SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

1,2-Dihydroxybenzene > 99 % (catechol)

REACH Registration Number:	01-2119515921-43-XXXX
CAS No:	120-80-9
Index No:	604-016-00-4
EC No:	204-427-5

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

Use of the substance/mixture

Laboratory chemical
Industrial uses: Uses of substances as such or in preparations at industrial sites
Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name:	AnalytiChem GmbH		
Street:	Stempelstraße 6		
Place:	D-47167 Duisburg		
Telephone:	0203/5194-0	Telefax:	0203/5194-290
E-mail:	info@analytichem.de		
Contact person:	Abteilung Produktsicherheit	Telephone:	0203/5194-107/117
E-mail:	produktsicherheit@analytichem.de		
Internet:	www.analytichem.de		
Responsible Department:	Abteilung Produktsicherheit		

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

No data available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Carc. 1B; H350
Muta. 2; H341
Acute Tox. 3; H311
Acute Tox. 3; H301
Acute Tox. 4; H332
Skin Irrit. 2; H315
Eye Dam. 1; H318
Skin Sens. 1; H317

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:

Hazard statements

H301+H311	Toxic if swallowed or in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.

Precautionary statements

P201	Obtain special instructions before use.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing 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.
P308+P313	IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: C6H6O2

Molecular weight: 110,11 g/mol

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
120-80-9	1,2-dihydroxybenzene			100 %
	204-427-5	604-016-00-4	01-2119515921-43-XXXX	
	Carc. 1B, Muta. 2, Acute Tox. 3, Acute Tox. 3, Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1; H350 H341 H311 H301 H332 H315 H318 H317			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
120-80-9	204-427-5	1,2-dihydroxybenzene	100 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); dermal: ATE 600 mg/kg; oral: ATE 300 mg/kg		

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Self-protection of the first aider

After inhalation

Provide fresh air.
Call a physician immediately.

After contact with skin

Wash immediately with: Water
Take off immediately all contaminated clothing and wash it before reuse.
Call a physician immediately.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.
Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Rinse mouth immediately and drink plenty of water.
Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Irritant
Cough
Dyspnoea
Pneumonia

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible solids
Danger of dust explosion.
Hazardous combustion products
In case of warming: Vapours are heavier than air, spread along floors and form explosive mixtures with air.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.
Avoid contact with skin, eyes and clothes.

Additional information

Suppress gases/vapours/mists with water spray jet.
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Provide adequate ventilation.
Use personal protection equipment.
Avoid contact with skin, eyes and clothes.
Remove persons to safety.
Emergency procedures

Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.
Prevent spread over a wide area (e.g. by containment or oil barriers).
Collect in closed and suitable containers for disposal.
Take up carefully when dry. Take up dust-free and set down dust-free.

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used.
Avoid dust formation.
Do not breathe dust.
Read label before use.
Use extractor hood (laboratory).

Advice on protection against fire and explosion

No special fire protection measures are necessary.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.
Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Further information on handling

Take off contaminated clothing. Draw up and observe skin protection programme.
Wash hands and face before breaks and after work and take a shower if necessary.
Take off immediately all contaminated clothing and wash it before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Store in a well-ventilated place.
Store in a dry place.
Store in a place accessible by authorized persons only.

Further information on storage conditions

storage temperature < +30°C
Protect against:
Light
Air

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
120-80-9	Pyrocatechol	5	20		TWA (8 h)	

DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
120-80-9	1,2-dihydroxybenzene		
Worker DNEL, long-term	inhalation	systemic	1 mg/m³
Worker DNEL, acute	inhalation	systemic	85 mg/m³
Worker DNEL, acute	dermal	systemic	2,5 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	0,3 mg/m³
Consumer DNEL, acute	inhalation	systemic	63 mg/m³
Consumer DNEL, acute	dermal	systemic	1 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	0,1 mg/kg bw/day
Consumer DNEL, acute	oral	systemic	16 mg/kg bw/day

PNEC values

CAS No	Substance
Environmental compartment	Value
120-80-9	1,2-dihydroxybenzene
Freshwater	0,0011 mg/l
Freshwater (intermittent releases)	0,011 mg/l
Marine water	0,00011 mg/l
Freshwater sediment	0,017 mg/kg
Marine sediment	0,002 mg/kg
Micro-organisms in sewage treatment plants (STP)	1,958 mg/l
Soil	0,003 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

Provide adequate ventilation as well as local exhaustion at critical locations.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is

recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact
Trade name/designation KCL 741 Dermatril® L
Recommended material: NBR (Nitrile rubber) 0,11 mm
Wearing time with permanent contact: > 480 min

By short-term hand contact
Trade name/designation KCL 741 Dermatril® L
Recommended material: NBR (Nitrile rubber) 0,11 mm
Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Wear suitable protective clothing.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.
Filtering device with filter or ventilator filtering device of type: P2

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	solid	
Colour:	colourless	
Odour:	characteristic	
Odour threshold:	not determined	
Melting point/freezing point:		103-105 °C
Boiling point or initial boiling point and boiling range:		245,5 °C
Flammability:		not determined
Lower explosion limits:		1,97 vol. %
Upper explosion limits:		not determined
Flash point:		127 °C
Auto-ignition temperature:		not determined
Decomposition temperature:		not determined
pH-Value (at 20 °C):		6 (100 g/l)
Viscosity / kinematic:		not determined
Water solubility: (at 20 °C)		430 g/L
Solubility in other solvents not determined		
Dissolution rate:		not determined

Partition coefficient n-octanol/water:	not determined
Dispersion stability:	not determined
Vapour pressure: (at 118 °C)	13 hPa
Vapour pressure:	not determined
Density:	not determined
Relative density:	not determined
Bulk density:	1,37 kg/m³
Relative vapour density:	not determined
Particle characteristics:	not determined

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

Danger of dust explosion.

Sustaining combustion:	No data available

Self-ignition temperature

Solid:	not determined
Gas:	not applicable

Oxidizing properties

not determined

Other safety characteristics

Evaporation rate:	not determined
Solvent separation test:	not determined
Solvent content:	not determined
Solid content:	100%
Sublimation point:	not determined
Softening point:	not determined
Pour point:	not determined
not determined:	
Viscosity / dynamic:	not determined
Flow time:	not determined

Further Information

not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

Danger of dust explosion.

In case of warming: Vapours are heavier than air, spread along floors and form explosive mixtures with air.

10.2. Chemical stability

Protect against:

Light

Air

10.3. Possibility of hazardous reactions

Oxidising agent

Nitric acid

Alkali (lye)

10.4. Conditions to avoid

Light

Air

Heat

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition products

In case of fire may be liberated:
SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicocinetics, metabolism and distribution

No data available

Acute toxicity

Toxic if swallowed.
Toxic in contact with skin.
Harmful if inhaled.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
120-80-9	1,2-dihydroxybenzene				
	oral	ATE 300 mg/kg			
	dermal	ATE 600 mg/kg			
	inhalation vapour	ATE 11 mg/l			
	inhalation dust/mist	ATE 1,5 mg/l			

Irritation and corrosivity

Causes skin irritation.
Causes serious eye damage.

Sensitising effects

May cause an allergic skin reaction. (1,2-dihydroxybenzene)

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of causing genetic defects. (1,2-dihydroxybenzene)
May cause cancer. (1,2-dihydroxybenzene)
Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards

Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

Other information

Cyanosis (blue coloured blood)
Methaemoglobinaemia

Further information

Irritant
Cough
Dyspnoea
Pneumonia

SECTION 12: Ecological information

12.1. Toxicity

Based on available data, the classification criteria are not met.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
120-80-9	1,2-dihydroxybenzene						
	Acute fish toxicity	LC50	9,22 mg/l	96 h	Pimephales promelas	Center for Lake Superior Environmental s	OECD Guideline 203
	Acute algae toxicity	ErC50	22 mg/l	96 h	Chlorella vulgaris	Polish Journal of Environmental Studies,	OECD Guideline 201

12.2. Persistence and degradability

91 %; 19 d
OECD 301E
Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
120-80-9	1,2-dihydroxybenzene	0,88

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

No data available

Further information

Discharge into the environment must be avoided.
Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Do not empty into drains.
Send to a hazardous waste incinerator facility under observation of official regulations.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 2811
14.2. UN proper shipping name:	TOXIC SOLID, ORGANIC, N.O.S. (1,2-dihydroxybenzene)
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Classification code:	T2
Special Provisions:	274 614
Limited quantity:	5 kg
Excepted quantity:	E1
Transport category:	2
Hazard No:	60
Tunnel restriction code:	E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 2811
14.2. UN proper shipping name:	TOXIC SOLID, ORGANIC, N.O.S. (1,2-dihydroxybenzene)
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Classification code:	T2
Special Provisions:	274 614 802
Limited quantity:	5 kg
Excepted quantity:	E1

Marine transport (IMDG)

14.1. UN number or ID number:	UN 2811
14.2. UN proper shipping name:	TOXIC SOLID, ORGANIC, N.O.S. (1,2-dihydroxybenzene)
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Special Provisions:	223, 274
Limited quantity:	5 kg
Excepted quantity:	E1
EmS:	F-A, S-A

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 2811
14.2. UN proper shipping name:	TOXIC SOLID, ORGANIC, N.O.S. (1,2-dihydroxybenzene)
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Special Provisions:	A3 A5
Limited quantity Passenger:	10 kg
Passenger LQ:	Y645

Excepted quantity:	E1	
IATA-packing instructions - Passenger:		670
IATA-max. quantity - Passenger:		100 kg
IATA-packing instructions - Cargo:		677
IATA-max. quantity - Cargo:		200 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 28

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe employment restrictions for women of child-bearing age.

Water hazard class (D): 2 - obviously hazardous to water

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 9,11,12.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
Acute Tox: Acute toxicity
Skin Irrit: Skin irritation
Eye Dam: Eye damage
Skin Sens: Skin sensitisation
Muta: Germ cell mutagenicity
Carc: Carcinogenicity

Relevant H and EUH statements (number and full text)

H301	Toxic if swallowed.
H301+H311	Toxic if swallowed or in contact with skin.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.