

Material Safety Data Sheet

According to 91/155 EEC(2001/58 EC)

Printing date: 27.12.2006

Reviewed on: 27.12.2006

1 Identification of substance:

· **Product details:**

· **Trade name:** Phenol

· **Application of the substance / the preparation**

Solvents
Phenolic resin

· **Supplier/Manufacturer:**

Penpet Petrochemical Trading GmbH
Merkur-Park
Sieker Landstrasse 126
22143 Hamburg
Germany
Tel: +49 40 675 799 0
Fax: +49 40 675 799 99 / 88

· **Information department:** see above

· **Emergency information:** National Poisons Information Centre Tel.: +44 (0)870 6006266

2 Composition/Data on components:

· **Chemical characterization:**

· **CAS No. Description:**
108-95-2 phenol, pure

· **Identification number(s):**

· **EINECS Number:** 203-632-7

· **EU Number:** 604-001-00-2

3 Hazards identification

· **Hazard description:**



Muta. Cat. 3
T Toxic
C Corrosive

· **Information pertaining to particular dangers for man and environment:**

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R 34 Causes burns.

R 48/20/21/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

R 68 Possible risk of irreversible effects.

· **Classification system:**

The classification was made according to the latest editions of the EU-lists, and expanded using company data and specialized literature.

4 First aid measures

· **General information:**

Immediately remove any clothing soiled by the product.

Take affected persons out into the fresh air.

First aid personnel should pay attention to their own safety.

Position and transport stably on side.

Symptoms of poisoning may occur even after several hours; therefore medical observation is suggested for at least 48 hours after the accident.

· **After inhalation:**

Remove victim from contaminated area. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Call a doctor.

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In case of unconsciousness, place patients on their side in a stable position for transportation.

· **After skin contact:**

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. If large areas of the skin have been wetted, immediately call a doctor to the site of the accident, otherwise in every case immediately bring the patients to a doctor.

· **After eye contact:**

Protect unharmed eye.

Rinse the eyes with open eyelids for 10 - 15 minutes with water.

If available use "polyethylene glycol for eye bath"

Immediate admittance to ophthalmic clinic.

· **After swallowing:**

Rinse mouth with water.

Drink plenty of water, but never give anything to an unconscious person.

Do not induce vomiting.

If vomiting occurs spontaneously:

Hold the head of the casualty low with the body in a prone position in order to avoid aspiration.

Call a doctor immediately.

· **Information for doctor:**

· **The following symptoms may occur:**

After skin contact:

Redness of the skin

Whitening of the skin surface

Anesthesia

Necrosis

After swallowing:

Caustic effect on mucous membranes

Gastric or intestinal disorders.

Nausea

Diarrhoea

See chapter 11

· **Danger:** Danger of pulmonary oedema.

· **Treatment:**

Symptomatic treatment

(decontamination, vital functions)

In cases of irritation to the lungs, initial treatment with Dexametason metered aerosol.

5 Fire fighting measures

· **Suitable extinguishing agents:**

Extinguishing powder

Carbon dioxide (CO₂)

Alcohol resistant foam

Water jet spray

· **For safety reasons unsuitable extinguishing agents:** Direct jet water

· **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

Do not inhale combustion 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

Collect contaminated fire fighting water separately. It must not enter the sewage system.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6 Accidental release measures

· **Person-related safety precautions:**

Ensure adequate ventilation

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Keep people at a distance and stay on the windward side.



Wear protective equipment. Keep unprotected persons away.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Do not smoke - keep ignition sources away

· **Measures for environmental protection:**

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

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to penetrate the ground/soil.

In case of seepage into the ground inform responsible authorities.

Keep contaminated washing water and dispose of appropriately.

· **Measures for cleaning/collecting:**

Allow to solidify. Pick up mechanically.

Absorb liquid components with liquid-binding material.

Clean the affected area carefully; suitable cleaners are:

Water

Dispose contaminated material as waste according to item 13.

Send for recovery or disposal in suitable receptacles.

7 Handling and storage

· **Handling**

· **Information for safe handling:**

Ensure good ventilation/exhaustion at the workplace.

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

Keep receptacles tightly sealed.

Restrict the quantity stored at the work place.

Carry out filling operations only at sites with extractors available.

Ensure that suitable extractors are available on processing machines

Avoid contact with eyes and skin.

Avoid inhalation of vapours.

· **Information about protection against explosions and fires:**

Fumes can combine with air to form an explosive mixture.



Keep ignition sources away - Do not smoke.

Protect against electrostatic charges

· **Storage**

· **Requirements to be met by storerooms and receptacles:**

Suitable material for receptacles and pipes: steel or stainless steel.

Store container tightly sealed at a cool and dry place with sufficient ventilation.

Store only in the original receptacle.

Prevent any seepage into the ground.

Provide floor trough without outlet.

· **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from feed.

For storage observe regulations for toxic materials.

· **Further information about storage conditions:**

Store under lock and key and with access restricted to technical experts or their assistants only.

Protect from humidity and water.

This product is hygroscopic.

Keep receptacle tightly sealed.

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 · **Storage class** 6.1A flammable toxic substances

8 Exposure controls and personal protection

 · **Additional information about design of technical systems:** No further data; see item 7.

 · **Components with limit values that require monitoring at the workplace:**
108-95-2 phenol

 TLV (European Union) Long-term value: 7.8 mg/m³, 2 ppm
 Skin

 · **Personal protective equipment**

 · **General protective and hygienic measures:**

- Do not inhale gases / fumes / aerosols.
- Avoid contact with the eyes and skin.
- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Store protective clothing separately.
- Use skin protection cream for skin protection.
- Be sure to clean skin thoroughly after work and before breaks.
- Do not eat, drink, smoke or sniff while working.
- Provide eye bath.
- If larger quantities are handled provide emergency showers.

 · **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:**

- Wear chemically resistant protective gloves (tested according to DIN EN 374)
- Check the permeability prior to each renewed use of the glove.
- The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- Preventive skin protection by use of skin-protecting agents is recommended.
- After use of gloves apply skin-cleaning agents and skin cosmetics.

 · **Material of gloves:**

- Following data are valid for 85 % aqueous solutions:
- The following materials are suitable for protective gloves
- (Permeation time \geq 8 hours):
- Butyl rubber - Butyl (0,5 mm)
- Fluoro carbon rubber - FKM (0,4 mm)

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.

 · **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.

 · **As protection from splashes gloves made of the following materials are suitable:** Chloroprene rubber, CR

 · **Not suitable are gloves made of the following materials:**

- Nitrile rubber, NBR
- Natural rubber, NR

 · **Eye protection:**

- Tightly sealed goggles.
- If a splashing of the product is possible wear full face protection.

 · **Body protection:**

- Solvent resistant protective clothing
- Impervious protective clothing
- According to hazard:
- Boots
- Apron
- Use protective suit.

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9 Physical and chemical properties:

· General Information

Form:	Liquid or solid (depending on ambient temperature) liquid (above 40.9 °C)
Colour:	Colourless Whitish
Odour:	Pungent Penetrating

· Change in condition:

Melting point/Melting range:	40.9°C
Boiling point/Boiling range:	181.9°C (DIN 51 751) at 1013 hPa

· Flash point: 81°C (DIN EN 22 71)

· Flammability (solid, gaseous) Product is not flammable.

· Ignition temperature: 595°C (DIN 51 794)

· Danger of explosion: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· Explosion limits:

Lower:	1.3 Vol %
Upper:	9 Vol %

· Vapour pressure at 20°C: 0.3 hPa
at 50 °C 3 hPa

· Density at 20°C: 1.0576 g/cm³

· Vapour density at 20°C: 3.24 g/cm³

**· Solubility in / Miscibility with
Water at 20°C:** 82 g/l

· pH-value at 20°C: 4-5

· Segregation coefficient (n-octanol/water): 1.46 log POW
(CPC)

10 Stability and reactivity

· Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

To avoid thermal decomposition do not overheat.

Conditions to be avoided: see chapter 7

· Materials to be avoided:

Ignitable mixtures can form with air.

Oxidants

Acids

Halogens

Aldehydes

Isocyanates

Hydrogen peroxide

· Dangerous reactions: No dangerous reactions known

· Dangerous products of decomposition:

In the case of fire or at high temperatures the formation of the following decomposition products is possible.

Irritant gases/vapours

Poisonous gases/vapours

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11 Toxicological information

- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**
 - 108-95-2 phenol**
 - Oral LD₅₀ 300 mg/kg (mus)
 - Dermal LD₅₀ 670 mg/kg (rat)
 - Inhalative LC₅₀/4 h 316 mg/l (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.
- **Other information (about experimental toxicology):**
- **Carcinogenic effects:** Muta.Cat. 3
- **Subacute to chronic toxicity:**
 - Repeated administration leads to changes of internal organs, the immune system, the central nervous system and the haematogram.
- **Experience with humans:**
 - Burning effect; is absorbed through the skin and leads to mortification of the skin. Absorption of large quantities may result in death by paralysis of the central nervous system. After initial pain, local anaesthesia appears and increases the danger of poisoning by skin absorption.
- **Additional toxicological information:**
 - Risk of skin adsorption.
 - Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information

- **Information about elimination (persistence and degradability):**
- **Other information:** The product is biodegradable.
- **Behaviour in environmental systems:**
- **Mobility and bioaccumulation potential:** Slight bioaccumulation possible.
- **Ecotoxicological effects:**
- **Aquatic toxicity:** Presently there are no ecotoxicological values available.
- **Other information:** Greatly diluted phenol solution can be degraded in sewage plant.
- **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.

Danger to drinking water if even small quantities leak into the ground.

13 Disposal considerations

- **Product:**
- **Recommendation:**
 - Can be reused after reprocessing.
 - Must be specially treated adhering to official regulations.
- **European waste catalogue:**
 - 07 01 08 other still bottoms and reaction residues
- **Uncleaned packagings:**
- **Recommendation:**
 - Packagings that cannot be cleansed are to be disposed of in the same manner as the product.
 - Disposal must be made according to official regulations.
 - Submit for special treatment, observing the local authority regulations, e.g. return of phenol slop water into the production process.

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14 Transport information

· **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 6.1 (T1) Toxic substances.
- **Danger code (Kemler):** 60
- **UN-Number:** 2312
- **Packaging group:** II
- **Label:** 6.1
- **Description of goods:** Phenol, molten
- **Remarks:** Limited quantities: none
 Phenol, solid is assigned to UN 1671 zu. ADR Code (T2), class 6.1, PG II. Special Provision 279
 Special provision 279:
 The substance is assigned to this classification or packing group based on human experience rather than the strict application criteria set out in the ADR.
 Limited Quantity: 1 kg inner packing, 4 kg packaging unit

· **Maritime transport IMDG:**



- **IMDG Class:** 6.1
- **UN Number:** 2312
- **Label:** 6.1
- **Packaging group:** II
- **EMS Number:** F-A,S-A
- **Proper shipping name:** PHENOL, MOLTEN
- **Remarks:** Phenol, solid is assigned to UN 1671, class 6.1 PG II; Special Provision 279, EmS: F-A, S-A
 Special provision 279:
 The substance is assigned to this classification or packing group based on human experience rather than the strict application criteria set out in this Code.

· **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 6.1
- **UN/ID Number:** 2312
- **Label:** 6.1
- **Packaging group:** II
- **Proper shipping name:** PHENOL, MOLTEN
- **Remarks:** Forbidden for passenger and cargo aircraft.
 Phenol solid is assigned to UN 1671, class 6.1, PG II, Special Provision A 113. Packing instructions as follows:
 Special provision A 113: The substance is assigned to this classification or packing group based on human experience rather than the strict application criteria set out in these Regulations.
 Packing Instructions:
 For Limited Quantities: Y613 (Max Net Qty/Pkg: 1,0 kg)
 Passenger and Cargo Aircraft: 823 (Max Net Qty/Pkg: 25 kg)
 Cargo Aircraft only: 615(Max Net Qty/Pkg: 100 kg)

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15 Regulations

- **Markings according to EC guidelines:**

EC-labelling

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

- **Code letter and hazard designation of product:**



Muta. Cat. 3

T Toxic

C Corrosive

- **Risk phrases:**

23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

34 Causes burns.

48/20/21/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

68 Possible risk of irreversible effects.

- **Safety phrases:**

1/2 Keep locked up and out of the reach of children.

24/25 Avoid contact with skin and eyes.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

28 After contact with skin, wash immediately with plenty of soap and water, and also with polyethylene-glycol 400, if possible.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

- **National regulations**

- **Information about limitation of use:**

Restrictions on juvenile employment must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

- **Water hazard class:** Water hazard class 2 (Assessment by list): hazardous for water.

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.

- **Replaces version dated:** 06.10.2005

- **Department issuing MSDS:**

KFT-Chemieservice Marienstr. 3 D-64347 Griesheim

Postfach 1451 D-64345 Griesheim

Tel.: +49-6155-823241 Fax: +49-6155-823246

- **Contact:** Angelika Torges

- **Sources:** RTECS database

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