

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.2
Creation Date: July 15, 2019
Revision Date: August 08, 2025

SECTION 1: Identification

1.1 GHS Product identifier

Product name o-Anisidine

1.2 Other means of identification

Product number CAZO111421

Other names Benzenamine, 2-methoxy-; o-Methoxyphenylamine; 1-amino-2-methoxy-benzene

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F, Building B, No. 179 BASIGO, Guangpu Rd East, Huangpu Dist, Guangzhou

Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175

Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Category 3, Oral
Acute toxicity - Category 3, Dermal
Acute toxicity - Category 3, Inhalation
Germ cell mutagenicity, Category 2
Carcinogenicity, Category 1B

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H301 Toxic if swallowed
H311 Toxic in contact with skin
H331 Toxic if inhaled
H341 Suspected of causing genetic defects
H350 May cause cancer

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P203 Obtain, read and follow all safety instructions before use.

Response	P301+P316 IF SWALLOWED: Get emergency medical help immediately. P321 Specific treatment (see ... on this label). P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P316 Get emergency medical help immediately. P361+P364 Take off immediately all contaminated clothing and wash it before reuse. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P318 IF exposed or concerned, get medical advice.
Storage	P405 Store locked up. P403+P233 Store in a well-ventilated place. Keep container tightly closed.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
o-Anisidine	o-anisidine	90-04-0	201-963-1	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Administration of oxygen may be needed. Refer immediately for medical attention. See Notes.

Following skin contact

Administration of oxygen may be needed. Remove contaminated clothes. Rinse and then wash skin with water and soap. See Notes. Refer immediately for medical attention.

Following eye contact

Rinse with plenty of water (remove contact lenses if easily possible).

Following ingestion

Administration of oxygen may be needed. Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer immediately for medical attention.

4.2 Most important symptoms/effects, acute and delayed

Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact Symptoms: Headache, dizziness; cyanosis; red blood cell Heinz bodies; [potential occupational carcinogen] Target Organs: Blood, kidneys, liver, cardiovascular system, central nervous system (NIOSH, 2016)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Aniline and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use dry chemical, carbon dioxide, or alcohol foam extinguishers. Vapors are heavier than air and will collect in low areas. Vapors may travel long distances to ignition sources and flashback. Vapors in confined areas may explode when exposed to fire. Storage containers and parts of containers may rocket great distances, in many directions. If material or contaminated runoff enters waterways, notify downstream users of potentially contaminated waters. Notify local health and fire officials and pollution control agencies. From a secure, explosion-proof location, use water spray to cool exposed containers. If cooling streams are ineffective (venting sound increases in volume and pitch, tank discolors or shows any signs of deforming), withdraw immediately to a secure position ... The only respirators recommended for fire fighting are self-contained breathing apparatuses that have full facepieces and are operated in a pressure-demand or other positive-pressure mode. Anisidines

5.2 Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

5.3 Special protective actions for fire-fighters

Use water spray, foam, powder, carbon dioxide.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Do NOT wash away into sewer. Collect leaking liquid in sealable containers. Absorb liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Do NOT wash away into sewer. Collect leaking liquid in sealable containers. Absorb liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Spill handling: Evacuate persons not wearing protective equipment from area of spill or leak until clean-up is complete. Remove all ignition sources. Collect powdered material in the most convenient and safe manner and deposit in sealed containers. Ventilate area of spill or leak. Cover with sand and soda ash (9:1). After mixing, collect material in the most convenient and safe manner and deposit in sealed containers. Keep o-anisidine out of confined spaces, such as a sewer, because of the potential for an explosion, unless the sewer is designed to prevent the buildup of explosive concentrations. If material or contaminated runoff enters waterways, notify downstream users of potentially contaminated waters. It may be necessary to contain and dispose of this chemical as a hazardous waste. Contact your Department of Environmental Protection or your regional office of the federal EPA for specific recommendations. Anisidines

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Store only in original container. Keep in a well-ventilated room. Separated from strong oxidants, acids, chloroformates and food and feedstuffs. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing. Store in tightly closed containers in a cool, well ventilated area. Protect against sunlight and strong oxidizers. Metal containers involving the transfer of this chemical should be grounded and bonded. Where possible, automatically pump liquid from drums or other storage containers to process containers. Drums must be equipped with self-closing valves, pressure vacuum bungs, and flame arresters. Use only nonsparking tools and equipment, especially when opening and closing containers of this chemical. Sources of ignition, such as smoking and open flames, are prohibited where this chemical is used, handled, or stored in a manner that could create a potential fire or explosion hazard. A regulated, marked area should be established where this chemical is handled, used, or stored ... Anisidines

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 0.5 mg/m³, as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued. MAK: skin absorption (H); carcinogen category: 2

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state

PHYSICAL DESCRIPTION: Clear, yellowish to reddish or brown liquid with an amine (fishy) odor. (NTP, 1992)

Colour

Yellowish liquid; becomes brownish on exposure to air

Odour

Amine-like odor

Melting point/freezing point

5 °C

Boiling point or initial boiling point and boiling range

224 to 225 °C

Flammability	Class IIIB Combustible Liquid: Fl.P. at or above 200°F.
Lower and upper explosion limit/flammability limit	no data available
Flash point	107 °C
Auto-ignition temperature	415 deg C
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	Dynamic viscosity: 2.211 mPa-s at 55 deg C
Solubility	Partially miscible with water
Partition coefficient n-octanol/water	log Kow = 1.18
Vapour pressure	less than 0.1 mm Hg at 68° F ; 1 mm Hg at 141.8° F (NTP, 1992)
Density and/or relative density	1.098 (15 °C)
Relative vapour density	4.25 (NTP, 1992) (Relative to Air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

NIOSH considers o-anisidine to be a potential occupational carcinogen. [50 mg/cu m]
Decomposes on burning. This produces toxic fumes including nitrogen oxides, carbon monoxide and carbon dioxide. The solution in water is a weak base. Reacts with acids, chloroformates and strong oxidants. This generates fire and explosion hazard. Attacks some coatings, some forms of plastic and rubber.

10.2 Chemical stability

Heat may contribute to instability.

10.3 Possibility of hazardous reactions

Combustible. The vapour is heavier than air and may travel along the ground; distant ignition possible. O-ANISIDINE is sensitive to heat. It is also sensitive to exposure to light. This chemical is incompatible with strong oxidizers. It is also incompatible with acids, acid chlorides, acid anhydrides and chloroformates. It will attack some forms of plastics, rubber and coatings. (NTP, 1992).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Incompatible with strong oxidizers, with risk of fire or explosions. Attacks some coatings and some forms of plastic and rubber. Anisidines

10.6 Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /nitroxides/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat (Wistar) oral 1,890 mg/kg bw
- Inhalation: LC50 Rat (Wistar) inhalation > 3.87 mg/L for 4 hr
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Evaluation: There is inadequate evidence in humans for the carcinogenicity of ortho-anisidine. There is sufficient evidence in experimental animals for the carcinogenicity of ortho-anisidine. Overall evaluation: ortho-Anisidine is possibly carcinogenic to humans (Group 2B).

Reproductive toxicity

No information is available on the reproductive or developmental effects of o-anisidine in humans or animals.

STOT-single exposure

The substance may cause effects on the blood. This may result in the formation of methaemoglobin. See Notes. Exposure could cause haemolysis. This may result in haemolytic anaemia. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

The substance may have effects on the blood. This may result in the formation of methaemoglobin and anaemia. This substance is possibly carcinogenic to humans.

Aspiration hazard

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: Brachydanio rerio (zebrafish); Conditions: static; Concentration: >100 mg/L for 96 hr
- Toxicity to daphnia and other aquatic invertebrates: LC50; Species: Daphnia magna (water flea); Conditions: static; Concentration: 12 mg/L for 48 hr
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: o-Anisidine, present at 100 ppm, reached 81.7% theoretical BOD (NH₃ end product) in two weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(1); it reached 40 to 69.1% of its theoretical BOD (NO₂ end product) in 2 weeks using an activated sludge inoculum at 30 mg/L(1,2). At high concentrations, o-anisidine has been shown to be toxic to microorganisms and biodegrades at a much slower rate(3,4). 20 ug/L o-anisidine, inoculated with a mixed culture of soil microorganisms in an aqueous mineral salts medium, was found to persist >64 days as measured by UV absorbency(5). 2% of the theoretical BOD was achieved for o-anisidine at 20 ppm in sea water from Akashi Beach, Japan. These biodegradation data indicate that o-anisidine will biodegrade rapidly under aerobic conditions(SRC) except when microorganisms are killed by high concentrations of the compound(2,3).

12.3 Bioaccumulative potential

An estimated BCF of 2 was calculated in fish for o-anisidine(SRC), using a log Kow of 1.18(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

The Koc of o-anisidine is estimated as 46(SRC), using a log Kow of 1.18(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that o-anisidine is expected to have very high mobility in soil. The pKa of o-anisidine is 4.53(4), indicating that this compound will partially exist in the cation form in the environment and cations generally adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(5). Anilines are expected to bind strongly to humus or organic matter in soils due to the high reactivity of the aromatic amino group(6,7).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN2431 (For reference only, please check.) IMDG: UN2431 (For reference only, please check.) IATA: UN2431 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: ANISIDINES (For reference only, please check.) IMDG: ANISIDINES (For reference only, please check.) IATA: ANISIDINES (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.) IMDG: 6.1 (For reference only, please check.) IATA: 6.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
o-anisidine	o-anisidine	90-04-0	201-963-1
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date

July 15, 2019

Revision Date

August 08, 2025

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

Depending on the degree of exposure, periodic medical examination is suggested. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. See ICSC 0971.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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