analytichem

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Phenol > 99 % for analysis, ACS

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Phenol > 99 % for analysis, ACS

REACH Registration Number:	01-2119471329-32-XXXX
CAS No:	108-95-2
Index No:	604-001-00-2
EC No:	203-632-7

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Reagents and laboratory chemicals
Only for laboratory and analysis purposes.

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name:	AnalytiChem GmbH ACD		
Street:	Stempelstraße 6		
Place:	D-47167 Duisburg		
Telephone:	0203/5194-0	Telefax:	0203/5194-290
E-mail:	info@analytichem.de		
Contact person:	Abteilung Produktsicherheit	Telephone:	0203/5194-107/117
E-mail:	produktsicherheit@analytichem.de		
Internet:	www.analytichem.de		
Responsible Department:	Abteilung Produktsicherheit		

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

No data available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Muta. 2; H341
Acute Tox. 3; H331
Acute Tox. 3; H311
Acute Tox. 3; H301
Skin Corr. 1B; H314
STOT RE 2; H373
Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:

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.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: C6H5OH

Molecular weight: 94,11 g/mol

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
108-95-2	phenol			100 %
	203-632-7	604-001-00-2	01-2119471329-32-XXXX	
	Muta. 2, Acute Tox. 3, Acute Tox. 3, Acute Tox. 3, Skin Corr. 1B, STOT RE 2, Aquatic Chronic 2; H341 H331 H311 H301 H314 H373 H411			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
108-95-2	203-632-7	phenol	100 %
	inhalation: ATE = 3 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists); dermal: LD50 = 850 mg/kg; oral: LD50 = 530 mg/kg Skin Corr. 1B; H314: >= 3 - 100 Skin Irrit. 2; H315: >= 1 - < 3 Eye Irrit. 2; H319: >= 1 - < 3		

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

fast help required Call a physician immediately.
First aider: Pay attention to self-protection!
Remove affected person from the danger area and lay down.

After inhalation

Provide fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Call a physician immediately.

After contact with skin

Wash immediately with: Water, Polyethylene glycol 400 / Polyethylene glycol 300/ethanol (2:1)
Take off immediately all contaminated clothing and wash it before reuse.
Call a physician immediately.
(for phenol): rinse the affected skin areas with plenty of water as quickly as possible using the nearest emergency shower. Rinse with a mixture of polyethylene glycol 300 (PEG 300)/ethanol 2:1; Rinse with polyethylene glycol 400 (PEG 400) ; Rinse with polyethylene glycol 300 (PEG 300). Practical experience and experimental studies have shown that the best results are achieved with the first method (PEG 300/ethanol) for practically all phenols. As far as non-chlorinated cresols and phenols are concerned, PEG 400 can also be used successfully. After rinsing with PEG 400 or PEG 300/ethanol 2:1, you should alternately rinse with plenty of water (e.g. emergency shower).

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.
Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Rinse mouth immediately and drink plenty of water.
(Water, to which activated charcoal may be added)
Do not allow a neutralisation agent to be drunk.
Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Irritant, corrosive
Dyspnoea, Cough
Dizziness, Dizziness
Inebriation, Cardiac arrhythmias
Circulatory collapse, Headache
Respiratory complaints, Unconsciousness
Risk of serious damage to eyes.

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible solids
Danger of dust explosion.

Hazardous combustion products

In case of warming: Vapours are heavier than air, spread along floors and form explosive mixtures with air.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

Avoid contact with skin, eyes and clothes.

Additional information

Use water spray jet to protect personnel and to cool endangered containers.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Do not breathe dust/fume/gas/mist/vapours/spray.

For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

Consult an expert

Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Take up carefully when dry. Take up dust-free and set down dust-free.

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Avoid exposure - obtain special instructions before use.

Keep container tightly closed.

Do not breathe dust. Avoid dust formation.

Avoid contact with skin, eyes and clothes.

Read label before use.
Use extractor hood (laboratory).

Advice on protection against fire and explosion

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take action to prevent static discharges.
In case of warming: Vapours can form explosive mixtures with air.
Danger of dust explosion.
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Advice on general occupational hygiene

Wash contaminated clothing prior to re-use.
Avoid contact with skin, eyes and clothes.

Further information on handling

Wash contaminated clothing before reuse.
Wash hands before breaks and after work.
Draw up and observe skin protection programme.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed.
storage temperature: +15°C - +25°C
Store in a place accessible by authorized persons only.

Hints on joint storage

national regulations

Further information on storage conditions

Store in a dry place.
Store in a well-ventilated place.
Protect against: Light

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
108-95-2	Phenol	2	8		TWA (8 h)	
		4	16		STEL (15 min)	

Biological limit values

CAS No	Substance	Parameter	Value	Test material	Sampling time
108-95-2	Phenol	Phenol	120 mg/g	Creatinine	End of shift

DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
108-95-2	phenol		
Worker DNEL, long-term	inhalation	systemic	8 mg/m³
Worker DNEL, acute	inhalation	local	16 mg/m³
Worker DNEL, long-term	dermal	systemic	1,23 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	0,452 mg/m³
Consumer DNEL, long-term	dermal	systemic	0,5 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	0,5 mg/kg bw/day

PNEC values

CAS No	Substance
Environmental compartment	Value
108-95-2	phenol
Freshwater	0,008 mg/l
Freshwater (intermittent releases)	0,031 mg/l
Marine water	0,001 mg/l
Freshwater sediment	0,091 mg/kg
Marine sediment	0,009 mg/kg
Micro-organisms in sewage treatment plants (STP)	2,1 mg/l
Soil	0,136 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles

Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact
Trade name/designation: KCL 897 Butoject®
Recommended material: Butyl caoutchouc (butyl rubber) 0,3 mm
Wearing time with permanent contact: > 480 min

By short-term hand contact
Trade name/designation: KCL 730 Camatril® Velours
Recommended material: NBR (Nitrile rubber) 0,4 mm
Wearing time with occasional contact (splashes): > 144 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g.

KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Wear suitable protective clothing.
Flame-retardant protective clothing, antistatic
Wash hands before breaks and after work.
The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

Respiratory protection

Respiratory protection necessary at: dust formation, aerosol or mist formation
Filtering device with filter or ventilator filtering device of type: A-(P3)
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Thermal hazards

No data available

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	solid
Colour:	colourless
Odour:	characteristic
Odour threshold:	No data available
Melting point/freezing point:	40,8 °C
Boiling point or initial boiling point and boiling range:	181,8 °C
Flammability:	No data available
Lower explosion limits:	1,3 vol. %
Upper explosion limits:	9,5 vol. %
Flash point:	81 °C
Auto-ignition temperature:	595 °C
Decomposition temperature:	No data available
pH-Value (at 20 °C):	~5 (50 g/l)
Viscosity / kinematic:	No data available
Water solubility: (at 20 °C)	84 g/l

Solubility in other solvents

No data available

Dissolution rate:	No data available
Partition coefficient n-octanol/water:	log Pow: 1,47 (30 °C)
Dispersion stability:	No data available
Vapour pressure: (at 20 °C)	0,2 hPa
Vapour pressure:	No data available
Density (at 20 °C):	1,07 g/cm³
Relative density:	No data available
Bulk density:	~620 kg/m³
Relative vapour density:	No data available
Particle characteristics:	No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

Danger of dust explosion.

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Sustained combustibility:	No data available

Self-ignition temperature

Solid:	715 °C
Gas:	No data available

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate:	No data available
Solvent separation test:	No data available
Solvent content:	No data available
Solid content:	No data available
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available

No data available:

Viscosity / dynamic: (at 50 °C)	3,437 mPa·s
Flow time:	No data available

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

In case of warming: Vapours can form explosive mixtures with air.

Danger of dust explosion.

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2. Chemical stability

Protect against: Light

10.3. Possibility of hazardous reactions

Aluminium, aldehydes

Hydrogen peroxide, Oxidising agent

Strong acid, Strong alkali

Formaldehyde, Nitrites, Nitrate

10.4. Conditions to avoid

Heat

Light

10.5. Incompatible materials

Rubber articles

Plastic articles

metals (including their alloys)

10.6. Hazardous decomposition products

No data available

Further information

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicocinetics, metabolism and distribution

Avoid exposure - obtain special instructions before use.

Acute toxicity

Toxic if inhaled.
Toxic in contact with skin.
Toxic if swallowed.
If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).
Irritation to respiratory tract
Mucous membrane irritation in the mouth, throat, esophagus and gastrointestinal tract.
Inhalation effect: Damage to the respiratory tract.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
108-95-2	phenol				
	oral	LD50 530 mg/kg	Rat	J Pharmacol Exp Ther 80: 233-240 (1944)	OECD Guideline 401
	dermal	LD50 850 mg/kg	Rabbit	Am Ind Hyg Assoc J 37: 596-606 (1976)	OECD Guideline 402
	inhalation vapour	ATE 3 mg/l			
	inhalation dust/mist	ATE 0,5 mg/l			

Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/eye irritation: Causes serious eye damage.
Risk of serious damage to eyes.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of causing genetic defects. (phenol)
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure. (phenol)
Organs affected:
central nervous system
kidneys
liver
Haut

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information

No data available

Further information

Irritant, corrosive
Dyspnoea, Cough
Dizziness, Dizziness
Inebriation, Cardiac arrhythmias
Circulatory collapse, Headache
Respiratory complaints, Unconsciousness
Risk of serious damage to eyes.

SECTION 12: Ecological information

12.1. Toxicity

Toxic to aquatic life with long lasting effects.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
108-95-2	phenol						
	Acute fish toxicity	LC50	8,9 mg/l	96 h	Oncorhynchus mykiss	Publication (1980)	other:
	Acute algae toxicity	ErC50 mg/l	61,1	96 h	Raphidocelis subcapitata	Environ. Toxicol. Water Qual. 7: 35-48 (	other: US EPA
	Acute crustacea toxicity	EC50	3,1 mg/l	48 h	Ceriodaphnia dubia	Publication (1991)	Test performance in compliance with EPA
	Fish toxicity	NOEC mg/l	0,077	60 d	Cirrhina mrigala	Publication (1984)	Method: other
	Crustacea toxicity	NOEC mg/l	0,16	16 d	Daphnia magna	Ecotoxicol. Envir. Saf. 15: 72-77 (1988)	other: NEN 6502

12.2. Persistence and degradability

100 %; 6 d
OECD 302B
Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
108-95-2	phenol	1,47

BCF

CAS No	Chemical name	BCF	Species	Source
108-95-2	phenol	17,5	Danio rerio	Publication (1985)

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

Discharge into the environment must be avoided.
Forms corrosive mixtures with water even if diluted.

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Send to a physico-chemical treatment facility under observation of official regulations.
Do not empty into drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 1671
14.2. UN proper shipping name:	PHENOL, SOLID
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	II
Hazard label:	6.1
Classification code:	T2
Special Provisions:	279
Limited quantity:	500 g
Excepted quantity:	E4
Transport category:	2
Hazard No:	60
Tunnel restriction code:	D/E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 1671
14.2. UN proper shipping name:	PHENOL, SOLID
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	II
Hazard label:	6.1
Classification code:	T2
Special Provisions:	279 802

Limited quantity:	500 g
Excepted quantity:	E4

Marine transport (IMDG)

14.1. UN number or ID number:	UN 1671
14.2. UN proper shipping name:	PHENOL, SOLID
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	II
Hazard label:	6.1
Special Provisions:	279
Limited quantity:	500 g
Excepted quantity:	E4
EmS:	F-A, S-A

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 1671
14.2. UN proper shipping name:	PHENOL, SOLID
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	II
Hazard label:	6.1
Special Provisions:	A113
Limited quantity Passenger:	1 kg
Passenger LQ:	Y644
Excepted quantity:	E4
IATA-packing instructions - Passenger:	669
IATA-max. quantity - Passenger:	25 kg
IATA-packing instructions - Cargo:	676
IATA-max. quantity - Cargo:	100 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS:	Yes
Danger releasing substance:	phenol

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

14.7. Maritime transport in bulk according to IMO instruments

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulatory information

Restrictions on use (REACH, annex XVII):
Entry 75

Information according to Directive 2012/18/EU (SEVESO III): H2 ACUTE TOXIC

Additional information: E2

National regulatory information

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water hazard class (D):	2 - obviously hazardous to water

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,4,8.

Abbreviations and acronyms

Acute Tox. 3: Acute toxicity, hazard category 3
Skin Corr. 1B: Skin corrosion, sub-category 1B
Eye Dam. 1: Serious eye damage, hazard category 1
Muta. 2: Germ cell mutagenicity, hazard category 2
STOT RE 2: Specific target organ toxicity - repeated exposure, hazard category 2
Aquatic Chronic 2: Hazardous to the aquatic environment, long-term hazard category: Chronic 2

Relevant H and EUH statements (number and full text)

H301	Toxic if swallowed.
H301+H311+H331	Toxic if swallowed, in contact with skin or if inhaled.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H341	Suspected of causing genetic defects.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.
The receiver of our product is singularly responsible for adhering to existing laws and regulations.
Provide appropriate information, instructions and training to users