Harrell Industries, Inc.

SAFETY DATA SHEET

Issue Date 16-Apr-2015 **Revision Date** 23-Jun-2015 **Version** 2

1. IDENTIFICATION

Product identifier

Product Name Orthochlorophenol

Other means of identification

Product Code 4700
UN/ID no. UN2021
Synonyms o-chlorophenol; 2-chloro-1 hydrobenzene; 2-chlorophenol

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory chemicals.
Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address
Harrell Industries, Inc.
2495 Commerce Drive
Rock Hill, SC 29730

www.harrellindustries.com

Emergency telephone number

Company Phone Number 803-327-6335
Fax Number 803-327-7808
24 Hour Emergency Phone Number 800 633-8253 (PERS)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Flammable liquids	Category 4

Label elements

Emergency Overview

Warning

Hazard statements
Harmful if swallowed
Harmful in contact with skin
Harmful if inhaled
Combustible liquid

Danger! This product is toxic and corrosive!

Appearance Light amber liquid (phenol like) **Physical state** liquid **Odor** Phenol-like

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking

Precautionary Statements - Response
Specific treatment (see .? on this label)
Corrosive! Will cause phenol-like burns and irreversible eye damage.
Corrosive! Will cause phenol-like burns. Toxic by skin absorption.
Causes irritation to the respiratory tract. Can cause headache, nausea, swelling around the eyes, runny nose, loss of appetite and weight loss. Higher concentrations may cause drowsiness, central nervous system depression, kidney and liver damage, unconsciousness, and death.
Toxic! A liver and kidney poison. May cause systematic poisoning with symptoms parallel to inhalation. May be an aspiration hazard if swallowed.
In case of fire: Use CO_2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Not applicable

Other Information
Toxic to aquatic life with long lasting effects

Unknown acute toxicity 1% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance
Synonyms o-chlorophenol; 2-chloro-1 hydrobenzene; 2-chlorophenol.
Formula ClC_6H_4OH

Chemical Name	CAS No.	Weight-%
ortho-Chlorophenol	95-57-8	>99

4. FIRST AID MEASURES

Description of first aid measures

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower

eyelids occasionally. Get medical attention.

Skin contact Immediately wash skin with soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation persists. You may also rinse with isopropyl alcohol. Treat as for phenol burns. The following PVP treatment has been successfully used to minimize the effects of skin contact and to reduce absorption through the skin of phenol-like materials. PVP treatment: Either apply directly to affected skin area a water paste of PVP or neutralizing solution of 40 g PVP, 1/2 gallon water, and 1/2 gallon isopropyl alcohol.

Inhalation Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion If the person is conscious give a slurry of activated charcoal in water. (Or, administer milk, egg whites, or olive oil as demulcents.) DO NOT INDICE VOMITING! Never give anything by mouth to an unconscious person. Keep person in a lying position. Apply external heat to keep person warm. Keep person quiet. Call a physician immediately. A gastric lavage should be performed with water by a physician. Do not use alcohol for a gastric lavage. The use of a stomach tube may be contradicted if corrosion is evident.

Most important symptoms and effects, both acute and delayed

Symptoms Chronic: Central nervous system problems such as motor weakness, increased respiration, tremors, and convulsions.

Indication of any immediate medical attention and special treatment needed

Note to physicians This material is highly toxic by inhalation and toxic by skin absorption and ingestion. It produces central nervous system problems that manifest themselves by such symptoms as motor weakness, increased respiration, tremors, and convulsions. It is also a strong irritant and can cause phenol-like burns.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. In case of fire, use water fog, dry chemical, CO2 or "alcohol resistant" foam.

Unsuitable extinguishing media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
Combustible liquid! Corrosive to eyes, skin and metal. Toxic fumes emitted on combustion.

Hazardous combustion products Hydrogen chloride. Phenols. Carbon oxides.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Cool containers exposed to fire with water.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal equipment. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material(e.g., vermiculite, dry sand, earth) and place in a chemical waste container such as a steel drum. Do not use combustible materials, such as saw dust. Do not flush to

sewer! Spilled residues may be cleaned with a 2-5 % solution of soda ash.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material(e.g., vermiculite, dry sand, earth) and place in a chemical waste container such as a steel drum. Do not use combustible materials, such as saw dust. Do not flush to sewer! Spilled residues may be cleaned with a 2-5 % solution of soda ash.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Product should be handled in closed building or tank equipped with an alkali scrubber. Wash hands thoroughly after handling. Do not rub eyes with soiled hands. DO NOT EAT OR DRINK OR SMOKE IN THE WORK AREA. Avoid plastic materials like polystyrene.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep out of direct sunlight, Do not store with reactive or combustible materials. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquids); observe all warnings and precautions listed for the product. Keep containers tightly closed in a cool, well-ventilated place.

Incompatible materials Strong oxidizers, strong bases, acid chlorides, and acid anhydrides.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Use chemical safety goggles and/or full face shield. Maintain eye wash fountain and quick-drench facilities in work area.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid		
Appearance	Light amber liquid (phenol like)	**Odor**	Phenol-like
Color	Light amber	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH	No information available	
Melting point / freezing point	8 °C / 48 °F	
Boiling point / boiling range	175-176 °C / 347-349 °F	
Flash point	63 °C / 147 °F	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	1.3 hPpa (1.0 mmHG) at 121C (249.8 F)	
Vapor density	1.241g/cm3 at 25C (77F)	
Relative density	1.257	
Water solubility	slightly soluble	
Solubility in other solvents	No information available	
Partition coefficient	log Pow: 2.32	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point	No information available
Molecular weight	128.56
VOC Content (%)	No information available
Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under ordinary conditions of use and storage.
Possibility of Hazardous Reactions
None under normal processing.
Hazardous polymerization Will not occur.

Conditions to avoid
Heat, open flames, ignition sources and incompatibles.
Incompatible materials
Strong oxidizers, strong bases, acid chlorides, and acid anhydrides.
Hazardous Decomposition Products
May emit oxides or carbon and hydrogen chloride gas when heated to decomposition. May produce carbon monoxide, carbon dioxide, and hydrogen chloride when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information No data available

Inhalation Causes irritation to the respiratory tract. Can cause headache, nausea, swelling around the eyes, runny nose, loss of appetite and weight loss. Higher concentrations may cause drowsiness, central nervous system depression, kidney and liver damage, unconsciousness, and death.

Eye contact Corrosive! Will cause phenol-like burns and irreversible eye damage.

Skin contact Corrosive! Will cause phenol-like burns to the skin. Toxic by skin absorption.

Ingestion Toxic! A liver and kidney poison. May cause systematic poisoning with symptoms paralleling inhalation. May be an aspiration hazard if swallowed.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
ortho-Chlorophenol 95-57-8	= 670 mg/kg (Rat)	-	= 2.05 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization
Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity
STOT - single exposure
STOT - repeated exposure
Target Organ Effects Central nervous system, liver, kidney.
Aspiration hazard

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

12. ECOLOGICAL INFORMATION

Toxic to aquatic life.

Ecotoxicity

Very toxic to aquatic life with long lasting effects

1% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
ortho-Chlorophenol 95-57-8	70: 96 h Selenastrum capricornutum mg/L EC50	8.64 - 10.2: 96 h Pimephales promelas mg/L LC50 flow-through 8.86 - 14.66: 96 h Pimephales promelas mg/L LC50 static 5.7 - 8.0: 96 h Lepomis macrochirus mg/L LC50 static 13.8: 96 h Poecilia reticulata mg/L LC50 semi-static 17.68 - 23.64: 96 h Poecilia reticulata mg/L LC50 static 7.6 - 15.4: 96 h Oryzias latipes mg/L LC50 static	7.4: 48 h Daphnia magna mg/L EC50 3.31 - 4.91: 48 h Daphnia magna mg/L EC50 Static

Persistence and degradability

Bioaccumulation

Chemical Name	Partition coefficient
ortho-Chlorophenol 95-57-8	2.15

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging Do not reuse container.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
ortho-Chlorophenol 95-57-8	-	Included in waste streams: F039, K001	-	U048

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
ortho-Chlorophenol 95-57-8	Category II - Semi-volatiles	-	-	-

14. TRANSPORT INFORMATION

DOT Regulated
- **UN/ID no.** UN2021
- **Proper shipping name** Chlorophenols, Liquid
- **Hazard Class** 6.1
- **Packing Group** III
- **Reportable Quantity (RQ)** 100 lbs (45.4 kg)
- **Marine pollutant** Toxic to aquatic life.

TDG Regulated
- **UN/ID no.** UN2021
- **Proper shipping name** Chlorophenols, liquid
- **Hazard Class** 6.1
- **Packing Group** III
- **Marine pollutant** This product contains a chemical which is listed as a marine pollutant according to TDG.

MEX Regulated
- **UN/ID no.** UN2021
- **Proper shipping name** Chlorophenols, Liquid
- **Hazard Class** 6.1
- **Packing Group** III

ICAO (air) Regulated
- **UN/ID no.** UN2021
- **Proper shipping name** Chlorophenols, liquid
- **Hazard Class** 6.1
- **Packing Group** III

IATA Regulated
- **UN/ID no.** UN2021
- **Proper shipping name** Chlorophenols, Liquid
- **Hazard Class** 6.1
- **Packing Group** III

IMDG Regulated
- **UN/ID no.** UN2021
- **Proper shipping name** Chlorophenols, Liquid

Hazard Class	6.1
Packing Group	III
Marine pollutant	This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO
Description	2.5-200 L
RID	Regulated
UN/ID no.	UN2021
Proper shipping name	Chlorophenols, Liquid
Hazard Class	6.1
Packing Group	III
ADR	Regulated
UN/ID no.	UN2021
Proper shipping name	Chlorophenols, Liquid
Hazard Class	6.1
Packing Group	III
ADN	Regulated
UN Number	UN2021
Proper shipping name	Chlorophenols, Liquid
Hazard Class	6.1
Packing Group	III

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Chemical Name	SARA 313 - Threshold Values %
ortho-Chlorophenol - 95-57-8	0.1

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
ortho-Chlorophenol 95-57-8	-	X	X	-

CERCLA

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
ortho-Chlorophenol 95-57-8	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ

US State Regulations

California Proposition 65

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
ortho-Chlorophenol 95-57-8	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA	**Health hazards** 2	**Flammability** 2	**Instability** 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** 2	**Flammability** 2	**Physical hazards** 0	**Personal protection** X

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Revision Note
No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet