SAFETY DATA SHEET

Issuing Date 27-Sep-2010 **Revision Date** 08-Jan-2016 **Revision Number** 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier
Product Name Phenol Chloroform 5:1 Solution

Other means of identification
Product Code(s) E277
UN/ID no. 2810
Synonyms No information available

Recommended use of the chemical and restrictions on use
Recommended Use For Further Manufacturing Use Only.
Uses advised against Not for Human or Animal Drug Use

Details of the supplier of the safety data sheet

Company Address	**Manufacturer Address**
VWR International, LLC	VWR International, LLC
Radnor Corporate Center	28600 Fountain Parkway
100 Matsonford Road	Solon, Ohio 44139
Radnor, PA 19087-8660	
Company Phone Number	1-800-448-4442
E-mail Address	info@amresco-inc.com

Emergency Telephone Number
Emergency Telephone Number Chemtrec 1-800-424-9300

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 3
Acute Toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Skin Corrosion/Irritation	Category 1 Sub-category B
Serious Eye Damage/Eye Irritation	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1B
Reproductive toxicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

Label elements

Emergency Overview

Danger

Hazard statements
H314 - Causes severe skin burns and eye damage
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H361 - Suspected of damaging fertility or the unborn child
H372 - Causes damage to organs through prolonged or repeated exposure

Appearance Clear Colorless **Physical State** Liquid Mixture **Odor** No information available

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response
Specific treatment (see .? on this label)
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see .? on this label)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

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

Hazards not otherwise classified (HNOC)
Not regulated

Other Information
• Very toxic to aquatic life with long lasting effects
• Harmful to aquatic life

Unknown Acute Toxicity 38.48 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	EC No.	Weight %	Trade Secret
Phenol	108-95-2	203-632-7	40-50	Not applicable
Chloroform	67-66-3	200-663-8	10-15	Not applicable
Sodium hydroxide	1310-73-2	215-185-5	05-3.0	Not applicable

4. FIRST AID MEASURES

First Aid Measures

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin Contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Consult a physician.

Inhalation Move to fresh air. If breathing becomes difficult, give oxygen. Consult a physician.

Ingestion Clean mouth with water and afterwards drink plenty of water. DO NOT induce vomiting unless directed to do so by a physician or poison control center.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms/Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical
No information available.

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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal protection Ensure adequate ventilation, especially in confined areas.

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 Cover with dry lime or soda ash. Pick up and transfer to properly labeled containers. Ventilate area and wash spill site after material pickup is complete.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling Handle in accordance with good industrial hygiene and safety practice. Protect from light

and moisture. Protect from heat and direct sunlight.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from light and moisture. Protect from heat and sunlight.

Incompatible Products Strong oxidizing agents. Strong acids. Strong bases. Aluminium. Reducing agents. Nitrites.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phenol 108-95-2	TWA: 5 ppm	TWA: 5 ppm TWA: 19 mg/m³	IDLH: 250 ppm Ceiling: 15.6 ppm Ceiling: 60 mg/m³ TWA: 5 ppm TWA: 19 mg/m³
Chloroform 67-66-3	TWA: 10 ppm	Ceiling: 50 ppm Ceiling: 240 mg/m³	IDLH: 500 ppm STEL: 2 ppm STEL: 9.78 mg/m³
Sodium hydroxide 1310-73-2	-	TWA: 2 mg/m³	IDLH: 10 mg/m³ Ceiling: 2 mg/m³

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Avoid contact with eyes. Safety glasses with side-shields.

Skin and Body Protection Wear protective gloves/clothing.

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.

Hygiene Measures 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 Mixture
Appearance Clear Colorless
Color No information available
Odor No information available
Odor Threshold No information available

Property	Values	Remarks • Method
pH	No information available	
Melting point/freezing point		
Boiling Point/Range	No information available	
Flash Point (High in °C)	No information available	
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	No information available
Vapor Density	No information available
Specific Gravity	No information available
Water Solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	No information available
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	No information available
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 recommended storage conditions.
Possibility of Hazardous Reactions
None under normal processing.
Conditions to Avoid
Protect from light and moisture. Protect from heat.
Incompatible Materials
Strong oxidizing agents. Strong acids. Strong bases. Aluminium. Reducing agents. Nitrites.
Hazardous Decomposition Products
Hydrogen chloride. Carbon oxides. Phosgene gas.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation Harmful by inhalation.

Eye Contact Corrosive to the eyes and may cause severe damage including blindness.

Skin Contact Contact causes severe skin irritation and possible burns.

Ingestion Harmful if swallowed.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Phenol 108-95-2	= 317 mg/kg (Rat) = 340 mg/kg (Rat)	= 630 mg/kg (Rabbit)	= 316 mg/m³ (Rat) 4 h
Chloroform 67-66-3	= 450 mg/kg (Rat) = 695 mg/kg (Rat)	> 20 g/kg (Rabbit)	= 47702 mg/kg (Rat) 4 h = 47702 mg/m³ (Rat) 4 h
Sodium hydroxide 1310-73-2	-	= 1350 mg/kg (Rabbit)	-

Information on toxicological effects

Symptoms No information available.

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

Sensitization No information available.
Mutagenic Effects No information available.
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Phenol 108-95-2	-	Group 3	-	-
Chloroform 67-66-3	A3	Group 2B	Reasonably Anticipated	X
Sodium hydroxide 1310-73-2	-	-	-	-

Reproductive Toxicity May cause harm to the unborn child. May impair fertility.
Developmental Toxicity May cause harm to the unborn child.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Chronic Toxicity Suspected carcinogen. Suspected mutagen.
Target Organ Effects Kidneys, Liver, Heart, Eyes, Skin, Central nervous system (CNS), Nerves.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 38.48 % of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .

12. ECOLOGICAL INFORMATION

Ecotoxicity

38.48% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Toxicity to Fish	Crustacea
Phenol 108-95-2	187 - 279: 72 h Desmodesmus subspicatus mg/L EC50 static 46.42: 96 h Pseudokirchneriella subcapitata mg/L EC50 0.0188 - 0.1044: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	20.5 - 25.6: 96 h Pimephales promelas mg/L LC50 static 5.449 - 6.789: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 11.9 - 50.5: 96 h Pimephales promelas mg/L LC50 flow-through 32: 96 h Pimephales promelas mg/L LC50 5.0 - 12.0: 96 h Oncorhynchus mykiss mg/L LC50 13.5: 96 h Lepomis macrochirus mg/L LC50 static 0.00175: 96 h Cyprinus carpio mg/L LC50 semi-static 31: 96 h Poecilia reticulata mg/L LC50 semi-static 34.09 - 47.64: 96 h Poecilia reticulata mg/L LC50 static 33.9 - 43.3: 96 h Oryzias latipes mg/L LC50 flow-through 11.9 - 25.3: 96 h Lepomis macrochirus mg/L LC50 flow-through 11.5: 96 h Lepomis macrochirus mg/L LC50 semi-static 27.8: 96 h Brachydanio rerio mg/L LC50 23.4 - 36.6: 96 h Oryzias latipes mg/L LC50 static 7.5 - 14: 96 h Oncorhynchus mykiss mg/L LC50 static 4.23 - 7.49: 96 h Oncorhynchus mykiss mg/L LC50 semi-static	4.24 - 10.7: 48 h Daphnia magna mg/L EC50 Static 10.2 - 15.5: 48 h Daphnia magna mg/L EC50
Chloroform 67-66-3	560: 48 h Desmodesmus subspicatus mg/L EC50	71: 96 h Pimephales promelas mg/L LC50 flow-through 300: 96 h Poecilia reticulata mg/L LC50 static 18: 96 h Lepomis macrochirus mg/L LC50 flow-through 18: 96 h	29: 48 h Daphnia magna mg/L EC50

		Oncorhynchus mykiss mg/L LC50 flow-through	
Sodium hydroxide 1310-73-2	-	45.4: 96 h Oncorhynchus mykiss mg/L LC50 static	-

Persistence and Degradability
No information available.

Bioaccumulation/Accumulation
No information available.

Chemical Name	Partition coefficient
Phenol 108-95-2	1.47
Chloroform 67-66-3	2
Sodium hydroxide 1310-73-2	-

Other Adverse Effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Method Dispose of material in accordance with all federal, state, and local regulations.

Contaminated Packaging Do not re-use empty containers.

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Phenol 108-95-2	-	-	-	-
Chloroform 67-66-3	Category I - Volatiles	-	-	-
Sodium hydroxide 1310-73-2	-	-	-	-

Chemical Name	California Hazardous Waste Status
Phenol 108-95-2	Toxic; Corrosive
Chloroform 67-66-3	Toxic
Sodium hydroxide 1310-73-2	-

14. TRANSPORT INFORMATION

DOT
UN/ID no. 2810
Proper shipping name TOXIC LIQUID, ORGANIC, N.O.S. (PHENOL/CHLOROFORM SOLUTION)
Hazard Class 6.1
Packing Group III

IATA
UN/ID no. 2810
Proper shipping name TOXIC LIQUID, ORGANIC, N.O.S. (PHENOL/CHLOROFORM SOLUTION)
Hazard Class 6.1
Packing Group III

15. REGULATORY INFORMATION

International Inventories

TSCA	Does not comply
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 Commercial Chemical Substances/EU 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

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Component	SARA 313 - Threshold Values %
Phenol 108-95-2 (40-50)	1.0
Chloroform 67-66-3 (10-15)	0.1
Sodium hydroxide 1310-73-2 (05-3.0)	-

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Phenol 108-95-2	1000 lb	X	X	X
Chloroform 67-66-3	10 lb	X	X	X
Sodium hydroxide 1310-73-2	-	-	-	-

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Phenol 108-95-2	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

Chloroform 67-66-3	10 lb	10 lb	RQ 10 lb final RQ RQ 4.54 kg final RQ
Sodium hydroxide 1310-73-2	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

U.S. State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical Name	California Prop. 65
Phenol - 108-95-2	-
Chloroform - 67-66-3	Carcinogen Developmental
Sodium hydroxide - 1310-73-2	-

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Phenol 108-95-2	X	X	X
Chloroform 67-66-3	X	X	X
Sodium hydroxide 1310-73-2	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not regulated

16. OTHER INFORMATION

Issuing Date 27-Sep-2010
Revision Date 08-Jan-2016
Revision Note
No information available

Disclaimer

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International and its Affiliates shall not be held liable for any damage resulting from handling.

End of Safety Data Sheet