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

· Product identifier

· Trade name: Phenol Crystal BP Ultra pure grade >99.0%

· **Article number:** 40-1410-01

· CAS Number:

108-95-2

· EC number:

203-632-7

· Index number:

604-001-00-2

· Relevant identified uses of the substance or mixture and uses advised against

Use in laboratories; Uses in coatings - paints, inks, adhesives and production of textiles; Use as binders and release agents; Rubber production and processing; Polymer manufacturing; Phenolic Resin processing; Intermediate use in the manufacture of another substance; Intermediate use as part of a monomer mixture for the manufacture of polymeric resins.

Uses advised against:

- -Uses by workers in industrial settings advised against
- -Uses by professional workers advised against
- -Uses by consumers advised against
- -Consumers shall not use phenol

Sector of Use

SU0 Other

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU12 Manufacture of plastics products, including compounding and conversion

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

· Product category

PC0 Other

PC19 Intermediate

· Process category

PROC0: Other

PROC1 Use in closed process, no likelihood of exposure

PROC2 Use in closed, continuous process with occasional controlled exposure

PROC3 Use in closed batch process (synthesis or formulation)

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC6 Calendering operations

PROC7 Industrial spraying

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC10 Roller application or brushing

PROC11 Non industrial spraying

PROC13 Treatment of articles by dipping and pouring

PROC14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation

PROC15 Use as laboratory reagent

· Environmental release category

ERC0 Other

ERC1 Manufacture of substances

ERC2 Formulation of preparations

ERC3 Formulation in materials

ERC4 Industrial use of processing aids in processes and products, not becoming part of articles

ERC5 Industrial use resulting in inclusion into or onto a matrix

ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)

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ERC6b Industrial use of reactive processing aids

ERC6c Industrial use of monomers for manufacture of thermo-plastics

ERC6d Industrial use of process regulators for polymerisation processes in production of resins,

rubbers, polymers

ERC8a Wide dispersive indoor use of processing aids in open systems

ERC8b Wide dispersive indoor use of reactive substances in open systems

ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix

ERC8d Wide dispersive outdoor use of processing aids in open systems

ERC8e Wide dispersive outdoor use of reactive substances in open systems

ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix

· Application of the substance / the preparation Laboratory reagent

· Details of the supplier of the safety data sheet

Severn Biotech Ltd.

Unit 2,

Park Lane,

Kidderminster,

Worcestershire.

DY116TJ

UK

Tel: 0044 1562 825286 Fax: 0044 1562 825284

email: info@severnbiotech.com

- · Further information obtainable from: Product safety department.
- · Emergency telephone number: Tel: 0044 1562 825286 (not 24 hours)

2 Hazards identification

- · Classification of the substance or mixture
- · Classification according to Regulation (EC) No 1272/2008



GHS06 skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H311 Toxic in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 health hazard

Muta. 2

H341 Suspected of causing genetic defects.

STOT RE 2

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



GHS05 corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC



T; Toxic

R23/24/25:

Toxic by inhalation, in contact with skin and if swallowed.

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1

C; Corrosive

R34·

×

Causes burns.

Xn; Harmful

R48/20/21/22-68: Harmful: danger of serious damage to health by prolonged exposure through

inhalation, in contact with skin and if swallowed. Possible risk of irreversible

effects.

Muta. Cat. 3

· Information concerning particular hazards for human and environment: Not applicable.

· Label elements

· Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

· Hazard pictograms GHS05, GHS06, GHS08

· Signal word Danger

· 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

P260 Do not breathe dust.

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

P270 Do no eat, drink or smoke when using this product.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.

Rinse skin with water/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.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable

for breathing.

· 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)
EC number: 203-632-7
Index number: 604-001-00-2

4 First aid measures

- · Description of first aid measures
- · General information:

Remove breathing equipment only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

First-aider to wear safety gloves and other PPE as required for self protection.

Bring injured persons to the fresh air, lie comfortably, loosen tight clothing, remove contaminated clothing immediately.

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In the case of vomiting or danger of unconsciousness, lie and transport in stabilised side position.

Keep polyethylene glycol (Lutrol) and Ambubag available for first aider use.

In all cases of significant exposure the patient should be transferred to a hospital as soon as possible.

· After inhalation:

DO NOT DELAY!

Call a doctor immediately.

Supply fresh air or oxygen; call for doctor.

Use a respiratory bag or breathing device.

Do not use mouth to mouth or mouth to nose resuscitation.

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

· After skin contact:

DO NOT DELAY!

Immediately wash with water and soap and rinse thoroughly.

Immediately remove wetted clothing, shoes and stockings. Continuously rinse the affected parts of the body with polyethylene glycol (e.g. Lutrol) or with plenty of water, followed by washing with olive oil or edible oil (to remove the phenol component). If large areas of the skin have been wetted, IMMEDIATELY call a doctor to the site of the accident, otherwise in every case immediately take the patient to the nearest accident and emergency unit and provide a copy of this safety data sheet.

· After eye contact:

DO NOT DELAY!

Check for and remove any contact lenses.

Rinse opened eye for several minutes under running water. Then consult a doctor.

· After swallowing:

DO NOT DELAY!

Do not induce vomiting; call for medical help immediately.

Rinse out mouth and then drink plenty of water.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

· Information for doctor:

Contains PHENOL:

No specific antidote therapy for phenol poisoning is known. Therefore it is important to remove the phenol completely from the body surface and out of the body as quickly as possible, and in the case of inhalation prophylactic treatment to prevent pulmonal oedema is of great importance.

Phenol causes strong caustic burns of the skin and mucous membranes due to its protein degenerating action. The skin initially discolours white, later red. After initial pain, local anaesthesia appears. Absorptive poisoning by large amounts of phenol is possible also through small affected skin regions and quickly leads to paralysis of the central nervous system as well as strong depression of the body temperature.

Inhaling phenol vapours can lead to damage of the bronchial system and pulmonal oedema. Systemic damage to kidneys, liver and heart as well as neuropsychiatric disturbances are produced.

TREATMENT: Thoroughly clean the wetted skin areas, if possible with polyethylene glycol (e.g. Lutrol). In the case of eye contact, rinse copiously with water, in the case of burns rinse continuously with water as far as possible and take to an eye specialist or eye clinic. In the case of inhalation, to prevent pulmonal oedemia, initiate inhalative cortisone therapy as early as possible (e.g. every 10 minutes 5 strokes of a cortisone containing aerosol dosing spray such as Auxiloson, Thomae); administer codeine against dry coughing. In the case of commencing or manifested pulmonary oedemia, systemic administration of cortisone (e.g. Solu Decortin 1000 or Fortecortin 100). Caution: A low symptom or symptom-free interval is possible.

If swallowed, gastric lavage after intubation, activated charcoal, saline laxative.

\cdot 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.

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5 Firefighting measures

- · Extinguishing media
- · Suitable extinguishing agents:

CO2, 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

Formation of toxic gases is possible during heating or in case of fire.

Above 79 degs.C explosive vapour/air mixtures may be formed.

- · Advice for firefighters
- · Protective equipment:

Wear fully protective suit.

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

Tightly closing chemical protection clothing with respirator equipment independent of the ambient air is required for protection against pyrotic phenol vapours.

· Additional information

Heating leads to pressure increase entailing danger of bursting and explosion. Immediately cool neighbouring packages and containers with sprayed water and, if possible, remove them out of the danger zone.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation

Keep ignition sources away - no smoking.

Particular danger of slipping on leaked/spilled product.

Keep away from ignition sources.

Wear protective equipment. Keep unprotected persons away.

Avoid formation of dust.

· Environmental precautions:

Do not allow to penetrate the ground/soil.

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).

Send for recovery or disposal in suitable receptacles.

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.

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Welding and other hot work operations in the work area must only be permitted under supervision.

Prevent formation of dust.

Restrict the quantity stored at the work place.

Avoid direct contact (skin contact, ingestion and/or inhalation of fume/mist/dust) with the product.

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

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Safety showers and eye wash facilities should be available at the work area.

Keep ignition sources away, do NOT smoke in the work area.

Welding and other hot work operations must only permitted only under supervision.

A trained first-aider must be availble whilst this product is being handled.

- Information about fire and explosion protection: Keep respiratory protective device available.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles:

Prevent any seepage into the ground.

Store only in the original receptacle.

Use only steel or stainless steel containers. Various plastics are attacked (e.g. soft PVC). Hose connections must be made of special rubber

· Information about storage in one common storage facility:

Store away from oxidizing agents.

Store away from foodstuffs.

Store away from metals.

Do not store together with textiles.

· Further information about storage conditions:

Store in a bunded area.

Keep container tightly sealed.

Store locked up with keys available only to trained and authorised persons.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- · Additional information about design of technical facilities: No further data; see item 7.
- · Control parameters
- · Ingredients with limit values that require monitoring at the workplace:

108-95-2 phenol

WEL Short-term value: 16 mg/m³, 4 ppm Long-term value: 7.8 mg/m³, 2 ppm

Sk

· DNELs

WORKERS

Acute / short-term exposure - local effects

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 16 mg/m³

Long-term exposure - systemic effects

Dermal DN(M)EL

- DNEL (Derived No Effect Level): 1.23 mg/kg bw/day

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 8 mg/m³

GENERAL POPULATION

Long-term exposure - systemic effects

Dermal DN(M)EL

- DNEL (Derived No Effect Level): 0.4 mg/kg bw/day

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 1.32 mg/m³

Oral DN(M)EL

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- DNEL (Derived No Effect Level): 0.4 mg/kg bw/day

· PNECs

PNEC aqua (freshwater): 0.0077 mg/L PNEC aqua (marine water): 0.00077 mg/L PNEC aqua (intermittent releases): 0.031 mg/L

PNEC STP: 2.1 mg/L

PNEC sediment (freshwater): 0.0915 mg/kg sediment dw PNEC sediment (marine water): 0.00915 mg/kg sediment dw

PNEC soil: 0.136 mg/kg soil dw

PNEC oral: No potential for bioaccumulation

· Additional information: The lists valid during the making were used as basis.

· Exposure controls

· Personal protective equipment:

Select PPE appropriate for the operations taking place taking into account the product properties.

· General protective and hygienic measures:

Pregnant women should strictly avoid inhalation or skin contact.

Do not eat, drink, smoke or sniff while working.

Storing food in the working area is prohibited.

Ensure that washing facilities are available at the work place.

A safe system of work must be formulated and followed to ensure that workers who may be pregnant or breastfeeding do not come into direct contact with the product.

A safe system of work must be formulated and followed to ensure safe working with this product. Relevant workers must receive suitable and sufficient training and supervision.

Ensure that eyewash stations and safety showers are close to the workstation location.

Take note of assigned Workplace Exposure Limits.

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.

· Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Breathing equipment: Use respirator filter unit with gas filter DIN EN 141 type A (colour code brown): Up to 0.5 Vol.% class 2, up to 1 Vol.% class 3, above 1% and in case of unclear conditions use respirator equipment which is independent of the ambient 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.

Wear chemically resistant protective gloves (tested according to DIN EN 374)

Material of gloves: Neoprene, PVC

Penetration time of glove material:

- 140 min. (Neoprene)
- 75 min. (PVC)

· 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.

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Safety data sheet according to 1907/2006/EC, Article 31

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· Eye protection:

Face protection



Tightly sealed goggles

Basket goggles (DIN EN 58211, code number 3) or face protection shield. If a splashing of the product is possible wear full face protection.

· Body protection:

Impervious protective clothing

PVC jacket, PVC trousers with bib, robust closed shoes.

Information on basic physical and of	chemical properties	
General Information		
Appearance: Form:	Powder	
Colour:	Light yellow	
Odour:	Characteristic	
Odour threshold:	0.04ppm	
pH-value:	Not applicable.	
Change in condition		
Melting point/Melting range:	40 °C	
Boiling point/Boiling range:	192 °C	
Flash point:	82 °C	
Flammability (solid, gaseous):	Product is not flammable.	
Ignition temperature:	595 °C	
Decomposition temperature:	Not determined.	
Self-igniting:	Not determined.	
Danger of explosion:	Product does not present an explosion hazard.	
Explosion limits:		
Lower:	1.3 Vol %	
Upper:	9.5 Vol %	
Vapour pressure at 20 °C:	0.2 hPa	
Density at 20 °C:	1.07 g/cm ³	
Relative density	Not determined.	
Vapour density	Not applicable.	
Evaporation rate	Not applicable.	
Solubility in / Miscibility with		
water at 20 °C:	70 g/l	
Partition coefficient (n-octanol/wat	er): 1.47 log POW	
Viscosity:		
Dynamic:	Not applicable.	
Kinematic:	Not applicable.	

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· Other information

No further relevant information available.

10 Stability and reactivity

- · Reactivity
- · Chemical stability
- · Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

Decomposes on heating. This produces toxic fumes.

· Possibility of hazardous reactions

Phenol is sensitive to oxidizing agents. This generates fire and explosion hazard.

Reacts with aldehydes, isocyanates, nitrites, nitrides and Friedel-Craft catalysts (sometimes violently or

It may react to form catechol, hydroquinone, etc. as a result of radical formation.

The solution in water is a weak acid.

- · Conditions to avoid Above 79 degs. C explosive vapour/air mixtures may be formed.
- · Incompatible materials:

Strong acids and oxidising agents

Strong bases.

Finely divided metals.

Aldehydes, isocyanates, nitrites, nitrides, Friedel-Craft catalysts, catechol, hydroquinone.

· Hazardous decomposition products: Carbon monoxide and carbon dioxide

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC50 values relevant for classification:

Oral	LD50	340 mg/kg (rat)
Dermal	LD50	660 mg/kg (rat)

- · Primary irritant effect:
- · on the skin: Caustic effect on skin and mucous membranes.
- · on the eye: Strong caustic effect.
- · **Sensitization:** No sensitizing effects known.
- · Subacute to chronic toxicity:

Effects of long-term or repeated exposure: Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the liver and kidneys.

· Additional toxicological information:

Depending on the degree of exposure, periodic medical examination is suggested.

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

ROUTES OF ENTRY: The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

Phenol exerts a marked corrosive action on any tissue of contact when ingested, inhaled or after skin exposure. Its cellular uptake is both rapid and passive due to its lipophilic character, and signs of systemic toxicity develop soon after exposure. Phenol's main target organs are the liver and kidney. It may also effect the respiratory and cardiovascular systems.

Inhalation risk: A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20 degs. C.

Effects of short-term exposure: The substance and the vapour are corrosive to the eyes, skin and respiratory tract. Inhalation of of the vapour may cause lung oedema. The substance may cause effects (Contd. on page 10)

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on the central nervous system, heart and kidneys. This may result in convulsions, coma, cardiac disorders, respiratory failure and collapse. Exposure could cause death. The effects may be delayed. Medical observation is indicated.

· CMR effects (carcinogenity, mutagenicity and toxicity for reproduction) Muta. 2

12 Ecological information

- · Toxicity
- · Aquatic toxicity:

EC50 3.1 mg/kg (daphnia)

- · Persistence and degradability No further relevant information available.
- · Behaviour in environmental systems:
- · Bioaccumulative potential Product is not expected to bioaccumulate.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

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

Contact waste processors for recycling information.

Must not be disposed together with household garbage. Do not allow product to reach sewage system. Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· European waste catalogue

Waste key numbers in accordance with the European Waste catalogue (EWC) are origin-referred defined. Since this product is used in several industries, no waste key can be provided by the supplier. The waste key number should be determined in arrangement with your waste disposal partner or the responsible authority.

- · Uncleaned packaging:
- · Recommendation:

Container remains hazardous when empty. Continue to observe all precuations.

Do not mix with other waste streams.

14 Transport information

- · UN-Number
- · ADR, IMDG, IATA UN1671
- · UN proper shipping name
- · ADR 1671 PHENOL, SOLID

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	(Contd. of pag
· IMDG, IATA	PHENOL, SOLID
· Transport hazard class(es)	
· ADR, IMDG, IATA	
&	
· Class	6.1 Toxic substances.
· Label	6.1
· Packing group · ADR, IMDG, IATA	П
· Environmental hazards: · Marine pollutant:	No
· Special precautions for user	Warning: Toxic substances.
· Danger code (Kemler):	60
· EMS Number:	F-A,S-A
· Transport in bulk according to Annex	II of
MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	500 g
· Transport category	2
· Tunnel restriction code	D/E
· UN "Model Regulation":	UN1671, PHENOL, SOLID, 6.1, II

15 Regulatory information

· 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.

GB