

**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product Identifier**

Chemical Name 4-Chlorophenol-d4

Catalogue # C375042

**1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against**

Product Uses To be used only for scientific research and development. Not for use in humans or animals.

**1.3 Details of the Supplier of the Safety Data Sheet**

Company Toronto Research Chemicals

2 Brisbane Road

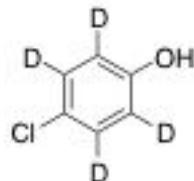
Toronto, ON M3J 2J8

CANADA

Telephone +14166659696

FAX +14166654439

Email orders.trc@lqcgrou.com

**1.4 Emergency Telephone Number**

Emergency# +1(416) 665-9696 between 0800-1700 (GMT-5)

**2. HAZARDS IDENTIFICATION****2.1/2.2 Classification of the Substance or Mixture and Label Elements****GHS Hazards Classification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)**

Acute Toxicity, Oral (Category 3)

Acute Toxicity, Inhalation (Category 3)

Acute Toxicity, Dermal (Category 3)

Hazardous to the Aquatic Environment, Acute Hazard (Category 3)

**GHS Hazards Identification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)**

Signal Word Danger

**GHS Hazard Statements**

H301 Toxic if swallowed.

H331 Toxic if inhaled.

H311 Toxic in contact with skin.

H402 Harmful to aquatic life.

**GHS Precautionary Statements**

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

P301/P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P304/P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray

P302/P352 IF ON SKIN: Wash with plenty of soap and water

P405 Store locked up.

**2.3 Unclassified Hazards/Hazards Not Otherwise Classified**

Stench.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Molecular Formula: C<sub>6</sub>HD<sub>4</sub>CIO

Molecular Weight: 132.58

CAS Registry #: 285132-91-4

EC#:

#### Synonyms

4-Hydroxychlorobenzene-d4; Applied 3-78-d4; NSC 2877-d4; p-Chlorophenyl acid-d4; p-Chlorophenol-d4

#### 3.2 Mixtures

Not a mixture.

### 4. FIRST AID MEASURES

#### 4.1 Description of First Aid Measures

##### General Advice

If medical attention is required, show this safety data sheet to the doctor.

##### If Inhaled

If inhaled, move casualty to fresh air. If not breathing, give artificial respiration and consult a physician.

##### In Case of Skin Contact

Remove contaminated clothing and shoes. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

##### In Case of Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

##### If Swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Do NOT induce vomiting unless advised to do so by a physician or Poison Control Center. Seek medical attention.

Self-protection of the first aider

Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

#### 4.2 Most Important Symptoms and Effects, Both Acute and Delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or section 11.

#### 4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

No data available.

### 5. FIREFIGHTING MEASURES

#### 5.1 Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### 5.2 Special Hazards Arising from the Substance or Mixture

Carbon oxides, Hydrogen chloride

#### 5.3 Advice for Firefighters

Wear self contained breathing apparatus for fire fighting if necessary. Use personal protection equipment.

#### 5.4 Further Information

No data available.

### 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. Avoid contact with skin, eyes or clothing.

#### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

#### Method and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 7. HANDLING AND STORAGE

## 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

## 7.2 Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

Storage conditions: 4°C, Hygroscopic

## 7.3 Specific End Uses

For scientific research and development only. Not for use in humans or animals.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## 8.1 Control Parameters

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Phenol	108-95-2	TWA	5.000000 ppm 19.000000 mg/m <sup>3</sup>	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks		Substance may be readily absorbed through intact skin		
		TWA	5.000000 ppm	Canada. British Columbia OEL
			Contributes significantly to the overall exposure by the skin route.	
		TWAEV	5.000000 ppm 19.000000 mg/m <sup>3</sup>	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		Skin (percutaneous)		
		TWA	5.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)

## 8.2 Exposure Controls

### Appropriate Engineering Controls

A laboratory fumehood or other appropriate form of local exhaust ventilation should be used to avoid exposure.

### Personal Protective Equipment

All recommendations below are advisory in nature and a risk assessment should be performed by the employer/end user prior to use of this product. The type of protective equipment must be selected based on the amount and concentration of the dangerous material being used in the workplace.

### Eye/Face Protection

Safety goggles or face shield. All equipment should have been tested and approved under appropriate standards, such as NIOSH (US), CSA (Canada), or EN 166 (EU).

### Skin Protection

Gloves should be used when handling this material. Gloves are to be inspected prior to use. Contaminated gloves are to be removed using proper glove removal technique so that the outer surface of the glove does not contact bare skin. Dispose of contaminated gloves after use in compliance with good laboratory practices and local requirements.

Gloves used for incidental exposures (splash protection) should be designated as "chemical resistant" by EU standard EN 374 with the resistance codes corresponding to the anticipated use of the material. Unrated gloves are not recommended.

Suggested gloves: AnsellPro Sol-Vex nitrile gloves style 37-175, 15 mil thickness.

Penetration time has not been determined.

Gloves used for prolonged direct exposure (immersion) should be designated "chemical resistant" as per EN 734 with the resistance codes corresponding to the anticipated use of the material.

Suggested gloves: AnsellPro Viton/Butyl gloves style 38-612, 4/8 mil thickness.

Penetration time has not been determined.

These recommendations may not apply if the material is mixed with any other chemical, or dissolved into a solution. A risk assessment must be performed to ensure the gloves will still offer acceptable protection.

### Body Protection

Fire resistant (Nomex) lab coat or coveralls.

### Respiratory Protection

Recommended respirators are NIOSH-approved N100 or CEN-approved FFP3 particulate respirators. These are to be only used as a backup to local exhaust ventilation or other engineering controls. If the respirator is the only means of protection, a full-face

supplied air respirator must be used.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on Basic Physical and Chemical Properties

<b>A) Appearance</b>	<b>B) Odour</b>
Colourless to Off-White Liquid to Low-Melting Solid	No data available
<b>C) Odour Threshold</b>	<b>D) pH</b>
No data available	No data available
<b>E) Melting Point/Freezing Point</b>	<b>F) Initial Boiling Point/Boiling Range</b>
No Data Available	No data available
<b>G) Flash point</b>	<b>H) Evaporation Rate</b>
121 °C (250 °F) - closed cup	No data available
<b>I) Flammability (Solid/Gas)</b>	<b>J) Upper/Lower Flammability/Explosive Limits</b>
No data available	No data available
<b>K) Vapour Pressure</b>	<b>L) Vapour Density</b>
No data available	No data available
<b>M) Relative Density</b>	<b>N) Solubility</b>
No data available	DMSO (Sparingly), Methanol (Slightly)
<b>O) Partition Coefficient: n-octanol/water</b>	<b>P) Auto-Ignition Temperature</b>
No data available	No data available
<b>Q) Decomposition Temperature</b>	<b>R) Viscosity</b>
No data available	No data available
<b>S) Explosive Properties</b>	<b>T) Oxidizing Properties</b>
No data available	No data available

### 9.2 Other Information

no data available

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available.

### 10.2 Chemical Stability

Stable under recommended storage conditions.

### 10.3 Possibility of Hazardous Reactions

No data available.

### 10.4 Conditions to Avoid

No data available.

### 10.5 Incompatible Materials

Acid chlorides, Acid anhydrides, Oxidizing agents.

### 10.6 Hazardous Decomposition Products

In the event of fire: See section 5. Other decomposition products: No data available.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on Toxicological Effects

#### A) Acute Toxicity

Oral LD50: Rat - 670 mg/kg

Dermal LD50: Rat - 1,500 mg/kg

Inhalation LC50: Rat - 11 mg/m<sup>3</sup>

#### B) Skin Corrosion/Irritation

Moderate skin irritant.

#### C) Serious Eye Damage/Irritation

Moderate eye irritant.

#### D) Respiratory or Skin Sensitization

No data available

#### E) Germ Cell Mutagenicity

No data available

#### F) Carcinogenicity

Limited evidence of a carcinogenic effect.

This compound has been designated as Group 3: Not classifiable as to its carcinogenicity in humans.

#### G) Reproductive Toxicity/Teratogenicity

No data available

## **H) Single Target Organ Toxicity - Single Exposure**

No data available

## **I) Single Target Organ Toxicity - Repeated Exposure**

No data available

## **J) Aspiration Hazard**

No data available

## **K) Potential Health Effects and Routes of Exposure**

### **Inhalation**

Toxic if inhaled. May cause respiratory tract irritation.

### **Ingestion**

Toxic if swallowed.

### **Skin**

Toxic if absorbed through skin. May cause skin irritation.

### **Eyes**

May cause eye irritation.

## **L) Signs and Symptoms of Exposure**

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or section 11.

To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated.

## **M) Additional Information**

RTECS: SK2800000

## **12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

#### **Toxicity to fish:**

mortality NOEC - Cyprinodon variegatus (sheepshead minnow) - 3.2 mg/l - 96.0 h

LC50 - Lepomis macrochirus (Bluegill) - 3.1 - 4.8 mg/l - 96.0 h

#### **Toxicity to daphnia and other aquatic invertebrates:**

mortality NOEC - Daphnia (water flea) - 0.2 mg/l - 8 d

EC50 - Daphnia magna (Water flea) - 2.8 - 8.6 mg/l - 24 h

### **12.2 Persistance and Degradability**

No data available.

### **12.3 Bioaccumulative Potential**

Cyprinus carpio (Carp) - 42 d

Bioconcentration factor (BCF): 11 - 52

### **12.4 Mobility in Soil**

No data available.

### **12.5 Results of PBT and vPvB Assessment**

No data available.

### **12.6 Other Adverse Effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

## **13. DISPOSAL CONSIDERATIONS**

### **13.1 Waste Treatment Methods**

#### **A) Product**

Product may be burned in an incinerator equipped with afterburner and scrubber. Excess and expired materials are to be offered to a licensed hazardous material disposal company. Ensure that all Federal and Local regulations regarding the disposal and destruction of this material are followed.

#### **B) Contaminated Packaging**

Dispose of as above.

#### **C) Other Considerations**

Product is not to be disposed of in sanitary sewers, storm sewers, or landfills.

## **14. TRANSPORT INFORMATION**

### **14.1 UN Number**

DOT (US): UN2020

IATA: UN2020

IMDG: UN2020

ADR/RID: UN2020

### **14.2 UN Proper Shipping Name**

DOT (US)/IATA:

Chlorophenols, solid

IMDG/ARD/RID:

CHLOROPHENOLS, SOLID

**14.3 Transport Hazard Class(es)**

DOT (US): 6.1

IATA: 6.1

IMDG: 6.1

ADR/RID: 6.1

**14.4 Packing Group**

DOT (US): III

IATA: III

IMDG: III

ADR/RID: III

**14.5 Environmental Hazards**

DOT (US): None

IATA: None

IMDG: None

ADR/RID: None

**14.6 Special Precautions for User**

None

## 15. REGULATORY INFORMATION

This safety data sheet complies with the requirements of WHMIS (Canada), OSHA 1910.1200 (US), and EU Regulation EC No. 1907/2006 (European Union).

**15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture**

**A) Canada**

**DSL/NDSL Status:** This product or a component of this product is registered on the Canadian DSL/NDSL.

**B) United States**

**TSCA Status:** This product or a component is listed on the US EPA TSCA.

**C) European Union**

**ECHA Status:** This product or a component is registered with the EU ECHA.

**15.2 Chemical Safety Assessment**

No data available

## 16. OTHER INFORMATION

**16.1 Revision History**

Original Publication Date: 3/1/2016

**16.2 List of Abbreviations**

LD50	Median lethal dose of a substance required to kill 50% of a test population.
LC50	Medial lethal concentration of a substance required to kill 50% of a test population.
LDLo	Lowest known lethal dose
TDLo	Lowest known toxic dose
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances

**16.3 Further Information**

Copyright 2015. Toronto Research Chemicals Inc. Copies may be made for internal use only. The above information is believed to be correct to the best of our knowledge, but is to be only used as a guide. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Please take all due care when handling this product.