

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 06/11/2009

Reviewed on 06/11/2009

**1 Identification of substance:****Product details:****Product name:** Catechol**Stock number:**

A10164

L03533

**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com

**Information Department:** Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

**2 Composition/Data on components:****Chemical characterization:****Description: (CAS#)**

Catechol (CAS# 120-80-9), 100%

**Identification number(s):****EINECS Number:** 204-427-5**Index number:** 604-016-00-4**3 Hazards identification****Hazard description:**

Xn Harmful

**Information pertaining to particular dangers for man and environment**

R 21/22 Harmful in contact with skin and if swallowed.

R 36/38 Irritating to eyes and skin.

**Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	2
FIRE	1
REACTIVITY	1

Health (acute effects) = 2

Flammability = 1

Reactivity = 1

**GHS label elements**

Warning

3.1/4 - Harmful if swallowed.

3.1/4 - Harmful in contact with skin.

3.2/2 - Causes skin irritation.

3.3/2A - Causes serious eye irritation.

**Prevention:**

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN: Wash with plenty of soap and water.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Call a POISON CENTER or doctor/physician if you feel unwell.

Specific treatment (see label).

Specific measures (see label).

Rinse mouth.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Take off contaminated clothing and wash before reuse.

(Contd. on page 2)

USA

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 06/11/2009

Reviewed on 06/11/2009

**Product name:** Catechol

(Contd. of page 1)

Wash contaminated clothing before reuse.

**Disposal:**

Dispose of contents/container in accordance with local/regional/national/international regulations.

**4 First aid measures****After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

**After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing** Seek immediate medical advice.**5 Fire fighting measures****Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards caused by the material, its products of combustion or resulting gases:**

In case of fire, the following can be released:

Carbon monoxide (CO)

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

**6 Accidental release measures****Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

**Measures for environmental protection:**

Do not allow material to be released to the environment without proper governmental permits.

**Measures for cleaning/collecting:**

Dispose contaminated material as waste according to item 13.

**Additional information:**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage****Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Prevent formation of dust.

**Information about protection against explosions and fires:** No special measures required.**Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:**

Do not store together with oxidizing and acidic materials.

Store away from air.

Keep away from heat and direct sunlight.

**Further information about storage conditions:**

Avoid contact with air/oxygen.

Protect from exposure to light.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**8 Exposure controls and personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

(Contd. on page 3)

USA

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 06/11/2009

Reviewed on 06/11/2009

**Product name:** Catechol

(Contd. of page 2)

**Components with limit values that require monitoring at the workplace:**

Catechol	ppm
ACGIH TLV	5; A3
Belgium TWA	5
Finland TWA	5; 10-STEL
France TWA	5
Ireland TWA	5
Netherlands TWA	5
Switzerland TWA	5
United Kingdom TWA	5

**Components with limit values that require monitoring at the workplace:****Additional information:** No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

**Breathing equipment:** Use suitable respirator when high concentrations are present.**Protection of hands:** Impervious gloves**Eye protection:** Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

<b>Form:</b>	Crystalline
<b>Color:</b>	White Brown
<b>Odor:</b>	Light

**Change in condition**

<b>Melting point/Melting range:</b>	104-106°C (219-223°F)
<b>Boiling point/Boiling range:</b>	245°C (473°F)
<b>Sublimation temperature / start:</b>	Not determined

**Flash point:** 137°C (279°F)**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:**

<b>Lower:</b>	1.97 Vol %
<b>Upper:</b>	Not determined

**Vapor pressure at 118°C (244°F):** 13 hPa (10 mm Hg)**Density at 20°C (68°F):** 1.341 g/cm<sup>3</sup>**Solubility in / Miscibility with****Water:** Soluble**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

**Materials to be avoided:**

Acids

Oxidizing agents

Air

Light

Bases

Acid chlorides

Acid anhydrides

**Dangerous reactions** Reacts with acids**Dangerous products of decomposition:** Carbon monoxide and carbon dioxide

(Contd. on page 4)

USA

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 06/11/2009

Reviewed on 06/11/2009

**Product name:** Catechol

(Contd. of page 3)

**Additional information:** Turns brown on exposure to light.**11 Toxicological information****Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	100 mg/kg (cat)
		130 mg/kg (dog)
		210 mg/kg (guinea pig)
		240 mg/kg (mam)
		260 mg/kg (mouse)
		260 mg/kg (rat)
Dermal	LD50	800 mg/kg (rabbit)

**Primary irritant effect:****on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** Sensitization possible through skin contact.**Other information (about experimental toxicology):**

Mutagenic effects have been observed on tests with laboratory animals.

Mutagenic effects have been observed on tests with bacteria.

Mutagenic effects have been observed with humans.

Reproductive effects have been observed on tests with laboratory animals.

**Subacute to chronic toxicity:**

Ingestion of catechol may cause convulsions and respiratory failure. May cause blood and CNS disorders. May cause allergic skin reactions. Reproductive effects in laboratory animals and human mutagenic effects have been reported.

**Additional toxicological information:**

Danger through skin absorption.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.

ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

**12 Ecological information:****General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

**13 Disposal considerations****Product:****Recommendation:** Consult state, local or national regulations to ensure proper disposal.**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.**14 Transport information****DOT regulations:****Hazard class:**

6.1

**Identification number:**

UN2811

**Packing group:**

III

**Hazardous substance:**

100 lbs, 45.4 kg

**Proper shipping name (technical name):** TOXIC SOLID, ORGANIC, N.O.S. (catechol)

(Contd. on page 5)

USA

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 06/11/2009

Reviewed on 06/11/2009

Product name: Catechol

(Contd. of page 4)

Label 6.1

Land transport ADR/RID (cross-border)



ADR/RID class: 6.1 (T2) Toxic substances  
 Danger code (Kemler): 60  
 UN-Number: 2811  
 Packaging group: III  
 Description of goods: 2811 TOXIC SOLID, ORGANIC, N.O.S. (catechol)

Maritime transport IMDG:



IMDG Class: 6.1  
 UN Number: 2811  
 Label: 6.1  
 Packaging group: III  
 Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (catechol)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 6.1  
 UN/ID Number: 2811  
 Label: 6.1  
 Packaging group: III  
 Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (catechol)

UN "Model Regulation": UN2811, TOXIC SOLID, ORGANIC, N.O.S., 6.1, III

**15 Regulations**

Product related hazard informations:

Hazard symbols:

Xn Harmful

Risk phrases:

21/22 Harmful in contact with skin and if swallowed.

36/38 Irritating to eyes and skin.

Safety phrases:

22 Do not breathe dust.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

37 Wear suitable gloves.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

This substance is subject to a Significant New Use Rule (SNUR) promulgated under Section 5(a) (2) of the Toxic Substances Control Act (TSCA). See 40 CFR 721. This product is being sold for research and development use only for the significant new use listed.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**16 Other information:**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure

(Contd. on page 6)

**Material Safety Data Sheet**

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Reviewed on 06/11/2009

**Product name: Catechol**

(Contd. of page 5)

proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing MSDS:** Health, Safety and Environmental Department.

**Contact:** Zachariah Holt

**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)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EMNECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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