroform : Isoamyl Alcohol 25 : 24 : 1 + separate Tris solution

123-51-3	3-methylbutan-1-ol	(Contd. of page 3) 1700* ppm
· PAC-3:		
67-66-3	trichloromethane	3,200 ppm
108-95-2	Phenol crystalline	200 ppm
123-51-3	3-methylbutan-1-ol	10000** ppm

7 Handling and storage

· Handling:

- Precautions for safe handling
 Protect from light.
 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: No special requirements.
- · 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

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 Components with limit values that require monitoring at the workplace: 		
67-6	6-3 trichloromethane	
PEL	Ceiling limit value: 240 mg/m ³ , 50 ppm	
REL	Short-term value: 9.78* mg/m³, 2* ppm *60-min; See Pocket Guide App. A	
TLV	Long-term value: 49 mg/m ³ , 10 ppm	
108-9	95-2 Phenol crystalline	
PEL	Long-term value: 19 mg/m³, 5 ppm Skin	
REL	Long-term value: 19 mg/m³, 5 ppm Ceiling limit value: 60* mg/m³, 15.6* ppm *15-min; Skin	
TLV	Long-term value: 19 mg/m³, 5 ppm Skin; BEI	
	(Contd. on page 5)	

US -

123-51-3 3-methylbutan-1-ol (Contd. of per PEL Long-term value: 360 mg/m³, 100 ppm primary and secondary REL Short-term value: 360 mg/m³, 100 ppm Long-term value: 360 mg/m³, 100 ppm Long-term value: 360 mg/m³, 100 ppm Long-term value: 360 mg/m³, 100 ppm IVI Short-term value: 320 mg/m³, 125 ppm Long-term value: 320 mg/m³, 100 ppm 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 General protective and hygienic measures: Keep away from loodstuffs, beverages and feed. Immediately remove all soled and contaminated clothing. Wash hands before breaks and at the end of work. Store protective adolyment: Store protective clothing separately. Avoid contact with the eyes and skin. Breating equipment: Store term filter device: Combination filter A-P3 In case of brief exposure or low pollution use respiratory filter device. In case of intensive or lor exposure us respiratory protective device that is independent of circulating air. Pretection of hands: Directive gloves <th></th> <th>me: Phenol non-stabilized : Chloroform : Isoamyl Alcohol 25 : 24 : 1 + separate Tris solution</th>		me: Phenol non-stabilized : Chloroform : Isoamyl Alcohol 25 : 24 : 1 + separate Tris solution
PEL Long-term value: 360 mg/m³, 100 ppm primary and secondary Long-term value: 450 mg/m³, 125 ppm Long-term value: 450 mg/m³, 125 ppm Long-term value: 450 mg/m³, 100 ppm TLV Short-term value: 361 mg/m³, 100 ppm Long-term value: 361 mg/m³, 100 ppm 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 equipment: General protective equipment: General protective equipment: General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all solied 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: Combination filter A-P3 In case of brief exposure or low pollution use respiratory filter device. In case of intensive or lor 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/ preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and degradation Material of gloves The selection of the glove material consideration of the penetration times, rates of diffusion and degradation Material of gloves The selection of the application. Penetration time of glove material can not be calculated in advance and has therefor be checked prior to the application. Penetration time of glove material can not be calculated in advance and has therefor be checked prior to the application. Penetration time of glove material : ≥ 0.70 mm Fluorocarbon rubber (Viton) Value for the permeation: Level ≥ 480 min		
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Long-term value: 360 mg/m³, 100 ppm primary and secondary TLV Short-term value: 452 mg/m³, 125 ppm Long-term value: 351 mg/m³, 100 ppm Ingretients 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 solied 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: Combination filter A-P3 In case of brief exposure or low pollution use respiratory filter device. In case of intensive or lor exposure use respiratory protective device that is independent of circulating air. Protection of hands: The glove material has to be impermeable and resistant to the product/ the substance/ preparation. Selection of the gloves The glove material has to be impermeable and resistant to the product/ the substance/ preparation. Material of gloves The selection of the suitable gloves does not only depend on the material, but also on further mark quality and varies from manufacturer to manufacturer. As the product is a preparation of sev substances, the resistance of the glove material The exact break through time has to be found out by the manufacturer of the protective gloves has to be observed. Pertertation time of gloves made of the following materials are suitable: Recommended thickness of the material: ≥ 0.70 mm Fluorccarbon rubber (Viton) Value for the permeation: Level ≥ 480 min Huercarbon rubber (Viton)		primary and secondary
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Value for the permeation: Level \geq 480 min	· As p Reco	rotection from splashes gloves made of the following materials are suitable: mmended thickness of the material: ≥ 0.70 mm
	value	

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Trade name: Phenol non-stabilized : Chloroform : Isoamyl Alcohol 25 : 24 : 1 + separate Tris solution

· 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 hazourdous substances handled.

Information on basic physical and General Information	chemical properties
Appearance: Form: Color: Odor: Odor threshold:	Fluid different Characteristic Not determined.
pH-value:	Not determined.
Change in condition Melting point/Melting range: Boiling point/Boiling range:	Undetermined. 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: Upper:	1.8 Vol % 8.6 Vol %
Vapor pressure at 20 °C (68 °F):	211 hPa (158.3 mm Hg)
Density: Relative density Vapor density Evaporation rate	Not determined. Not determined. Not determined. Not determined.
Solubility in / Miscibility with Water:	No data available
Partition coefficient (n-octanol/wate	er): Not determined.
Viscosity: Dynamic: Kinematic:	Not determined. Not determined.
Solvent content: Organic solvents: VOC content:	47.0 % 47.00 %

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Reviewed on 12/05/2017 Version number: 5

Trade name: Phenol non-stabilized : Chloroform : Isoamyl Alcohol 25 : 24 : 1 + separate Tris solution

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: oxidizing agent
- acids
- bases

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

11 Toxicological information

108-95-2 Phenol crystalline

67-66-3 trichloromethane

None of the ingredients is listed.

· NTP (National Toxicology Program)

· OSHA-Ca (Occupational Safety & Health Administration)

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

· LD/LC50 values that are relevant for classification:					
· Compone	ents	Туре	Value	Species	
67-66-3 tr	ichlor	omethane			
Oral	LD50	695 mg/kg (rat)			
Dermal	LD50	3,980 mg/kg (rabbit)			
108-95-2 I	Pheno	l crystalline			
Oral	LD50	317 mg/kg (rat)			
Dermal	LD50	669 mg/kg (rat)			
		850 mg/kg (rabbit)			
Inhalative	LC50	316 mg/l (rat)			
· Primary ir					
		ustic effect on skin and	mucous me	embranes.	
		ng caustic effect.			
		cological information:	iers accord	ing to internally approved calculation methods	s for
preparatio		ws the following dang		ing to internally approved calculation method.	5 101
Toxic	-				
Corrosive					
			effect on m	nouth and throat and to the danger of perforation	on of
esophagu	s and s	stomacn.			
· Carcinogenic categories					
· IARC (International Agency for Research on Cancer)					
67-66-3	trichlo	romethane			2B

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Trade name: Phenol non-stabilized : Chloroform : Isoamyl Alcohol 25 : 24 : 1 + separate Tris solution

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-US

· Toxicity		
· Aquatic to	xicity:	
· Type of te	st Effective concentrat	ion Method Assessment
67-66-3 tri	chloromethane	
EC50/48 h	79 mg/l (daphnia magna)
LC50/96 h	18 mg/l (fish)	
108-95-2 F	henol crystalline	
EC50	25 mg/l (Bakterien)	
	100 mg/l (daphnia magn	a)
	44.5 mg/l (fish)	
	e and degradability No n environmental systen	further relevant information available.
Water haza	ard class 3 (Self-assessm drinking water if even extr	ent): extremely hazardous for water emely small quantities leak into the ground.
Results of PBT: Not a vPvB: Not Other adv	PBT and vPvB assessr applicable. applicable. erse effects No further re	
 Results of PBT: Not a vPvB: Not Other adv 3 Disposa Waste treat Recommendation Chemicals 	PBT and vPvB assess applicable. erse effects No further re considerations atment methods ndation: must be disposed of in co	nent elevant information available.
 Results of PBT: Not a vPvB: Not Other adv 3 Disposa Waste treat Recommendation Chemicals Must not be system. 	PBT and vPvB assess applicable. erse effects No further re- considerations atment methods ndation: must be disposed of in co- be disposed of together of	nent elevant information available.
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 Results of PBT: Not a vPvB: Not Other adva 3 Disposa Waste treat Recommendation Chemicals Must not be system. Uncleaned Recommendation Recommendation Recommendation Recommendation Packaging 	PBT and vPvB assess applicable. applicable. erse effects No further re- considerations atment methods ndation: must be disposed of in co be disposed of together v d packagings: ndation: must be made according to	nent elevant information available. ompliance with the respective national regulations. with household garbage. Do not allow product to reach sewa
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	(Contd. of pa
Transport hazard class(es)	
DOT	
Class Label	6.1 Toxic substances 6.1
ADR	
Class	6.1 (T1) Toxic substances
Label	6.1
IMDG, IATA	
Class Label	6.1 Toxic substances 6.1
Packing group DOT, ADR, IMDG, IATA	11
Environmental hazards: Marine pollutant: Special marking (ADR):	No Symbol (fish and tree)
Special precautions for user	Warning: Toxic substances
Danger code (Kemler): EMS Number:	60 F-A.S-A
Segregation groups	Liquid halogenated hydrocarbons
Stowage Category	A SW/2 Class of living guarters
Stowage Code	SW2 Clear of living quarters.
Transport in bulk according to Annex I 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) Excepted quantities (EQ)	5L Code: E1
LACEPTEU quantities (EQ)	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

Trade name: Phenol non-stabilized : Chloroform : Isoamyl Alcohol 25 : 24 : 1 + separate Tris

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· UN "Model Regulation":

UN 2810 TOXIC, LIQUIDS, ORGANIC, N.O.S. (PHENOL, CHLOROFORM), 6.1, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

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

· Section 355 (extremely hazardous substances):	
67-66-3 trichloromethane	
108-95-2 Phenol crystalline	
Section 313 (Specific toxic chemical listings):	
67-66-3 trichloromethane	
108-95-2 Phenol crystalline	
TSCA (Toxic Substances Control Act):	
All ingredients are listed.	
· Proposition 65	
· Chemicals known to cause cancer:	
67-66-3 trichloromethane	
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:	
67-66-3 trichloromethane	
· Cancerogenity categories	
· EPA (Environmental Protection Agency)	
67-66-3 trichloromethane B2, I	., NL
108-95-2 Phenol crystalline D, I	
• TLV (Threshold Limit Value established by ACGIH)	
67-66-3 trichloromethane	A3
108-95-2 Phenol crystalline	A4
NIOSH-Ca (National Institute for Occupational Safety and Health)	
67-66-3 trichloromethane	
- 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 trichloromethane 3-methylbutan-1-ol

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Trade name: Phenol non-stabilized : Chloroform : Isoamyl Alcohol 25 : 24 : 1 + separate Tris solution

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· 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.

H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

· Precautionary statements

P280 Wear protective gloves / eye protection.

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

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+P311 IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

· 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 12/05/2017 / 4
- 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)

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
- Carc. 2: Carcinogenicity Category 2
- Repr. 2: Reproductive toxicity Category 2 STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
- * Data compared to the previous version altered.

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