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SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.1
Creation Date: July 15, 2019
Revision Date: May 08, 2024

SECTION 1: Identification

1.1 GHS Product identifier

Product name 3,4-Dichloroaniline

1.2 Other means of identification

Product number CCEM500338
Other names -

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
Serious eye damage, Category 1
Skin sensitization, Category 1
Acute toxicity - Category 3, Inhalation
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

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
H318 Causes serious eye damage
H317 May cause an allergic skin reaction
H331 Toxic if inhaled
H410 Very toxic to aquatic life with long lasting effects

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.
P272 Contaminated work clothing should not be allowed out of the workplace.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.

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. P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P317 Get medical help. P333+P317 If skin irritation or rash occurs: Get medical help. P362+P364 Take off contaminated clothing and wash it before reuse. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P391 Collect spillage.
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
3,4-Dichloroaniline	3,4-dichloroaniline	95-76-1	202-448-4	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Give one or two glasses of water to drink. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound may include irritation of the skin and severe irritation of the eyes. It reduces the oxygen carrying capacity of the blood and causes shortness of breath by formation of methemoglobin It can cause an allergic skin reaction, rash, chloracne, cyanosis, weakness, tearing, and blurring of vision. Higher exposures can cause abnormal liver an kidney function. Skin permeation can lead to systemic toxicity. ACUTE/CHRONIC HAZARDS: This compound can cause skin irritation and severe eye irritation. When heated to decomposition it emits toxic fumes of chlorine and nitrogen oxides. Thermal decomposition may produce carbon monoxide, carbon dioxide and hydrogen chloride gas. It is highly toxic when absorbed through the skin, swallowed or when vapors from the heated material are inhaled. (NTP, 1992)

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

Basic treatment: Establish patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for shock and treat if necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 mL/kg up to 200 mL of water for dilution if the patent can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Aniline and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use water spray, dry chemical, foam, or carbon dioxide. water or foam may cause frothing. use water spray to keep fire-exposed containers cool. approach fire from upwind to avoid hazardous vapors and toxic decomposition products. dichloroanilines

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, powder, alcohol-resistant foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: chemical protection suit including self-contained breathing apparatus. Remove all ignition sources. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Personal protection: chemical protection suit including self-contained breathing apparatus. Remove all ignition sources. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

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

Separated from strong oxidants and food and feedstuffs. Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.STORE IN A COOL, DRY, WELL-VENTILATED LOCATION. SEPARATE FROM ACIDS, OXIDIZING MATERIALS, & COMBUSTIBLES. DICHLOROANILINES

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

MAK skin absorption (H); MAK sensitization of skin (SH)

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 safety goggles or face shield.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Solid. Crystalline.
Colour	LIGHT BROWN.
Odour	no data available
Melting point/freezing point	71 - 72 °C. Atm. press.:No further data. Remarks:No further data.
Boiling point or initial boiling point and boiling range	272 °C. Atm. press.:1 013.25 hPa.
Flammability	Combustible. Gives off irritating or toxic fumes (or gases) in a fire. Heating will cause rise in pressure with risk of bursting.
Lower and upper explosion limit/flammability limit	no data available
Flash point	135 °C. Atm. press.:No data on atmospheric pressure.
Auto-ignition temperature	> 600 °C. Atm. press.:1 013 hPa.

Decomposition temperature	no data available
pH	7.1. Remarks:No further data.
Kinematic viscosity	6.6173 Pa.s @ 344.65 K
Solubility	less than 1 mg/mL at 70.7° F (NTP, 1992)
Partition coefficient n-octanol/water	log Pow = 2.7.
Vapour pressure	0.002 hPa. Temperature:20 °C.;0.003 hPa. Temperature:25 °C.
Density and/or relative density	1.57 g/cm³. Temperature:20 °C.
Relative vapour density	5.59 (NTP, 1992) (Relative to Air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes at 340°C. Decomposes on burning. This produces toxic fumes including nitrogen oxides and hydrogen chloride (see ICSC 0163).

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

COMBUSTIBLE SOLID /DICHLOROANILINES/3,4-DICHLOROANILINE is incompatible with oxidizing agents, acids, acid chlorides and acid anhydrides. It can decompose at low pH. Hydrochloric acid accelerates decomposition. Reacts at temperatures above 356° F in the presence of ferric chloride (NTP, 1992).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

When heated to decomp ... they evolve highly toxic /hydrogen/ chloride fumes. some org chlorides decomp to yield phosgene. chlorides

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 - rat (male) - 570 mg/kg bw.
- Inhalation: LC50 - rat - > 0.631 mg/L air.
- Dermal: LD50 - rat - > 1 000 mg/kg bw.

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

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes. The substance may cause effects on the blood. This may result in the formation of methaemoglobin. Exposure could cause death. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

Repeated or prolonged contact may cause skin sensitization. The substance may have effects on the blood system. This may result in the formation of methaemoglobin.

Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - Oncorhynchus mykiss (previous name: Salmo gairdneri) - 1.94 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: LC50 - Daphnia magna - 0.23 mg/L - 48 h.
- Toxicity to algae: NOEC - Scenedesmus pannonicus - 1 mg/L - 96 h.
- Toxicity to microorganisms: EC50 - activated sludge - 44 mg/L - 3 h. Remarks:Respiration rate.

12.2 Persistence and degradability

3,4-dichloroaniline (dca), a biodegradation intermediate of several herbicides, is mineralized in soil only very slowly. in enrichment cultures, dca failed to serve as the sole substrate, but analog enrichment yielded a pseudomonas putida strain that, in presence of unchlorinated analog substrates, mineralized dca with release of (14)co2 and cl-. mass spectrometric identification of the key biodegradation intermediates (3,4-dichloromuconate, 3-chlorobutenolide and 3-chlorolevulinic acid) revealed that dca biodegradation occurred through 4,5-dichlorocatechol, 3,4-dichloromuconate, 3-chlorobutenolide, 3-chloromaleylacetate and 3-chloro-4-ketadipate to succinate plus acetate. through the above pathway, dca was converted ultimately to inorganic end products. the slow mineralization of dca in soil is not entirely explainable by the inherent recalcitrance of this compound but is explainable by the competing polymerization & binding reactions that decrease its availability.

12.3 Bioaccumulative potential

Studies on the environmental hazards & fate of herbicides are reviewed. Herbicides do not accumulate by way of the trophic chains, except for diuron & 3,4-dichloroaniline, which accumulate in fish.

12.4 Mobility in soil

Up to 90% of 3,4-dichloraniline ... derived from biodegradation of phenylamide herbicides is adsorbed so strongly by soil org matter that it is not extractable by solvents. bound dca is susceptible to acid & alkaline hydrolysis.

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: UN3442 (For reference only, please check.)	IMDG: UN3442 (For reference only, please check.)	IATA: UN3442 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: DICHLOROANILINES, SOLID (For reference only, please check.)	IMDG: DICHLOROANILINES, SOLID (For reference only, please check.)	IATA: DICHLOROANILINES, SOLID (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: II (For reference only, please check.)	IMDG: II (For reference only, please check.)	IATA: II (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: Yes	IMDG: Yes	IATA: Yes

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
3,4-dichloroaniline	3,4-dichloroaniline	95-76-1	202-448-4
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	May 08, 2024

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.

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

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