

Printing date 03/30/2019 Version Number 2 Reviewed on 03/30/2019

1 Identification

· Product identifier

· Trade name: Phenol Standard (1X1 mL)

· Part number: PHM-814-1

· Application of the substance / the mixture Reagents and Standards for Analytical Chemical Laboratory Use

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier: Agilent Technologies, Inc. 5301 Stevens Creek Blvd. Santa Clara, CA 95051 USA

· Information department:

Telephone: 800-227-9770

e-mail: pdl-msds author@agilent.com

· Emergency telephone number: CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

· Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H336 May cause drowsiness or dizziness.

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







GHS02

GHS07

- · Signal word Danger
- · Hazard-determining components of labeling:

propan-2-ol

DNOC

2,4-dichlorophenol

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pentachlorophenol

chlorocresol

· Hazard statements

Highly flammable liquid and vapor.

Harmful if swallowed.

Causes serious eye irritation.

May cause an allergic skin reaction.

Suspected of causing cancer.

May cause drowsiness or dizziness.

Precautionary statements

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

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

Wash thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

Contaminated work clothing must not be allowed out of the workplace.

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

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

Rinse mouth.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

If skin irritation or rash occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Wash contaminated clothing before reuse.

In case of fire: Use for extinction: CO2, powder or water spray.

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

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

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



Health = 2Fire = 3

Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = 2

Fire = 3



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

3 Composition/information on ingredients

- · Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:		
67-63-0	propan-2-ol	97.71%
534-52-1	DNOC	0.255%
87-86-5	pentachlorophenol	0.255%
	2,4,6-trichlorophenol	0.255%
59-50-7	chlorocresol	0.255%

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.

· After inhalation:

Supply fresh air and to be sure call for a doctor.

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

- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- · After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

- · After swallowing: Immediately call a doctor.
- · 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:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- · For safety reasons unsuitable extinguishing agents: Water with full jet
- Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

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6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

- Environmental precautions: 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.

· 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:		
	propan-2-ol	400 ppm
534-52-1	DNOC	0.6 mg/m ³
120-83-2	2,4-dichlorophenol	0.2 ppm
88-75-5	2-nitrophenol	2.1 mg/m ³
	4-nitrophenol	0.69 mg/m
	pentachlorophenol	1 mg/m^3
88-06-2	2,4,6-trichlorophenol	2.5 mg/m ³
59-50-7	chlorocresol	5.5 mg/m ³
108-95-2	phenol	15 ppm
· PAC-2:		
67-63-0	propan-2-ol	2000* ppn
534-52-1		0.83 mg/m
120-83-2	2,4-dichlorophenol	2 ppm
88-75-5	2-nitrophenol	23 mg/m³
100-02-7	4-nitrophenol	7.6 mg/m ³
	pentachlorophenol	15 mg/m³
88-06-2	2,4,6-trichlorophenol	27 mg/m³
59-50-7	chlorocresol	60 mg/m ³
108-95-2	phenol	23 ppm
· PAC-3:		,
67-63-0	propan-2-ol	12000** ppr
534-52-1	DNOC	5 mg/m ³
120-83-2	2,4-dichlorophenol	20 ppm
88-75-5	2-nitrophenol	140 mg/m ³
	4-nitrophenol	46 mg/m³
	pentachlorophenol	150 mg/m ³
	2,4,6-trichlorophenol	160 mg/m ³
	chlorocresol	360 mg/m ³
		(Contd. on page



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 108-95-2
 phenol
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 200 ppm

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 ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage:
- Requirements to be met by storerooms and receptacles: Store in a cool location.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· 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

I		
· Comp	· Components with limit values that require monitoring at the workplace:	
67-63	3-0 propan-2-ol	
PEL	Long-term value: 980 mg/m³, 400 ppm	
	Short-term value: 1225 mg/m³, 500 ppm Long-term value: 980 mg/m³, 400 ppm	
	Short-term value: 984 mg/m³, 400 ppm Long-term value: 492 mg/m³, 200 ppm BEI	
534-5	534-52-1 DNOC	
PEL	Long-term value: 0.2 mg/m³ Skin	
	Long-term value: 0.2 mg/m³ Skin	
TLV	Long-term value: (0.2) NIC-0.2* mg/m³ *inhalable fraction + vapor; Skin	
87-86	7-86-5 pentachlorophenol	
PEL	Long-term value: 0.5 mg/m³ Skin	

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REL Long-term value: 0.5 mg/m³

Skin

TLV Short-term value: 1* mg/m³ Long-term value: 0.5* mg/m³ Skin; BEI;*inhalable fraction+vapor

· Ingredients with biological limit values:

67-63-0 propan-2-ol

BEI 40 mg/L

Medium: urine

Time: end of shift at end of workweek

Parameter: Acetone (background, nonspecific)

87-86-5 pentachlorophenol

BEI 2 mg/g creatinine

Medium: urine

Time: prior to last shift of workweek

Parameter: Total pentachlorophenol (background)

5 mg/L

Medium: plasma Time: end of shift

Parameter: Free pentachlorophenol (background)

- · 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.

Avoid contact with the eyes and skin.

Breathing equipment:

When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.

Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.

· Protection of hands:

Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

· Material of gloves

For normal use: nitrile rubber, 11-13 mil thickness

For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· Penetration time of glove material

For normal use: nitrile rubber: 1 hour

For direct contact with the chemical: butyl rubber: >4 hours

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· Eye protection:

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Tightly sealed goggles

Physical and chemical proper	ties
· Information on basic physical and c	hemical properties
· General Information	
· Appearance: Form:	Fluid
rorm: Color:	Clear
· Odor:	Alcohol-like
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	-89.5 °C (-129.1 °F)
Boiling point/Boiling range:	82 °C (179.6 °F)
· Flash point:	12 °C (53.6 °F)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	425 °C (797 °F)
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits:	
Lower:	2 Vol %
Upper:	12 Vol %
· Vapor pressure at 20 °C (68 °F):	35 hPa (26.3 mm Hg)
· Density at 20 °C (68 °F):	0.785 g/cm³ (6.55083 lbs/gal)
· Relative density	Not determined.
Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water at 20 °C (68 °F):	1 g/l
· Partition coefficient (n-octanol/water): Not determined.	
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.

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 • Solvent content:
 98.2 %

 Organic solvents:
 98.22 %

 VOC content:
 98.22 %

 982.2 g/l / 8.20 lb/gal

 Solids content:
 2.3 %

 • Other information
 No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC50	· LD/LC50 values that are relevant for classification:		
ATE (Acute Toxicity Estimate)			
Oral	LD50	1,312 mg/kg (rat)	
Dermal	LD50	21,762 mg/kg	
Inhalative	LC50/4 h	49.4 mg/L	
67-63-0 pi	ropan-2-ol		
Oral	LD50	4,710 mg/kg (rat)	
Dermal	LD50	12,800 mg/kg (rat)	
		12,800 mg/kg (rabbit)	
Inhalative	LC50/4 h	72.6 mg/L (rat)	
534-52-1 1	DNOC		
Oral	LD50	7 mg/kg (rat)	
Dermal	LD50	200 mg/kg (rat)	
		1,000 mg/kg (rabbit)	
87-86-5 pc	entachloro	phenol	
Oral	LD50	27 mg/kg (rat)	
Dermal	LD50	96 mg/kg (rat)	
Inhalative	LC50/4 h	355 mg/L (rat)	
88-06-2 2,4,6-trichlorophenol		rophenol	
Oral	LD50	820 mg/kg (rat)	
		(Contd. on page 9)	

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59-50-7 chlorocresol		
Oral	LD50	1,830 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)

- Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: Irritating effect.
- · Sensitization: Sensitization possible through skin contact.
- · Additional toxicological information:

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

Harmful Irritant

· Carcinogenic categories

	nternational Agency for Research on Cancer)	
67-63-0	propan-2-ol	3
120-83-2	2,4-dichlorophenol	2B
87-86-5	pentachlorophenol	2B
88-06-2	2,4,6-trichlorophenol	2B
108-95-2	phenol	3
· NTP (Na	tional Toxicology Program)	
87-86-5	pentachlorophenol	R
88-06-2	2,4,6-trichlorophenol	R
· OSHA-Ca (Occupational Safety & Health Administration)		
None of the ingredients is listed.		

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · 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.
- · Additional ecological information:
- · General notes:

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.

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13 Disposal considerations

- · Waste treatment methods
- · Recommendation:

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.

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Not Regulated, De minimus Quantities	-
UN-Number DOT, IMDG, IATA	UN1993
UN proper shipping name DOT IMDG, IATA	Flammable liquids, n.o.s. (Isopropanol) FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL (ISOPROPY ALCOHOL))
Transport hazard class(es)	
DOT, IMDG, IATA	
Class	3 Flammable liquids
Label	3
Packing group DOT, IMDG, IATA	П
Environmental hazards:	Not applicable.
Special precautions for user Danger code (Kemler): EMS Number: Stowage Category	Warning: Flammable liquids 33 F-E, <u>S-E</u> B
Transport in bulk according to Annex MARPOL73/78 and the IBC Code	II of Not applicable.
Transport/Additional information:	
DOT Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
IMDG Limited quantities (LQ)	1L

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(Contd. of page 10) Code: E2 · Excepted quantities (EQ) Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml UN 1993 FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL · UN "Model Regulation": (ISOPROPYL ALCOHOL)), 3, II

15 Regulatory information

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

· Section 355 (extremely hazardous substances):	
95-48-7	o-cresol
534-52-1	DNOC
108-95-2	phenol
· Section 313 (Specific toxic chemical listings):	

	propan-2-ol
95-48-7	o-cresol
534-52-1	DNOC
120-83-2	2,4-dichlorophenol
88-75-5	2-nitrophenol

- 100-02-7 4-nitrophenol 87-86-5 pentachlorophenol
 - 88-06-2 2,4,6-trichlorophenol
- 108-95-2 phenol

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· TSCA new (21st Century Act): (Substances not listed)

534-52-1	DNOC

88-06-2 2,4,6-trichlorophenol

59-50-7 chlorocresol

· Proposition 65

Chemicals known to cause cancer:		
87-86-5	pentachlorophenol	

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

88-06-2 2,4,6-trichlorophenol

· 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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· EPA (Environmental Protection Agency)			
95-48-7	o-cresol	C	
87-86-5	pentachlorophenol	L	
88-06-2	2,4,6-trichlorophenol	B2	
108-95-2	phenol	D,	
TLV (Th	reshold Limit Value established by ACGIH)		
67-63-0	propan-2-ol	A	
87-86-5	pentachlorophenol	A	
108-95-2	phenol	A	
NIOSH-	Ca (National Institute for Occupational Safety and Health)		
NT C	he ingredients is listed.		

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- · Department issuing SDS: Document Control / Regulatory
- · Contact: regulatory@ultrasci.com
- · Date of preparation / last revision 03/30/2019 / 1
- · 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

Flam. Liq. 2: Flammable liquids — Category 2

Acute Tox. 4: Acute toxicity – Category 4

Eye Irrit. 2A: Serious eye damage/eye irritation - Category 2A

Skin Sens. 1: Skin sensitisation – Category 1

Carc. 2: Carcinogenicity - Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

* Data compared to the previous version altered.