



DAKOTA GASIFICATION COMPANY

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SAFETY DATA SHEET



RESPONSIBLE CARE
OUR COMMITMENT TO SUSTAINABILITY



1.1 Product identifier

Product Name • Dephenolized Cresylic Acid

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified use(s) • Intermediate used in the production of resins, dyes, fragrances, deodorizers, insecticides, etc.

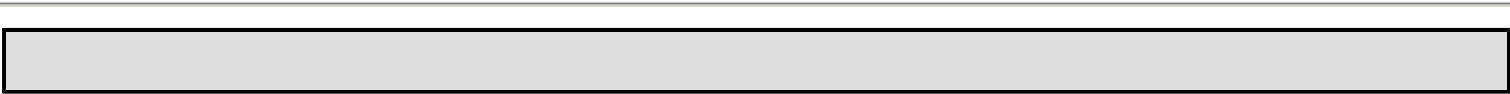
1.3 Details of the supplier of the safety data sheet

Manufacturer • Dakota Gasification
420 County Road 26
Beulah, ND 58523-9400
United States

Telephone (General) • (701) 873-6600

1.4 Emergency telephone number

Manufacturer • 800-424-9300 - CHEMTREC



EU/EEC

According to EU Directive 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]
According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

- CLP**
- Acute Toxicity Oral 3 - H301
 - Acute Toxicity Dermal 3 - H311
 - Skin Corrosion 1B - H314
 - Acute Toxicity Inhalation 1 - H330
 - Germ Cell Mutagenicity 2 - H341
 - Carcinogenicity 2 - H351
 - Hazardous to the aquatic environment Chronic 3 - H412
- DSD/DPD**
- Toxic (T)
 - Harmful (Xn)
 - Corrosive (C)
 - Mutagenic Substances - Category 3
 - Carcinogenic Substances - Category 3
 - R20, R24/25, R34, R40, R68, R52, R53

2.2 Label Elements

CLP
DANGER



Hazard statements

- H301 - Toxic 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.
- H351 - Suspected of causing cancer.
- H412 - Harmful to aquatic life with long lasting effects

Precautionary statements

- Prevention**
- P201 - Obtain special instructions before use.
 - P202 - Do not handle until all safety precautions have been read and understood.
 - P233 - Keep container tightly closed.
 - P260 - Do not breathe dust, fume, gas, mist, vapours and/or spray.
 - P262 - Do not get in eyes, on skin, or on clothing.
 - P264 - Wash thoroughly after handling.
 - P270 - Do not eat, drink or smoke when using this product.
 - P271 - Use only outdoors or in a well-ventilated area.
 - P273 - Avoid release to the environment.
 - P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 - P281 - Use personal protective equipment as required.
- Response**
- P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 - P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 - P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 - P310 - Immediately call a POISON CENTER or doctor/physician.
 - P391 - Collect spillage.
 - P320 - Specific treatment is urgent, see supplemental first aid information.
- Storage/Disposal**
- P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
 - P405 - Store locked up.
 - P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information

- Between 34 and 36 percent of this product consists of an ingredient of unknown toxicity.
- 7.9 to 9.9 percent of this product consists of ingredient(s) of unknown aquatic toxicity

DSD/DPD



- Risk phrases**
- R34 - Causes burns.
 - R20 - Harmful by inhalation.
 - R24/25 - Toxic in contact with skin and if swallowed.
 - R40 - Limited evidence of a carcinogenic effect.
 - R68 - Possible risk of irreversible effects.
 - R52 - Harmful to aquatic organisms.
 - R53 - May cause long-term adverse effects in the aquatic environment.
- Safety phrases**
- S24/25 - Avoid contact with skin and eyes.
 - S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 - S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
 - S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S46 - If swallowed seek medical advice immediately and show this container label.
S61 - Avoid release to the environment. Refer to special instructions/ Safety Data Sheets.

2.3 Other Hazards

- CLP**
- According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.
- DSD/DPD**
- According to European Directive 1999/45/EC this preparation is considered dangerous.

UN GHS

According to Third Revised Edition

2.1 Classification of the substance or mixture

- UN GHS**
- Flammable Liquids 4 - H227
 - Acute Toxicity Oral 3 - H301
 - Acute Toxicity Dermal 3 - H311
 - Skin Corrosion 1B - H314
 - Serious Eye Damage 1 - H318
 - Acute Toxicity Inhalation 1 - H330
 - Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation - H335
 - Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects - H336
 - Germ Cell Mutagenicity 2 - H341
 - Carcinogenicity 2 - H351
 - Hazardous to the aquatic environment Acute 2 - H401
 - Hazardous to the aquatic environment Chronic 3 - H412

2.2 Label elements

UN GHS

DANGER



Hazard statements

- H227 - Combustible liquid
- H301 - Toxic if swallowed
- H311 - Toxic in contact with skin
- H314 - Causes severe skin burns and eye damage
- H318 - Causes serious eye damage
- H330 - Fatal if inhaled
- H335+H336 - May cause respiratory irritation and drowsiness or dizziness
- H341 - Suspected of causing genetic defects.
- H351 - Suspected of causing cancer.
- H412 - Harmful to aquatic life with long lasting effects
- H401 - Toxic to aquatic life

Precautionary statements

- Prevention**
- P201 - Obtain special instructions before use.
 - P202 - Do not handle until all safety precautions have been read and understood.
 - P210 - Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
 - P233 - Keep container tightly closed.
 - P235 - Keep cool.
 - P260 - Do not breathe dust, fume, gas, mist, vapours and/or spray.
 - P262 - Do not get in eyes, on skin, or on clothing.
 - P264 - Wash thoroughly after handling.
 - P270 - Do not eat, drink or smoke when using this product.
 - P271 - Use only outdoors or in a well-ventilated area.
 - P273 - Avoid release to the environment.
 - P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 - P281 - Use personal protective equipment as required.

- Response**
- P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 - P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 - P363 - Wash contaminated clothing before reuse.
 - P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 - P310 - Immediately call a POISON CENTER or doctor/physician.

- Storage/Disposal**
- P403+P235 - Store in a well-ventilated place. Keep cool.
 - P405 - Store locked up.
 - P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information

- Between 34 and 36 percent of this product consists of an ingredient of unknown toxicity.
- Between 17.9 and 21.9 percent of this product consists of ingredient(s) of unknown aquatic toxicity.

2.3 Other hazards

UN GHS

- According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous.

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS

- Combustible Liquid
- Flammable/Combustible Class IIIA
- Highly Toxic
- Corrosive
- Carcinogen

2.2 Label elements

OSHA HCS

- Not required

2.3 Other hazards

OSHA HCS

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to WHMIS

2.1 Classification of the substance or mixture

WHMIS

- Combustible Liquids - B3
- Very Toxic - D1A
- Other Toxic Effects - D2A
- Other Toxic Effects - D2B
- Corrosive - E

2.2 Label elements

WHMIS



- Combustible Liquids - B3
- Very Toxic - D1A
- Other Toxic Effects - D2A

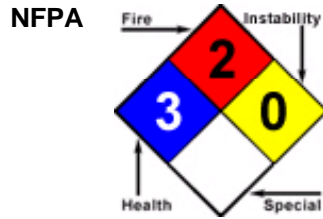
Other Toxic Effects - D2B
Corrosive - E

2.3 Other hazards

WHMIS

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

2.4 Other information



See Section 12 for Ecological Information.

3.1 Substances

- Material does not meet the criteria of a substance according to United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.

3.2 Mixtures

Hazardous Components					
Chemical Name	Identifiers	%(weight)	LD50/LC50	Classifications According to Regulation/Directive	Comments
m-Cresol	CAS: 108-39-4 EC Number: 203-577-9	29% TO 35%	Ingestion/Oral-Rat LD50 · 242 mg/kg Skin-Rabbit LD50 · 620 mg/kg Inhalation-Rat LC50 · 58 mg/m ³	UN GHS: Acute Tox. 3 (orl); Acute Tox. 1 (inhl); Acute Tox. 3 (skn); Skin Corr. 1B; Eye Dam. 1; STOT SE 3: Narc. & Resp. Irrit.; Aquatic Acute 2; EU DSD/DPD: Annex I - T; R24/25 C; R34 EU CLP: Annex VI - Acute Tox. 3 * H311; Acute Tox. 3 * H301; Skin Corr. 1B H314	NDA
p-Cresol	CAS: 106-44-5 EC Number: 203-398-6	17% TO 23%	Ingestion/Oral-Rat LD50 · 270 mg/kg Skin-Rabbit LD50 · 301 mg/kg Inhalation-Rat LC50 · 29 mg/m ³	UN GHS: Acute Tox. 3 (orl); Acute Tox. 3 (skn); Acute Tox. 1 (inhl); Skin Corr. 1B; Eye Dam. 1; STOT SE 3: Narc. & Resp. Irrit.; Aquatic Acute 2; Aquatic Chronic 3; EU DSD/DPD: Annex I - T; R24/25 C; R34 EU CLP: Annex VI - Acute Tox. 3 * H311; Acute Tox. 3 * H301; Skin Corr. 1B H314	NDA
o-Cresol	CAS: 95-48-7 EC Number: 202-423-8	18% TO 22%	Ingestion/Oral-Rat LD50 · 1350 mg/kg Skin-Rabbit LD50 · 890 mg/kg Inhalation-Rat LC50 · 29 mg/m ³	UN GHS: Acute Tox. 3 (skn); Acute Tox. 3 (orl); Acute Tox. 1 (inhl); Eye Dam. 1; Skin Corr. 1B; Aquatic Acute 2; EU DSD/DPD: Annex I - T; R24/25 C; R34 EU CLP: Annex VI - Acute Tox. 3 * H311; Acute Tox. 3 * H301; Skin Corr. 1B H314	NDA

Xylenol	CAS: 1300-71-6 EC Number: 215-089-3 UN: UN2261	10% TO 12%	NDA	UN GHS: Data Lacking EU DSD/DPD: Annex I - T; R24/25 C; R34 N; R51; R53 EU CLP: Annex VI - Acute Tox. 3 * H311; Acute Tox. 3 * H301; Skin Corr. 1B H314; Aquatic Chronic 2 H411	NDA
Phenol, o-ethyl-	CAS: 90-00-6 EINECS: 201-958-4	7% TO 9%	NDA	UN GHS: Data Lacking EU DSD/DPD: Data Lacking EU CLP: Data Lacking	NDA
Phenol, o-methoxy-	CAS: 90-05-1 EC Number: 201-964-7	2% TO 5%	Ingestion/Oral-Rat LD50 · 520 mg/kg Skin-Rabbit LD50 · 4600 mg/kg	UN GHS: Acute Tox 4 (orl); Eye Irrit. 2; Skin Irrit. 2; STOT SE 3: Resp Irrit.; Aquatic Acute 3 EU DSD/DPD: Annex I - Xn; R22 Xi; R36/38 EU CLP: Annex VI - Acute Tox. 4 * H302; Eye Irrit. 2 H319; Skin Irrit. 2 H315	NDA
Phenol	CAS: 108-95-2 EC Number: 203-632-7 UN: UN1671, UN2312, UN2821	0.01% TO 2.5%	Ingestion/Oral-Rat \pm LD50 · 317 mg/kg Skin-Rabbit LD50 · 630 mg/kg Inhalation-Rat LC50 · 316 mg/m ³ 4 Hour(s)	UN GHS: Acute Tox 3 (orl); Acute Tox 3 (skn); Skin Corr. 1B; Eye Dam. 1; Carc Cat 2; Mutagen Cat 2; Acute Aquatic 2; EU DSD/DPD: Annex I - T; R23/24/25 C; R34 Xn; R48/20/21/22 Muta.Cat.3; R68 EU CLP: Annex VI - Muta. 2 H341; Acute Tox. 3 * H331; Acute Tox. 3 * H311; Acute Tox. 3 * H301; STOT RE 2 * H373; Skin Corr. 1B H314	NDA
Naphthalene	CAS: 91-20-3 EC Number: 202-049-5 UN: UN1334, UN2304	0.3% TO 1%	Skin-Rabbit LD50 · >20 g/kg Ingestion/Oral-Rat LD50 · 490 mg/kg	UN GHS: Acute Tox. 4 (orl); Skin Irrit. 2; Eye Irrit. 2; Carc. 2; Aquatic Acute 1; Aquatic Chronic 1; EU DSD/DPD: Annex I - Xn; R22 Carc.Cat.3; R40 N; R50 R53 EU CLP: Annex VI - Acute Tox. 4 *H312; Acute Tox. 4 * H302; Eye Irrit. 2 H319; Skin Irrit. 2 H315	NDA
Pyrocatechol	CAS: 120-80-9 EC Number: 204-427-5	0.01% TO 1%	Ingestion/Oral-Rat LD50 · 260 mg/kg Skin-Rabbit LD50 · 800 mg/kg	UN GHS: Acute Tox. 3 (orl); Acute Tox. 3 (skn); Eye Dam. 1; Carc 2; Aquatic Acute 2; EU DSD/DPD: Annex I - Xn; R21/22 Xi; R36/38 EU CLP: Annex VI - Acute Tox. 4 *H312; Acute Tox. 4 * H302; Eye Irrit. 2 H319; Skin Irrit. 2 H315	NDA
C9 Phenolics	NDA	0.9%	NDA	UN GHS: Data Lacking EU DSD/DPD: Data Lacking EU CLP: Data Lacking	NDA

See Section 11 for Toxicological Information.

4.1 Description of first aid measures

Inhalation

- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If signs/symptoms continue, get medical attention.

Skin

- Rapid skin decontamination is critical. The victim may not be aware of initial skin contact because of local anesthetic effect of phenol. Remove clothing, shoes, socks, and jewelry from the affected areas as quickly as possible, cutting them off if necessary. Be careful not to get any chemical on your skin or clothing. Rinse skin immediately with plenty of water for 15 -20 minutes. DO NOT use hot water. In case of extensive splashing, wash the victim down under a shower under cold or luke -warm water while protecting the victim's eyes. If clothing is stuck to skin after flushing with water, do not remove it. If burns develop, such as inflammation or blisters, apply a dry sterile dressing or use a clean dry cloth. Elevate the affected area above the level of the victim's heart if possible. If the victim is in pain, immerse the painful area in cold water or apply cold wet dressings. DO NOT break open blisters or remove skin. Get

- medical attention immediately. Wash contaminated clothing before reuse.
- Eye**
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. The victim may be in great pain and want to keep his eyes closed but you must rinse the chemical out of his eye(s) in order to prevent permanent damage. Ask the victim to look up, down, and side -to-side as you rinse in order to better reach all parts of the eye(s). Get medical attention immediately.
- Ingestion**
- If ingested, a conscious victim should immediately drink 4 to 8 ounces of water, and then a slurry of activated charcoal to reduce the concentration of the chemical. Rinse mouth. Do NOT induce vomiting. Do not give sodium bicarbonate or carbonated drinks. Get medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician

- Treat symptomatically and supportively.

4.4 Other information

- Call 911 or emergency medical service. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Keep victim warm and quiet.

5.1 Extinguishing media

Suitable Extinguishing Media • Water fog, alcohol foam, carbon dioxide, or dry chemical.

Unsuitable Extinguishing Media • No data available

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards • Combustible material: may burn but does not ignite readily. Runoff may pollute waterways.

Hazardous Combustion Products • Fumes of cresols and other aromatic degradation products.

5.3 Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
Cool exposed containers with water.
Runoff from fire control may cause pollution.
LARGE FIRES: Dike fire-control water for later disposal.

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions • Stay upwind. Ventilate enclosed areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Emergency Procedures • ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area) As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Stop leak if you can do it without risk. Keep unauthorized personnel away. Stay upwind. Keep out of low areas.

6.2 Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Small quantities of liquid can be absorbed onto paper towels and placed in an appropriate container. Larger quantities of liquids may be absorbed in vermiculite, dry sand, earth, or similar material and placed into a removable head steel drum.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

6.5 Other Information

- Spills or releases should be reported, if required, to the local, state, and federal regulatory agencies. The materials resulting from clean-up operations of a spill may be hazardous and therefore subject to specific regulations. REPORTABLE SPILL QUANTITY: Thirty-four (34) gallons based on 100 pounds Meta-Cresol.

7.1 Precautions for safe handling

Handling

- Handle and open container with care. Use only with adequate ventilation. Use caution when combining with water; DO NOT add water to corrosive liquid, ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes. Keep away from heat and sparks.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Store locked up. Keep container/package tightly closed in a cool, well-ventilated place. Ventilate enclosed areas. Do Not store food in work areas.

Special Packaging Materials

- Do not use nitrile materials for hoses, gaskets, etc. Liquid cresol will attack some forms of plastic and coatings.

Incompatible Materials or Ignition Sources

- Violent reactions can occur from contact with nitric acid, oleum, chlorosulfonic acid, and calcium hypochlorite.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

8.1 Control parameters

Exposure Limits/Guidelines						
	Result	ACGIH	Canada Ontario	Canada Quebec	China	Germany TRGS
Phenol (108-95-2)	STELs	Not established	Not established	Not established	20 mg/m3 STEL	Not established
	TWAs	5 ppm TWA	5 ppm TWAEV; 19 mg/m3 TWAEV	5 ppm TWAEV; 19 mg/m3 TWAEV	10 mg/m3 TWA	2 ppm TWA; 7.8 mg/m3 TWA
Pyrocatechol (120-80-9)	TWAs	5 ppm TWA	5 ppm TWAEV; 22 mg/m3 TWAEV	5 ppm TWAEV; 23 mg/m3 TWAEV	Not established	Not established
Naphthalene (91-20-3)	STELs	15 ppm STEL	15 ppm STEV; 78 mg/m3 STEV	15 ppm STEV; 79 mg/m3 STEV	75 mg/m3 STEL	Not established
	TWAs	10 ppm TWA	10 ppm TWAEV; 52 mg/m3 TWAEV	10 ppm TWAEV; 52 mg/m3 TWAEV	50 mg/m3 TWA	Not established
p-Cresol (106-44-5)	STELs	Not established	Not established	Not established	20 mg/m3 STEL	Not established
	TWAs	20 mg/m3 TWA (inhalable fraction and vapor)	Not established	Not established	10 mg/m3 TWA	Not established
o-Cresol	STELs	Not established	Not established	Not established	20 mg/m3 STEL	Not established
		20 mg/m3 TWA				

(95-48-7)	TWAs	(inhalable fraction and vapor)	Not established	Not established	10 mg/m3 TWA	Not established
m-Cresol (108-39-4)	STELs		Not established	Not established	20 mg/m3 STEL	Not established
	TWAs	20 mg/m3 TWA (inhalable fraction and vapor)	Not established	Not established	10 mg/m3 TWA	Not established
Exposure Limits (OSHA)						
	Result	Italy	NIOSH	OSHA		
Phenol (108-95-2)	TWAs	2 ppm TWA; 7.8 mg/m3 TWA	5 ppm TWA; 19 mg/m3 TWA	5 ppm TWA; 19 mg/m3 TWA		
	Ceilings	Not established	15.6 ppm Ceiling (15 min); 60 mg/m3 Ceiling (15 min)	Not established		
Pyrocatechol (120-80-9)	TWAs	Not established	5 ppm TWA; 20 mg/m3 TWA	Not established		
Naphthalene (91-20-3)	TWAs	Not established	10 ppm TWA; 50 mg/m3 TWA	10 ppm TWA; 50 mg/m3 TWA		
	STELs	Not established	15 ppm STEL; 75 mg/m3 STEL	Not established		
p-Cresol (106-44-5)	TWAs	Not established	2.3 ppm TWA; 10 mg/m3 TWA	Not established		
o-Cresol (95-48-7)	TWAs	Not established	2.3 ppm TWA; 10 mg/m3 TWA	Not established		
m-Cresol (108-39-4)	TWAs	Not established	2.3 ppm TWA; 10 mg/m3 TWA	Not established		

8.2 Exposure controls

Engineering Measures/Controls

- Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.

Personal Protective Equipment

Pictograms



Respiratory

- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear safety glasses.

Hands

- Wear protective gloves -rubber gloves (PVC) or approved impervious materials.

Skin/Body

- Wear protective clothing made of PVC material or other material impervious to cresylic acids

General Industrial Hygiene Considerations

- Do not get in eyes or on skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Handle in accordance with good industrial hygiene and safety practice.

Environmental Exposure Controls

- Follow best practice for site management and disposal of waste. Avoid release to the environment.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
 MSHA = Mine Safety and Health Administration
 NIOSH = National Institute of Occupational Safety and Health
 OSHA = Occupational Safety and Health Administration

STEL = Short Term Exposure Limits are based on 15-minute exposures
 STEV = Short Term Exposure Value
 TWAEV = Time-Weighted Average Exposure Value
 TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	A brownish colored liquid with a phenol, medicinal odor.
Color	Brownish	Odor	Medicinal
Taste	No data available	Particulate Type	Not relevant
Particulate Size	Not relevant	Aerosol Type	Not relevant
Odor Threshold	0.0006 ppm	Physical and Chemical Properties	No data available
General Properties			
Boiling Point	380 F(193.3333 C)	Melting Point	10 F(-12.2222 C)
Decomposition Temperature	No data available	Heat of Decomposition	No data available
pH	No data available	Specific Gravity/Relative Density	1.04 Water=1
Density	No data available	Bulk Density	No data available
Water Solubility	Moderately soluble	Solvent Solubility	No data available
Viscosity	No data available	Explosive Properties	No data available
Oxidizing Properties:	No data available		
Volatility			
Vapor Pressure	1 mmHg (torr) @ 100 F(37.7778 C)	Vapor Density	3.7 Air=1 Cresol
Evaporation Rate	0.011 n-Butyl Acetate = 1	VOC (Wt.)	No data available
VOC (Vol.)	No data available	Volatiles (Wt.)	< 1 %
Volatiles (Vol.)	No data available		
Flammability			
Flash Point	81 C(177.8 F) o-cresol	Flash Point Test Type	No data available o-cresol
UEI	No data available	LEI	No data available
Autoignition	No data available	Self-Accelerating Decomposition Temperature (SADT)	No data available
Heat of Combustion (ΔH_c)	No data available	Burning Time	No data available
Flame Duration	No data available	Flame Height	No data available
Flame Extension	No data available	Ignition Distance	No data available
Flammability (solid, gas)	No data available		
Environmental			
Half-Life	No data available	Octanol/Water Partition coefficient	No data available
Coefficient of water/oil distribution	No data available	Bioaccumulation Factor	No data available
Bioconcentration Factor	No data available	Biochemical Oxygen Demand BOD/BOD5	No data available
Chemical Oxygen Demand	No data available	Persistence	No data available
Degradation	No data available		

9.2 Other Information

- No additional physical and chemical parameters noted.

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Incompatible materials. Excess heat. Oxidizing materials.

10.5 Incompatible materials

- Violent reactions can occur from contact with nitric acid, oleum, chlorosulfonic acid, and calcium hypochlorite.

10.6 Hazardous decomposition products

- Conditions of fire, explosion, and chemical reactions can cause the release of toxic vapors or gases.

11.1 Information on toxicological effects

Test Type	Dosage	Route	Species	Duration	Results	Test Class	Target Organs	Comments
Acute Toxicity	= 121 mg/kg	Ingestion/Oral	Rat	NDA	LD50	NDA	NDA	ortho-Cresol
Acute Toxicity	= 207 mg/kg	Ingestion/Oral	Rat	NDA	LD50	NDA	NDA	para-Cresol
Component Name	CAS	Data						
m-Cresol (29% TO 35%)	108-39-4	Acute Toxicity: orl-rat LD50:242 mg/kg; ihl-rat LC50:58 mg/m3; skn-rbt LD50:620 mg/kg; Reproductive: orl-rat TDLo:1400 mg/kg (multigeneration); Tumorigen/Carcinogen: skn-mus TDLo:2280 mg/kg/20W-I						
p-Cresol (17% TO 23%)	106-44-5	Acute Toxicity: ihl-rat LC50:29 mg/m3; skn-rbt LD50:301 mg/kg; Tumorigen/Carcinogen: skn-mus TDLo:2280 mg/kg/20W-I						
o-Cresol (18% TO 22%)	95-48-7	Acute Toxicity: ihl-rat LC50:29 mg/m3; skn-rat LD50:620 mg/kg; Reproductive: orl-mus TDLo:660 mg/kg (multigenerations); Tumorigen/Carcinogen: skn-mus TDLo:4800 mg/kg/12W-I						
Phenol, o-ethyl- (7% TO 9%)	90-00-6	Tumorigen/Carcinogen: skn-mus TDLo:3100 mg/kg/12W-I						
Phenol, o-methoxy- (2% TO 5%)	90-05-1	Acute Toxicity: orl-rat LD50:520 mg/kg; ihl-mus LC50:7570 mg/m3; skn-rbt LD50:4600 mg/kg; Irritation: eye-rbt 5 mg MLD; skn-rbt 500 mg/24H SEV						
Phenol (0.01% TO 2.5%)	108-95-2	Acute Toxicity: orl-rat LD50:317 mg/kg; ihl-rat LC50:316 mg/m3/4H; skn-rat LD50:669 mg/kg; Irritation: eye-rbt 5 mg SEV; skn-rbt 535 mg open SEV; Mutagen: dns-rat-ork 4 gm/kg; Reproductive: orl-rat TDLo:300 mg/kg (6-15D preg); Tumorigen/Carcinogen: skn-mus TDLo:4000 mg/kg/24W-I						
Naphthalene (0.3% TO 1%)	91-20-3	Acute Toxicity: orl-rat LD50:490 mg/kg; ihl-rat TCLo:10 ppm/6H; skn-rat LD50:>2500 mg/kg; Irritation: skn-rbt 0.05 mL/24H SEV; Reproductive: orl-rat TDLo:4500 mg/kg (6-15D preg);						

Tumorigen/Carcinogen: ihl-rat TCLo:10 ppm/6H/105W-I

GHS Properties	Classification
Acute toxicity	EU/CLP • Acute Toxicity 1 (Inhalation);Acute Toxicity 3 (Skin,Ingestion/Oral) UN GHS • Acute Toxicity 1 (Inhalation);Acute Toxicity 3 (Skin,Ingestion/Oral)
Skin corrosion/Irritation	EU/CLP • Skin Corrosion 1B UN GHS • Skin Corrosion 1B
Serious eye damage/Irritation	EU/CLP • Data lacking UN GHS • Serious Eye Damage 1
Skin sensitization	EU/CLP • Data lacking UN GHS • Data lacking
Respiratory sensitization	EU/CLP • Data lacking UN GHS • Data lacking
Aspiration Hazard	EU/CLP • Data lacking UN GHS • Data lacking
Carcinogenicity	EU/CLP • Carcinogenicity 2 UN GHS • Carcinogenicity 2
Germ Cell Mutagenicity	EU/CLP • Germ Cell Mutagenicity 2 UN GHS • Germ Cell Mutagenicity 2
Toxicity for Reproduction	EU/CLP • Data lacking UN GHS • Data lacking
STOT-SE	EU/CLP • Data lacking UN GHS • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects;Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
STOT-RE	EU/CLP • Data lacking UN GHS • Data lacking

Target Organs

- Central Nervous System (CNS)

Route(s) of entry/exposure

- Inhalation, Skin, Eye, Ingestion

Potential Health Effects

Inhalation

Acute (Immediate)

- Based upon component acute toxicity test results this material may be fatal if inhaled. May cause respiratory irritation. May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin

Acute (Immediate)

- Causes severe skin burns. Skin exposure of 64 sq. in. has caused fatality. Skin contact can be life threatening. Based upon information from components this material is toxic via skin contact.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye

Acute (Immediate)

- Causes serious eye damage.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion

Acute (Immediate)

- May cause gastrointestinal disturbances including diarrhea, nausea, and vomiting. Ingestion of cresols may cause methemoglobinemia. Ingestion can be fatal.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

Mutagenic Effects

- Repeated and prolonged exposure may cause mutagenic effects.

Carcinogenic Effects

- Repeated and prolonged exposure may cause cancer.

	CAS	IARC	NTP
Pyrocatechol	120-80-9	Group 2B-Possible Carcinogen	Not established
Naphthalene	91-20-3	Group 2B-Possible Carcinogen	Evidence of Carcinogenicity Reasonably Anticipated to be Human Carcinogen

Reproductive Effects

- No developmental or reproductive effects have been reported in humans.

Key to abbreviations

TD = Toxic Dose

LD = Lethal Dose

SEV = Severe

LC = Lethal Concentration

12.1 Toxicity

Dosage	Species	Duration	Results	Exposure Conditions	Comments
= 3.88 mg/L	Fish: Rainbow Trout	96 Hour(s)	LC50	NDA	Meta-Cresol
= 7.7 mg/L	Water Flea: Daphnia Magna	48 Hour(s)	LC50	NDA	Para-cresol
= 1 mg/L	Water Flea: Daphnia Magna	21 Day(s)	NOEC	NDA	Para-cresol
= 8.4 mg/L	Fish: Rainbow Trout	96 Hour(s)	LC50	NDA	Ortho-Cresol
= 25.9 mg/L	Water Flea: Daphnia Magna	48 Hour(s)	EC50	NDA	Guaiacol
= 1.6 mg/L	Water Flea: Daphnia Magna	48 Hour(s)	EC50	NDA	Napthalene
= 1 mg/L	Water Flea: Daphnia Magna	48 Hour(s)	NOEC	NDA	Napthalene
= 3.5 mg/L	Fish: Fathead Minnow	96 Hour(s)	LC50	NDA	Catechol
= 6.6 mg/L	Water Flea: Daphnia Magna	48 Hour(s)	EC50	NDA	Phenol
= 3.63 mg/L	Water Flea: Daphnia Magna	96 Hour(s)	NOEC	NDA	Phenol

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Material data lacking.

12.5 Results of PBT and vPvB assessment

- PBT and vPvB assessment has not been conducted for this material.

12.6 Other adverse effects**Potential Environmental Effects**

- May cause long lasting harmful effects to aquatic life.

13.1 Waste treatment methods

Product waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste

- Recycling/reuse of all cresylic acid residuals is recommended. Discarded or spill clean-up materials may be considered hazardous as defined under RCRA 40 CFR 261.24 (Cresol DO26). Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.



	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN2022	Cresylic acid	6.1,8	II	NDA
TDG	UN2022	CRESYLIC ACID	6.1	II	NDA
IMO/IMDG	UN2022	Cresylic acid	6.1,8	II	NDA
IATA/ICAO	UN2022	Cresylic acid	6.1,8	II	NDA

14.6 Special precautions for user

- No special precautions.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not relevant.

14.8 Other information

- DOT** ● 49 CFR 172.101 Table 1 to Appendix A lists Cresylic acid (isomers and mixture) as having a reportable quantity (RQ) of 100 lbs (45.4 kg).

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

SARA Hazard Classifications ● Acute, Chronic, Fire

Component	CAS	MA	NJ	PA
m-Cresol	108-39-4	Yes	Yes	Yes
p-Cresol	106-44-5	Yes	Yes	Yes
o-Cresol	95-48-7	Yes	Yes	Yes
Xylenol	1300-71-6	Yes	Yes	Yes
Phenol, o-ethyl-	90-00-6	No	No	No
Phenol, o-methoxy-	90-05-1	No	No	No
Phenol	108-95-2	Yes	Yes	Yes
Naphthalene	91-20-3	Yes	Yes	Yes
Pyrocatechol	120-80-9	Yes	Yes	Yes
C9 Phenolics	NDA	No	No	No

Inventory						
Component	CAS	Canada DSL	Canada NDSL	China	EU EINECS	EU ELNICS
m-Cresol	108-39-4	Yes	No	Yes	Yes	No
p-Cresol	106-44-5	Yes	No	Yes	Yes	No

o-Cresol	95-48-7	Yes	No	Yes	Yes	No
Xylenol	1300-71-6	Yes	No	Yes	Yes	No
Phenol, o-ethyl-	90-00-6	No	No	Yes	Yes	No
Phenol, o-methoxy-	90-05-1	Yes	No	Yes	Yes	No
Phenol	108-95-2	Yes	No	Yes	Yes	No
Naphthalene	91-20-3	Yes	No	Yes	Yes	No
Pyrocatechol	120-80-9	Yes	No	Yes	Yes	No
C9 Phenolics	NDA	No	No	No	No	No

Component	CAS	Japan ENCS	Korea KECL	TSCA
m-Cresol	108-39-4	Yes	Yes	Yes
p-Cresol	106-44-5	Yes	Yes	Yes
o-Cresol	95-48-7	Yes	Yes	Yes
Xylenol	1300-71-6	Yes	Yes	Yes
Phenol, o-ethyl-	90-00-6	Yes	Yes	Yes
Phenol, o-methoxy-	90-05-1	Yes	Yes	Yes
Phenol	108-95-2	Yes	Yes	Yes
Naphthalene	91-20-3	Yes	Yes	Yes
Pyrocatechol	120-80-9	Yes	Yes	Yes
C9 Phenolics	NDA	No	No	No

Australia

Labor

Australia - Hazardous Substances - Substances Requiring Health Surveillance

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	Not Listed
● p-Cresol	106-44-5	17% TO 23%	Not Listed
● m-Cresol	108-39-4	29% TO 35%	Not Listed
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	Not Listed
● Phenol	108-95-2	0.01% TO 2.5%	Not Listed
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

Australia - High Volume Industrial Chemicals List

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	Not Listed
● p-Cresol	106-44-5	17% TO 23%	Not Listed
● m-Cresol	108-39-4	29% TO 35%	Not Listed
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	Not Listed
● Phenol	108-95-2	0.01% TO 2.5%	
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

Australia - List of Designated Hazardous Substances - Classification

● Pyrocatechol	120-80-9	0.01% TO 1%	Xn, Xi R21/22, R36/38
● o-Cresol	95-48-7	18% TO 22%	T, C R24/25, R34

● p-Cresol	106-44-5	17% TO 23%	T, C R24/25, R34
● m-Cresol	108-39-4	29% TO 35%	T, C R24/25, R34
● Xylenol	1300-71-6	10% TO 12%	T, C, N R24/25, R34, R51, R53
● Naphthalene	91-20-3	0.3% TO 1%	Xn, N Carc.Cat.3 R40, R22, R50, R53
● Phenol	108-95-2	0.01% TO 2.5%	T, Xn, C Muta.Cat.3 R68, R23/24/25, R48/20/21/22, R34
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Xn, Xi R22, R36/38
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

Environment

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	Not Listed
● p-Cresol	106-44-5	17% TO 23%	Not Listed
● m-Cresol	108-39-4	29% TO 35%	Not Listed
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	Not Listed
● Phenol	108-95-2	0.01% TO 2.5%	10 tonnes/year Threshold category 1
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

Australia - Ozone Protection Act - Scheduled Substances

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	Not Listed
● p-Cresol	106-44-5	17% TO 23%	Not Listed
● m-Cresol	108-39-4	29% TO 35%	Not Listed
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	Not Listed
● Phenol	108-95-2	0.01% TO 2.5%	Not Listed
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	Not Listed
● p-Cresol	106-44-5	17% TO 23%	Not Listed
● m-Cresol	108-39-4	29% TO 35%	Not Listed
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	Candidate chemical
● Phenol	108-95-2	0.01% TO 2.5%	Not Listed
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

Canada

Labor

Canada - WHMIS - Classifications of Substances

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	D1A, E
● p-Cresol	106-44-5	17% TO 23%	D1A, E
● m-Cresol	108-39-4	29% TO 35%	B3, D1A, E
● Xylenol	1300-71-6	10% TO 12%	D1A, D2B
● Naphthalene	91-20-3	0.3% TO 1%	B4, D2A
● Phenol	108-95-2	0.01% TO 2.5%	D1A, E
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Uncontrolled product according to WHMIS classification criteria

- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

Canada - WHMIS - Ingredient Disclosure List

- Pyrocatechol 120-80-9 0.01% TO 1% 1 %
- o-Cresol 95-48-7 18% TO 22% 1 %
- p-Cresol 106-44-5 17% TO 23% 1 %
- m-Cresol 108-39-4 29% TO 35% 1 %
- Xylenol 1300-71-6 10% TO 12% 1 %
- Naphthalene 91-20-3 0.3% TO 1% 1 %
- Phenol 108-95-2 0.01% TO 2.5% 1 %
- Phenol, o-methoxy- 90-05-1 2% TO 5% 1 %
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

Environment

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% Not Listed
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% Not Listed
- Phenol 108-95-2 0.01% TO 2.5% Priority Substance List 2 (substance not considered toxic)
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

Mexico**Other**

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% Not Listed
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% Class = 6.1
- Naphthalene 91-20-3 0.3% TO 1% Class = 4.1 UN1334, UN2304
- Phenol 108-95-2 0.01% TO 2.5% Class = 6.1 UN1671, UN2312, UN2821
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

Mexico - Regulated Substances

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% Not Listed
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% UN2261
- Naphthalene 91-20-3 0.3% TO 1% UN2304 (molten); UN1334 (crude or refined)
- Phenol 108-95-2 0.01% TO 2.5% UN2821 (solution); UN1671 (solid); UN2312 (molten)
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

United States

Labor

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	Not Listed
● p-Cresol	106-44-5	17% TO 23%	Not Listed
● m-Cresol	108-39-4	29% TO 35%	Not Listed
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	Not Listed
● Phenol	108-95-2	0.01% TO 2.5%	Not Listed
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	Not Listed
● p-Cresol	106-44-5	17% TO 23%	Not Listed
● m-Cresol	108-39-4	29% TO 35%	Not Listed
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	Not Listed
● Phenol	108-95-2	0.01% TO 2.5%	Not Listed
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

Environment**U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants**

● Pyrocatechol	120-80-9	0.01% TO 1%	
● o-Cresol	95-48-7	18% TO 22%	
● p-Cresol	106-44-5	17% TO 23%	
● m-Cresol	108-39-4	29% TO 35%	
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	
● Phenol	108-95-2	0.01% TO 2.5%	
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

● Pyrocatechol	120-80-9	0.01% TO 1%	100 lb final RQ; 45.4 kg final RQ
● o-Cresol	95-48-7	18% TO 22%	100 lb final RQ; 45.4 kg final RQ
● p-Cresol	106-44-5	17% TO 23%	100 lb final RQ; 45.4 kg final RQ
● m-Cresol	108-39-4	29% TO 35%	100 lb final RQ; 45.4 kg final RQ
● Xylenol	1300-71-6	10% TO 12%	1000 lb final RQ; 454 kg final RQ
● Naphthalene	91-20-3	0.3% TO 1%	100 lb final RQ; 45.4 kg final RQ
● Phenol	108-95-2	0.01% TO 2.5%	1000 lb final RQ; 454 kg final RQ
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	Not Listed
● p-Cresol	106-44-5	17% TO 23%	Not Listed
● m-Cresol	108-39-4	29% TO 35%	Not Listed
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	Not Listed

- Phenol 108-95-2 0.01% TO 2.5% Not Listed
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% 100 lb EPCRA RQ
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% Not Listed
- Phenol 108-95-2 0.01% TO 2.5% 1000 lb EPCRA RQ
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% 1000 lb lower TPQ; 10000 lb upper TPQ
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% Not Listed
- Phenol 108-95-2 0.01% TO 2.5% 500 lb lower TPQ; 10000 lb upper TPQ
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

- Pyrocatechol 120-80-9 0.01% TO 1% 0.1 % de minimis concentration
- o-Cresol 95-48-7 18% TO 22% 1.0 % de minimis concentration
- p-Cresol 106-44-5 17% TO 23% 1.0 % de minimis concentration
- m-Cresol 108-39-4 29% TO 35% 1.0 % de minimis concentration
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% 0.1 % de minimis concentration
- Phenol 108-95-2 0.01% TO 2.5% 1.0 % de minimis concentration
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% Not Listed
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% Not Listed
- Phenol 108-95-2 0.01% TO 2.5% Not Listed
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% Included in waste stream: F039
- p-Cresol 106-44-5 17% TO 23% Included in waste stream: F039
- m-Cresol 108-39-4 29% TO 35% Included in waste stream: F039
- Xylenol 1300-71-6 10% TO 12% Not Listed

- Naphthalene 91-20-3 0.3% TO 1% Included in waste streams: F024, F025, F034, F039, K001, K035, K060, K087, K145
- Phenol 108-95-2 0.01% TO 2.5% Included in waste streams: F039, K001, K022, K087
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - D Series Wastes - Max Conc of Contaminants for the Toxic Characteristic

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% 200.0 mg/L regulatory level
- p-Cresol 106-44-5 17% TO 23% 200.0 mg/L regulatory level
- m-Cresol 108-39-4 29% TO 35% 200.0 mg/L regulatory level
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% Not Listed
- Phenol 108-95-2 0.01% TO 2.5% Not Listed
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% Not Listed
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% waste number U165
- Phenol 108-95-2 0.01% TO 2.5% waste number U188
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22%
- p-Cresol 106-44-5 17% TO 23%
- m-Cresol 108-39-4 29% TO 35%
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1%
- Phenol 108-95-2 0.01% TO 2.5%
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% 0.11 mg/L (wastewater); 5.6 mg/kg (nonwastewater)
- p-Cresol 106-44-5 17% TO 23% 0.77 mg/L (wastewater); 5.6 mg/kg (nonwastewater)
- m-Cresol 108-39-4 29% TO 35% 0.77 mg/L (wastewater); 5.6 mg/kg (nonwastewater)
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% 0.059 mg/L (wastewater); 5.6 mg/kg (nonwastewater)
- Phenol 108-95-2 0.01% TO 2.5% 0.039 mg/L (wastewater); 6.2 mg/kg (nonwastewater)
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - TSD Facilities Ground Water Monitoring

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22%
- p-Cresol 106-44-5 17% TO 23%

- m-Cresol 108-39-4 29% TO 35%
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1%
- Phenol 108-95-2 0.01% TO 2.5%
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - U Series Wastes - Acutely Toxic Wastes & Other Hazardous Characteristics

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% Not Listed
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% waste number U165
- Phenol 108-95-2 0.01% TO 2.5% waste number U188
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% Not Listed
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1%
- Phenol 108-95-2 0.01% TO 2.5% Not Listed
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

- Pyrocatechol 120-80-9 0.01% TO 1% carcinogen, initial date 7/15/03
- o-Cresol 95-48-7 18% TO 22% Not Listed
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% carcinogen, initial date 4/19/02
- Phenol 108-95-2 0.01% TO 2.5% Not Listed
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% Not Listed
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% Not Listed
- Phenol 108-95-2 0.01% TO 2.5% Not Listed
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	Not Listed
● p-Cresol	106-44-5	17% TO 23%	Not Listed
● m-Cresol	108-39-4	29% TO 35%	Not Listed
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	Not Listed
● Phenol	108-95-2	0.01% TO 2.5%	Not Listed
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	Not Listed
● p-Cresol	106-44-5	17% TO 23%	Not Listed
● m-Cresol	108-39-4	29% TO 35%	Not Listed
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	5.8 µg/day NSRL
● Phenol	108-95-2	0.01% TO 2.5%	Not Listed
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	Not Listed
● p-Cresol	106-44-5	17% TO 23%	Not Listed
● m-Cresol	108-39-4	29% TO 35%	Not Listed
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	Not Listed
● Phenol	108-95-2	0.01% TO 2.5%	Not Listed
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

● Pyrocatechol	120-80-9	0.01% TO 1%	Not Listed
● o-Cresol	95-48-7	18% TO 22%	Not Listed
● p-Cresol	106-44-5	17% TO 23%	Not Listed
● m-Cresol	108-39-4	29% TO 35%	Not Listed
● Xylenol	1300-71-6	10% TO 12%	Not Listed
● Naphthalene	91-20-3	0.3% TO 1%	Not Listed
● Phenol	108-95-2	0.01% TO 2.5%	Not Listed
● Phenol, o-methoxy-	90-05-1	2% TO 5%	Not Listed
● Phenol, o-ethyl-	90-00-6	7% TO 9%	Not Listed

United States - Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

● Pyrocatechol	120-80-9	0.01% TO 1%
● o-Cresol	95-48-7	18% TO 22%
● p-Cresol	106-44-5	17% TO 23%
● m-Cresol	108-39-4	29% TO 35%
● Xylenol	1300-71-6	10% TO 12%
● Naphthalene	91-20-3	0.3% TO 1%

- Phenol 108-95-2 0.01% TO 2.5%
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

- Pyrocatechol 120-80-9 0.01% TO 1% Not Listed
- o-Cresol 95-48-7 18% TO 22% Not Listed
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% Not Listed
- Phenol 108-95-2 0.01% TO 2.5% Not Listed
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

United States - Rhode Island

Labor

- Pyrocatechol 120-80-9 0.01% TO 1% Toxic
- o-Cresol 95-48-7 18% TO 22% Not Listed
- p-Cresol 106-44-5 17% TO 23% Not Listed
- m-Cresol 108-39-4 29% TO 35% Not Listed
- Xylenol 1300-71-6 10% TO 12% Not Listed
- Naphthalene 91-20-3 0.3% TO 1% Toxic; Flammable
- Phenol 108-95-2 0.01% TO 2.5% Toxic; Flammable
- Phenol, o-methoxy- 90-05-1 2% TO 5% Not Listed
- Phenol, o-ethyl- 90-00-6 7% TO 9% Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Relevant Phrases (code & full text)

- H302 - Harmful if swallowed
- H312 - Harmful in contact with skin
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H331 - Toxic if inhaled
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H411 - Toxic to aquatic life with long lasting effects
- R21/22 - Harmful in contact with skin and if swallowed.
- R22 - Harmful if swallowed.
- R23/24/25 - Toxic by inhalation, in contact with skin and if swallowed.
- R36/38 - Irritating to eyes and skin.
- R48/20/21/22 - Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
- R50 - Very toxic to aquatic organisms.
- R51 - Toxic to aquatic organisms.
- R53 - May cause long-term adverse effects in the aquatic environment.

Last Revision Date

- 14/March/2012

Preparation Date

- 14/March/2012

Disclaimer/Statement of Liability

- The information contained in this Material Safety Data Sheet (MSDS) is believed to be correct since it was obtained from sources we believe are reliable. However no representation, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications, hazards connected with the use of the material, or the results to be obtained from the use thereof. User assumes all risks and liability of any use, processing or handling of any material, variations in methods, conditions and equipment used to store, handle, or process the material and hazards connected with the use of the material are solely the responsibility of the user and remain at his sole discretion. Compliance with all applicable federal, state, and local laws and regulations remains the responsibility of the user, and the user has the responsibility to provide a safe work place to examine all aspects of its operation and to determine if or where precautions, in addition to those described herein, are required.

Key to abbreviations

NDA = No data available
