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MATERIAL SAFETY DATA SHEET

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Revised 6/18/02  
Replaces 6/12/02  
Printed 9/09/02PHENOL  
INVITROGEN CORPORATION  
MSDS ID: 15509

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**1. PRODUCT AND COMPANY INFORMATION**

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INVITROGEN CORPORATION  
1600 FARADAY AVE.  
CARLSBAD, CA 92008  
760/603-7200GIBCO PRODUCTS  
INVITROGEN CORPORATION  
3175 STALEY ROAD P.O. BOX 68  
GRAND ISLAND, NY 14072  
716/774-6700INVITROGEN CORPORATION  
3 FOUNTAIN DR.  
INCHINNAN BUSINESS PARK  
PAISLEY, PA4 9RF  
SCOTLAND  
44-141 814-6100INVITROGEN CORPORATION  
P.O. BOX 12-502  
PENROSE  
AUCKLAND 1135  
NEW ZEALAND  
64-9-579-3024INVITROGEN CORPORATION  
2270 INDUSTRIAL ST.  
BURLINGTON, ONT  
CANADA L7P 1A1  
905/335-2255EMERGENCY NUMBER (SPILLS, EXPOSURES): 301/431-8585 (24 HOUR)  
800/451-8346 (24 HOUR)  
NON-EMERGENCY INFORMATION: 800/955-6288Product Name:  
PHENOLNOTE: If this product is a kit or is supplied with more than one material,  
please refer to the MSDS for each component for hazard information.Product Use:  
These products are for laboratory research use only and are not intended for  
human or animal diagnostics, therapeutic, or other clinical uses.Synonyms:  
Not available.

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**2. COMPOSITION, INFORMATION ON INGREDIENTS**

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The following list shows components of this product classified as hazardous  
based on physical properties and health effects:

Component	CAS No.	Percent
PHENOL	108-95-2	60 - 100

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**3. HAZARDS IDENTIFICATION**

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**\*\*\* EMERGENCY OVERVIEW \*\*\***

Danger!

Corrosive to tissue.

Highly toxic if swallowed. May cause organ failure or death even at a low dose.

Highly toxic if absorbed.

Highly toxic by inhalation.

\*\*

## Potential Health Effects:

Eye:

Corrosive to eye tissue. Can cause severe irritation, tearing, and burns that can quickly lead to permanent injury including blindness.

Skin:

Corrosive to skin tissue. Can cause chemical burns.

This product may discolor the skin.

Upon prolonged or repeated exposure, highly toxic if absorbed through the skin. Likely to cause significant systemic damage and may be fatal.

Inhalation:

Can cause severe respiratory irritation, dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.

Highly toxic! Can cause systemic damage (see "Target Organs" ).

Respiratory failure is possible at high doses.

Ingestion:

Corrosive to tissue. Can cause severe and permanent damage to mouth, throat, stomach. Aspiration may lead to lung damage.

Ingestion of this product may result in central nervous system effects including headache, sleepiness, dizziness, slurred speech and blurred vision. Overexposure may cause kidney damage. May cause liver disorder (e.g., edema, proteinuria) and damage.

Highly toxic if swallowed. May cause target organ failure and/or death even at a low dose.

Chronic:

No data on cancer.

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**4. FIRST AID MEASURES**

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Eye:

Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.

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**4. FIRST AID MEASURES (CONT.)**

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## Skin:

Remove phenol with undiluted polyethylene glycol 300 to 400 or isopropyl alcohol prior to washing, if readily available. Wash exposed areas twice with large quantities of water. A physician may be needed to examine the exposed area if irritation or pain persists after the area is washed.

## Inhalation:

Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.

## Ingestion:

Corrosive. Do not induce vomiting! Drink one glass of water followed by milk if available. Seek medical attention immediately and give the medical care provider with this MSDS.

## Note To Physician:

## Phenol:

No known specific antidote. For eye or skin exposures: Repeatedly swab area with decontaminating agent(s): Polyethylene glycol 300 (PEG 300). In absence of specified decontaminating agent(s):

Wash with plenty of soap and water. Areas of skin contact smaller than that given below may cause a minor health hazard although individual sensitivity may vary. 10cm<sup>2</sup>. For systemic exposures: Systemic doses smaller than that given below may cause a minor health hazard although individual sensitivity may vary.

1gm. Give castor oil or another vegetable oil. Give charcoal slurry, if conscious. Treat symptomatically. Maintain ion balanced hydration. Observe for 24 hours.

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**5. FIRE FIGHTING MEASURES**

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Flashpoint Deg C:

79

Upper Flammable Limit %:

Not available.

Lower Flammable Limit %:

Not available.

Autoignition Temperature Deg C:

Not available.

## Extinguishing Media:

Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.  
Use water spray/fog for cooling.

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**5. FIRE FIGHTING MEASURES (CONT.)**

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**Firefighting Techniques/Equipment:**

Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products.

**Hazardous Combustion Products:**

Includes carbon dioxide, carbon monoxide, dense smoke.

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**6. ACCIDENTAL RELEASE MEASURES**

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Accidental releases may be subject to special reporting requirements and other regulatory mandates. Refer to Section 8 for personal protection equipment recommendations.

**Spill Cleanup:**

Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section VIII of this MSDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits. Ventilate the contaminated area. Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section VIII at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

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**7. HANDLING AND STORAGE**

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Storage of some materials is regulated by federal, state, and/or local laws.

**Storage Pressure:**

Ambient

**Handling Procedures:**

Highly toxic or corrosive material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area.  
Highly toxic or corrosive material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area.

**Storage Procedures:**

Store in a cool dry ventilated location. Isolate from incompatible

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**7. HANDLING AND STORAGE (CONT.)**

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materials and conditions. Keep container(s) closed.  
Suitable for most general chemical storage areas.

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**8. EXPOSURE CONTROLS, PERSONAL PROTECTION**

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## Exposure Limits:

Component	OSHA PEL (ppm)	AGCIH TWA (ppm)
PHENOL	5 PPM	5 PPM SKIN

## Engineering Controls:

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

## Personal Protective Equipment:

## Eye:

An eye wash station must be available where this product is used.  
Wear chemical goggles.

## Skin:

Prevent contact with this product. Wear protective gloves, apron, face and further skin protection depending upon condition of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment thoroughly after each use. Do not wear surgical style latex gloves. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.  
Have a safety shower available.

## Respiratory:

NIOSH approved full-face respirator as a minimum.  
NIOSH approved air purifying respirator with organic vapor cartridge.  
Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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Appearance/physical state: Colorless-to-white crystalline solid. May turn pink if it is overexposed to light.

Odor: Sweet, tarry, pungent.

Boiling Point (C): 360 F 182.2 C

Melting Point (C): 106 F 41.11 C

Solubility in water: 8.4% (20C)

pH: 4.7 - 5.5

Vapor Pressure: 0.35 @25C

Vapor Density: 3.24

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**9. PHYSICAL AND CHEMICAL PROPERTIES (CONT.)**

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Specific Gravity/Density: 1.071  
Octanol/water Partition Coeff: Not established.  
Volatiles: 100%  
Evaporation Rate: <0.03 (BuAc=1)  
Viscosity: 12.7 @65F

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**10. STABILITY AND REACTIVITY**

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Stability:  
Stable under normal conditions.Conditions to Avoid:  
Strong oxidizing agents. Temperatures above flash point in combination with sparks, open flames, or other sources of ignition. Strong acids.  
Isocyanates.Hazardous Decomposition Products:  
Carbon dioxide. Carbon monoxide. Toxic gases.Hazardous Polymerization:  
Hazardous polymerization will not occur.

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**11. TOXICOLOGICAL INFORMATION**

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Acute Toxicity:

Dermal/Skin:  
Phenol: 630 MG/KGInhalation/Respiratory:  
Phenol: 316 MG/CU MOral/Ingestion:  
Phenol: 317 MG/KG

Target Organs: Kidneys. Liver. Nervous System.

Carcinogenicity:

NTP:  
Not tested.IARC:  
Not listed.

OSHA:

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**11. TOXICOLOGICAL INFORMATION (CONT.)**

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Not regulated.

Other Toxicological Information

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**12. Ecological Information**

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Ecotoxicological Information: No ecological information available.

Environmental Fate (Degradation, Transformation, and Persistence):  
Bioconcentration is not expected to occur.  
Biodegrades at a moderate rate.

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**13. DISPOSAL CONSIDERATIONS**

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Regulatory Information:  
Not applicable.Disposal Method:  
Clean up and dispose of waste in accordance with all federal, state, and local environmental regulations.  
Dispose of by incineration following Federal, State, Local, or Provincial regulations.

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**14. TRANSPORT INFORMATION**

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Proper Shipping Name: Phenol solid  
Hazard Class: 6.1  
Subsidiary Hazards:  
ID Number: UN1671  
Packing Group: II  
Label Required: Toxic

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**15. REGULATORY INFORMATION**

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UNITED STATES:

TSCA:  
This product is solely for research and development purposes only and may not be used, processed or distributed for a commercial purpose. It may only be handled by technically qualified individuals.Prop 65 Listed Chemicals: PROP 65 PERCENT  
No Prop 65 Chemicals.

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**15. REGULATORY INFORMATION (CONT.)**

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313 LISTED CHEMICALS: PHENOL

CANADA:

DSL/NDSL:  
Not determined.COMPONENT WHMIS Classification  
PHENOL Not classified as hazardous.

EUROPEAN UNION:

PRODUCT RISK PHRASES: None assigned.  
PRODUCT SAFETY PHRASES: None assigned.  
PRODUCT CLASSIFICATION: TComponent EINECS  
PHENOL Number  
203-632-7

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**16. OTHER INFORMATION**

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HMIS Rating 0-4:

FIRE: Not determined.  
HEALTH: Not determined.  
REACTIVITY: Not determined.

## Abbreviations

N/A - Data is not applicable or not available  
SARA - Superfund and Reauthorization Act  
HMIS - Hazard Material Information System  
WHMIS - Workplace Hazard Materials Information System  
NTP - National Toxicology Program  
OSHA - Occupational Health and Safety Administration  
IARC - International Agency for Research on Cancer  
PROP 65 - California Safe Drinking Water and  
Toxic Enforcement Act of 1986  
EINECS - European Inventory of Existing Commercial  
Chemical SubstancesThe above information was acquired by diligent search and/or investigation  
and the recommendations are based on prudent application of professional



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16. OTHER INFORMATION (CONT.)

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judgment. The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since Invitrogen Corporation cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. THE INFORMATION IN THIS MSDS DOES NOT CONSTITUTE A WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.