MATERIAL SAFETY DATA SHEET
REQUIRED UNDER SAFETY AND HEALTH REGULATION FOR SHIP REPAIRING

DATE UPDATED: AUGUST 18, 2016

SECTION 1. - - - - - - - - - CHEMICAL IDENTIFICATION- - - - - - - - -

Product Name	Phenol, Saturated with water
Product Code(s)	PC5523
Recommended Use	For Further Manufacturing Use Only Not for Human or Animal Drug Use
Recommended Use	DNA Purification

SECTION 2. - - - - - - - - - - HAZARDS IDENTIFICATION - - - - - - - - -

Emergency Overview

Target Organs

Central nervous system, Kidney, Liver, Pancreas, Spleen.

Other hazards which do not result in classification
Vesicant., Rapidly absorbed through skin.

WHMIS Classification

D1B	Toxic Material Causing Immediate and Serious Toxic Effects	Toxic by ingestion
D2B	Toxic Material Causing Other Toxic Effects	Toxic by skin absorption
E	Corrosive Material	Toxic by inhalation. Chronic toxicity Moderate eye irritant Mutagen Corrosive to skin

GHS Classification
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 2)
Acute toxicity, Dermal (Category 3)
Skin corrosion (Category 1B)
Serious eye damage (Category 1)
Germ cell mutagenicity (Category 2)
Specific target organ toxicity - single exposure (Category 2)
Specific target organ toxicity - repeated exposure (Category 2)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word	Danger
Hazard statement(s)	
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
H341	Suspected of causing genetic defects.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H402	Harmful to aquatic life.
Precautionary statement(s)	
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284	Wear respiratory protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

Potential Health Effects

Inhalation	Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	Toxic if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	Toxic if swallowed.

SECTION 3. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - - -

Chemical Name	EC No.	CAS-No	Weight %
Phenol	203-632-7	108-95-2	95-100

SECTION 4. - - - - - - - - - - FIRST-AID MEASURES- - - - - - - - - - -

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

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

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5. - - - - - - - - - FIRE FIGHTING MEASURES - - - - - - - - - -

Conditions of flammability
Not flammable or combustible.

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

Special protective equipment for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Explosion data - sensitivity to mechanical impact
No data available

Explosion data - sensitivity to static discharge
No data available

SECTION 6. - - - - - - - - ACCIDENTAL RELEASE MEASURES- - - - - - - - -

Personal precautions
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

SECTION 7. - - - - - - - - - - HANDLING AND STORAGE- - - - - - - - - -

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature 2 - 8 °C

SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - -

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Phenol	108-95-2	TWA	5.000000 ppm 19.000000 mg/m3	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/m3	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)

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Specific engineering controls

Use mechanical exhaust or laboratory fumehood to avoid exposure.

SECTION 9. - - - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - - - -

Appearance	Clear Two-Layer	
Odor	Phenolic Medicinal	
Odor Threshold	No information available	
Decomposition Temperature °C	No information available	
Freezing Point	No information available	
Initial Boiling Point	No information available	
Physical State	Liquid	
pH	No data available	
Flash Point	Not determined	
Flammable Properties	combustible liquid.	
Autoignition Temperature	No data available	
Boiling Point/Range	No data available	
Melting Point/Range	No data available	
Flammability Limits in Air	**Upper** No data available	**Lower** No data available
Explosive Properties	No information available	
Oxidizing Properties	No information available	
Evaporation Rate	No data available	
MMHG @ 37.8 C	No data available	
Vapor Density	No data available	
Specific Gravity	No data available	
Solubility	No information available	
Partition Coefficient (n-octanol/water)	No data available	
Viscosity	No information available	

SECTION 10. - - - - - - - - -STABILITY AND REACTIVITY - - - - - - - - -

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
No data available

Conditions to avoid
No data available

Materials to avoid
No data available

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

SECTION 11. - - - - - - - - - TOXICOLOGICAL INFORMATION - - - - - - - -

Acute toxicity

Oral LD50
LD50 Oral - Rat - 317.0 mg/kg (Phenol)
Remarks: Behavioral:Convulsions or effect on seizure threshold.

LD50 Oral - Rat - 410.0 - 650.0 mg/kg (Phenol)

Inhalation LC50
LC50 Inhalation - Rat - 8 h - 900 mg/m3(Phenol)

Dermal LD50
LD50 Dermal - Rabbit - 630.0 mg/kg (Phenol)

Other information on acute toxicity
No data available (Phenol)

Skin corrosion/irritation
Skin - Rabbit - Severe skin irritation - 24 h (Phenol)

Serious eye damage/eye irritation
Eyes - Rabbit - Corrosive - OECD Test Guideline 405 (Phenol)

Respiratory or skin sensitisation
No data available (Phenol)

Germ cell mutagenicity
(Phenol)
In vitro tests showed mutagenic
effects (Phenol) (Phenol)
(Phenol)

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. (Phenol)

(Phenol)

(Phenol)

(Phenol)

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Phenol)

Reproductive toxicity

(Phenol)

(Phenol)

(Phenol)

No data available (Phenol)

Teratogenicity

(Phenol)

(Phenol)

No data

available

(Phenol)

(Phenol)

Specific target organ toxicity - single exposure (Globally Harmonized System)
No data available (Phenol)

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available (Phenol)

Potential health effects

Inhalation	Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion	Toxic if swallowed.
Skin	Toxic if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.

Signs and Symptoms of Exposure
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Circulatory collapse, tachypnea, paralysis, Convulsions, Coma., necrosis of mouth and G.I. Tract, Jaundice, respiratory failure, cardiac arrest (Phenol)
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (Phenol)

Synergistic effects
No data available

Additional Information
RTECS: Not available

SECTION 12. - - - - - - - - - ECOLOGICAL INFORMATION - - - - - - - - - -

Toxicity

Toxicity to fish	LC50 - Leuciscus idus (Golden orfe) - 14.00 - 25.00 mg/l - 48 h (Phenol)
	LC50 - Carassius auratus (goldfish) - 36.10 - 68.80 mg/l - 96 h (Phenol)
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 56 mg/l - 48 h (Phenol)
Toxicity to algae	EC50 - Chlorella vulgaris (Fresh water algae) - 370.00 mg/l - 96 h (Phenol)

Persistence and degradability

Biodegradability	Result: - Readily biodegradable

Bioaccumulative potential

Bioaccumulation	Danio rerio (zebra fish) - 5 h (Phenol) Bioconcentration factor (BCF): 17.5 Remarks: Does not bioaccumulate.

Mobility in soil

No data available (Phenol)

PBT and vPvB assessment

No data available

Other adverse effects

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

Harmful to aquatic life.

SECTION 13. - - - - - - - - - DISPOSAL CONSIDERATIONS - - - - - - - - -

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

SECTION 14. - - - - - - - - - - TRANSPORT INFORMATION - - - - - - - - -

DOT (US)

UN number: 2821 Class: 6.1 Packing group: II
Proper shipping name: Phenol solutions
Reportable Quantity (RQ): 1053 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN number: 2821 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: PHENOL SOLUTION
Marine pollutant: No

IATA

UN number: 2821 Class: 6.1 Packing group: II
Proper shipping name: Phenol solution

SECTION 15. - - - - - - - - - REGULATORY INFORMATION - - - - - - - - - -

WHMIS Classification

D1B	Toxic Material Causing Immediate and Serious Toxic Effects	Toxic by ingestion
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E	Corrosive Material	Toxic by inhalation. Chronic toxicity Moderate eye irritant Mutagen Corrosive to skin

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

SECTION 16. - - - - - - - - - - OTHER INFORMATION- - - - - - - - - - -

Issuing Date 13-Aug-2009

Revision Date 18-Aug-2016

Revision Note No information available.

Recommended Restrictions No information available

Disclaimer

The information provided on this MSDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of MSDS