MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	**PYROCATECHOL**
Version #	02
Revision date	08-29-2011
CAS #	120-80-9
Product Codes	**J.T.Baker: U672** **Macron: 11009, 11010**
Synonym(s)	Catechol; 1,2-benzenediol; 1,2-dihydroxy benzene
Manufacturer	Avantor Performance Materials, Inc.
Address	3477 Corporate Parkway Suite #200 Center Valley, PA 18034 US
Customer Service	855-282-6867
24 Hour Emergency	908-859-2151
Chemtrec	800-424-9300

2. Hazards Identification

Emergency overview	DANGER Harmful if absorbed through skin or swallowed. Causes skin and eye burns. Irritating to respiratory system. Possible cancer hazard - may cause cancer based on animal data. May cause central nervous system effects.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Eyes	Causes eye burns. Eye may become red, tear, and become painful. Risk of serious damage to eyes. Do not get this material in contact with eyes.
Skin	Causes skin burns. Harmful if absorbed through skin. Allergic reactions are possible. Do not get this material in contact with skin.
Inhalation	Dust irritates the respiratory system, and may cause coughing and difficulties in breathing. May cause central nervous system effects. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Prolonged or repeated overexposure may cause central nervous system, kidney, liver, and lung damage. Do not breathe dust.
Ingestion	Harmful if swallowed. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. May cause dizziness, incoordination, headache, nausea, and vomiting. Diarrhoea. This material may produce methemoglobin which, in sufficient concentration, causes cyanosis, a blue-gray discoloration of the skin and lips caused by a reduced ability of the blood to carry oxygen. Changes in blood picture. Large exposures may be fatal. Do not ingest.
Target organs	Eyes. Skin. Respiratory system, lungs. Kidneys. Liver. Central nervous system. Blood and/or blood-forming organs.
Chronic effects	Liver and/or kidney damage. Risk of damage to blood system. Cyanosis (blue tissue condition, nails, lips, and/or skin). Possible human cancer hazard.
Signs and symptoms	Contact with this material will cause burns to the skin, eyes and mucous membranes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Sensitization. Prolonged exposure may cause chronic effects.
Potential environmental effects	May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
PYROCATECHOL	120-80-9	90 - 100

4. First Aid Measures

First aid procedures

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Skin contact
Take off immediately all contaminated clothing. Immediately flush skin with plenty of water. Get medical attention immediately. Wash clothing separately before reuse.

Inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.

Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to physician
In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General advice
Immediate medical attention is required. Take off contaminated clothing and shoes immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire Fighting Measures

Flammable properties
Not flammable by OSHA criteria. Contact with strong oxidizers may cause fire. Container may explode in heat of fire.

Extinguishing media

Suitable extinguishing media
Water. Carbon dioxide (CO2). Dry chemical powder.

Protection of firefighters

Protective equipment and precautions for firefighters
Move containers from fire area if you can do so without risk. In the event of fire, cool tanks with water spray. Water runoff can cause environmental damage.

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Specific methods
Cool containers exposed to flames with water until well after the fire is out.

6. Accidental Release Measures

Personal precautions
Ensure adequate ventilation. Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not get this material in contact with skin or eyes. Do not inhale vapor, fumes, or dust from the spilled material.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods for containment
ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up
Use only non-sparking tools. Should not be released into the environment. Small Dry Spills: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area. Avoid dust formation. Following product recovery, flush area with water. For waste disposal, see section 13 of the MSDS.

Other information
Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling Do not get in eyes, on skin, on clothing. Do not breathe dust or vapor. Minimize dust generation and accumulation. Do not use in areas without adequate ventilation. Wear personal protective equipment. When using, do not eat, drink or smoke. Wash thoroughly after handling. Avoid prolonged exposure.

Storage Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames, and high temperatures. Protect from sunlight. Keep container tightly closed. Keep away from food and drinking water. Store in accordance with local/regional/national/international regulation.

8. Exposure Controls / Personal Protection

ACGIH

Material	Type	Value
PYROCATECHOL (120-80-9)	TWA	5.0000 ppm

Engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye / face protection Chemical goggles and face shield are recommended.

Skin protection Wear appropriate chemical resistant clothing. Chemical resistant gloves.

Respiratory protection Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

General hygeine considerations Provide eyewash station and safety shower. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance Crystals.

Color Not available.

Odor Phenolic.

Odor threshold Not available.

Physical state Solid.

Form Solid.

pH Not available.

Melting point 221 °F (105 °C)

Freezing point 221 °F (105 °C)

Boiling point 474.8 °F (245.5 °C) 101.325 kPa

Flash point 260.6 °F (127 °C) Closed Cup

Evaporation rate Not available.

Flammability limits in air, upper, % by volume Not available.

Flammability limits in air, lower, % by volume Not available.

Vapor pressure 0.004 kPa at 20°C at 20°C

Vapor density 3.79

Specific gravity 1.344

Relative density Not available.

Solubility (water)	440 g/l
Partition coefficient (n-octanol/water)	0.88
Auto-ignition temperature	950 °F (510 °C)
Decomposition temperature	Not available.
Molecular weight	110.11 g/mol
Molecular formula	C6-H6-O2

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point.
Incompatible materials	Strong oxidizing agents. Strong acids. Strong bases.
Hazardous decomposition products	Carbon oxides. Phenolic fumes may be released upon decomposition.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product	Test Results
PYROCATECHOL (120-80-9)	Acute Dermal LD50 Rabbit: 800 mg/kg
	Acute Oral LD50 Rat: 300 mg/kg

* Estimates for product may be based on additional component data not shown.

Sensitization

US ACGIH Threshold Limit Values: Skin designation

PYROCATECHOL (CAS 120-80-9) — Can be absorbed through the skin.

Acute effects	Harmful if absorbed through skin or swallowed.
Local effects	Causes skin and eye burns. Irritating to respiratory system. Components of the product may be absorbed into the body through the skin. Allergic reactions are possible.
Chronic effects	Hazardous by OSHA criteria. Danger of serious damage to health by prolonged exposure. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged or repeated exposure may cause lung injury.
Carcinogenicity	Possible cancer hazard - may cause cancer based on animal data.

ACGIH Carcinogens

PYROCATECHOL (CAS 120-80-9) — A3 Confirmed animal carcinogen with unknown relevance to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

PYROCATECHOL (CAS 120-80-9) — 2B Possibly carcinogenic to humans.

Epidemiology	No epidemiological data is available for this product.
Neurological effects	Hazardous by OSHA criteria.
Further information	Symptoms may be delayed.

12. Ecological Information

Ecotoxicological data

Product	Test Results
PYROCATECHOL (120-80-9)	LC50 Fathead minnow (Pimephales promelas): 3.5 mg/l 96.00 hours

* Estimates for product may be based on additional component data not shown.

Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Aquatic toxicity	Toxic to aquatic organisms.
Persistence and degradability	This material is readily biodegraded and is not likely to bioconcentrate.
Partition coefficient (n-octanol/water)	0.88

13. Disposal Considerations

Disposal instructions	Dispose of this material and its container at hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

Basic shipping requirements:

UN number	UN2811
Proper shipping name	Toxic solids, organic, n.o.s. (PYROCATECHOL RQ = 100 LBS)
Hazard class	6.1
Packing group	III

Additional information:

Special provisions	IB8, IP3, T1, TP33

Basic shipping requirements:

Labels required	6.1

Additional information:

Packaging exceptions	153
Packaging non bulk	213
Packaging bulk	240
Reportable quantity	100
ERG number	154

IATA

Basic shipping requirements:

UN number	2811
Proper shipping name	Toxic solid, organic, n.o.s. (PYROCATECHOL)
Hazard class	6.1
Packing group	III

Additional information:

ERG code	6L

IMDG

Basic shipping requirements:

UN number	2811
Proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. (PYROCATECHOL)
Hazard class	6.1
Packing group	III

DOT

IATA

IMDG

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

US TSCA Section 12(b) Export Notification: Export Notification requirement/De minimis concentration

PYROCATECHOL (CAS 120-80-9)	0.1 % One-Time Export Notification only.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

PYROCATECHOL (CAS 120-80-9)	0.1 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

PYROCATECHOL (CAS 120-80-9)	Listed.

CERCLA (Superfund) reportable quantity

PYROCATECHOL: 100.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 311 hazardous chemical

Yes

Clean Air Act (CAA)

HAPS list

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

PYROCATECHOL (CAS 120-80-9)	Listed.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

PYROCATECHOL (CAS 120-80-9)	Listed: July 15, 2003 Carcinogenic.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

PYROCATECHOL (CAS 120-80-9)	500 LBS

US - Pennsylvania RTK - Hazardous Substances: Listed substance

PYROCATECHOL (CAS 120-80-9)	Listed.

Saf-T-Data

Health: 3 - Severe (Poison)
Flammability: 1 - Slight
Reactivity: 1 - Slight
Contact: 3 - Severe (Life)
Lab Protective Equip: D - GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: B - Blue (Health)

16. Labeling Info

Label Hazard Warning

DANGER

Harmful if absorbed through skin or swallowed. Causes skin and eye burns. Irritating to respiratory system. Possible cancer hazard - may cause cancer based on animal data. May cause central nervous system effects.

Label Precautions

Do not get in eyes, on skin, or on clothing. Do not breathe dust/fume/gas/mist/vapors/spray. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Label First Aid

Immediately flush eyes with plenty of water for at least 15 minutes. Immediately flush skin with plenty of water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Oxygen or artificial respiration if needed. Get medical attention immediately. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center.

17. Other Information

NFPA ratings

Health: 3
Flammability: 1
Instability: 0

Disclaimer

THE INFORMATION PRESENTED IN THIS MATERIAL SAFETY DATA SHEET (MSDS/SDS) WAS PREPARED BY TECHNICAL PERSONNEL BASED ON DATA THAT THEY BELIEVE IN THEIR GOOD FAITH JUDGMENT IS ACCURATE. HOWEVER, THE INFORMATION PROVIDED HEREIN IS PROVIDED “AS IS,” AND AVANTOR PERFORMANCE MATERIALS MAKES AND GIVES NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, AND EXPRESSLY DISCLAIMS ALL WARRANTIES REGARDING SUCH INFORMATION AND THE PRODUCT TO WHICH IT RELATES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION, WARRANTIES OF ACCURACY, COMPLETENESS, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY, STABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. THIS MSDS/SDS IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PROPERLY TRAINED PERSON USING THIS PRODUCT, AND IS NOT INTENDED TO BE COMPREHENSIVE AS TO THE MANNER AND CONDITIONS OF USE, HANDLING, STORAGE, OR DISPOSAL OF THE PRODUCT. INDIVIDUALS RECEIVING THIS MSDS/SDS MUST ALWAYS EXERCISE THEIR OWN INDEPENDENT JUDGMENT IN DETERMINING THE APPROPRIATENESS OF SUCH ISSUES. ACCORDINGLY, AVANTOR PERFORMANCE MATERIALS ASSUMES NO LIABILITY WHATSOEVER FOR THE USE OF OR RELIANCE UPON THIS INFORMATION. NO SUGGESTIONS FOR USE ARE INTENDED AS, AND NOTHING HEREIN SHALL BE CONSTRUED AS, A RECOMMENDATION TO INFRINGE ANY EXISTING PATENTS OR TO VIOLATE ANY FEDERAL, STATE, LOCAL, OR FOREIGN LAWS. AVANTOR PERFORMANCE MATERIALS REMINDS YOU THAT IT IS YOUR LEGAL DUTY TO MAKE ALL INFORMATION IN THIS MSDS/SDS AVAILABLE TO YOUR EMPLOYEES.

Issue date

08-29-2011

This data sheet contains changes from the previous version in section(s):	Exposure Controls / Personal Protection: Respiratory protection