

SAFETY DATA SHEET

1. Identification

Product identifier: Aniline

Other means of identification

Product No.: 3584, 9110

Recommended use and restriction on use

Recommended use: For Laboratory, Research or Manufacturing Use.

Restrictions on use: Not determined.

Details of the supplier of the safety data sheet

	Avantor Performance Materials, LLC 100 Matsonford Rd, Suite 200 Radnor, PA 19087
Telephone:	Customer Service: 855-282-6867
Fax:	
Contact Person:	Product Information Compliance
E-mail:	info@avantormaterials.com

Emergency telephone number:

CHEMTREC: 1-800-424-9300 within US and Canada (24 hrs/day, 7 days/week)

2. Hazard identification

Hazard Classification

Physical Hazards

Flammable liquids	Category 4
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Health Hazards

Acute toxicity (Oral)	Category 3
Acute toxicity (Dermal)	Category 3
Acute toxicity (Inhalation - dust and mist)	Category 3
Serious Eye Damage/Eye Irritation	Category 2A
Skin sensitizer	Category 1
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 2
Specific Target Organ Toxicity - Repeated Exposure	Category 1 ¹ .

Target Organs

1. Blood, hematopoietic system

Environmental Hazards

Acute hazards to the aquatic environment	Category 1
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Chronic hazards to the aquatic environment Category 1

Unknown toxicity - Environment

Acute hazards to the aquatic environment 0 %
Chronic hazards to the aquatic environment 100 %

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Combustible liquid.
Toxic if swallowed, in contact with skin or if inhaled.
Causes serious eye irritation.
May cause an allergic skin reaction.
Suspected of causing genetic defects.
Suspected of causing cancer.
Causes damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wash thoroughly after handling. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF exposed or concerned: Get medical advice/attention. In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction. IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician. IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell. If skin irritation or rash occurs: Get medical advice/attention. Take off immediately all contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Collect spillage.

Storage: Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

Disposal: 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.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	Content in percent (%)*
Aniline		62-53-3	99 - 100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Rinse mouth. Call a physician or poison control center immediately. Never give liquid to an unconscious person. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Inhalation: Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Skin Contact: Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. Get medical attention immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Most important symptoms/effects, acute and delayed

Symptoms: May irritate eyes. May cause allergic skin reaction. 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.

Hazards: None known.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: Combustible liquid and vapor.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical: Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Heat may cause the containers to explode.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. See Section 8 of the SDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: In case of leakage, eliminate all ignition sources. Dike far ahead of larger spills for later disposal. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

Notification Procedures: Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Avoid release to the environment. Do not contaminate water sources or sewer.

7. Handling and storage

Precautions for safe handling: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Keep away from food, drink and animal feeding stuffs. Store in tightly closed original container in a dry, cool and well-ventilated place.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
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Aniline	TWA	2 ppm 7,6 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Aniline	TWA	2 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Aniline	TWA	2 ppm	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
Aniline	TWA	2 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Aniline	8 HR ACL	2 ppm	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	4 ppm	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Aniline	TWA	2 ppm 7,6 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Aniline	TWA	2 ppm	US. ACGIH Threshold Limit Values (2011)

Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
Aniline (p-Aminophenol, with hydrolysis: Sampling time: End of shift.)	50 mg/l (Urine)	ACGIH BEI (03 2013)

Appropriate Engineering Controls No data available.

Individual protection measures, such as personal protective equipment

- General information:** 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. An eye wash and safety shower must be available in the immediate work area.
- Eye/face protection:** Wear safety glasses with side shields (or goggles). Wear a full-face respirator, if needed.
- Skin Protection**
- Hand Protection:** Chemical resistant gloves
- Other:** Wear suitable protective clothing and gloves.
- Respiratory Protection:** In case of inadequate ventilation use suitable respirator.
- Hygiene measures:** Provide eyewash station and safety shower. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke when using the product. Wash contaminated clothing before reuse.

9. Physical and chemical properties

Appearance

- Physical state:** Liquid
- Form:** Viscous liquid
- Color:** Colorless
- Odor:** Mild, Amines.
- Odor threshold:** No data available.

pH:	8,1 (18,6 g/l, 20 °C)
Melting point/freezing point:	-6,2 - -6 °C
Initial boiling point and boiling range:	183,5 - 184,4 °C
Flash Point:	70 °C (Closed Cup)
Evaporation rate:	< 1 (butyl acetate=1)
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	1,3 %(V)
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	0,4 hPa (20 °C) 0,65 - 0,8 hPa (25 °C)
Vapor density:	3,3 (Air=1)
Density:	1,02 g/ml (20 °C)
Relative density:	1,02 (20 °C)
Solubility(ies)	
Solubility in water:	36 g/l (25 °C)
Solubility (other):	acetone: Miscible ethanol: Miscible ethyl ether: Miscible
Partition coefficient (n-octanol/water):	0,90 - 0,92
Auto-ignition temperature:	615 °C
Decomposition temperature:	No data available.
Viscosity:	No data available.
Other information	
Molecular weight:	93,13 g/mol (C6H5NH2)

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, sparks, flames. Contact with incompatible materials.
Incompatible Materials:	Strong oxidizing agents. Strong acids. Alkalies. Iron. Zinc. Aluminum.
Hazardous Decomposition Products:	Carbon monoxide Carbon dioxide Nitrogen Oxides

11. Toxicological information

Information on likely routes of exposure

Inhalation:	Toxic by inhalation. May cause irritation to the respiratory system.
Skin Contact:	Toxic in contact with skin. May cause an allergic skin reaction. Prolonged skin contact may cause temporary irritation.
Eye contact:	Causes serious eye irritation.

Ingestion: Toxic if swallowed.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: LD 50 (Rat): 442 - 930 mg/kg

Dermal

Product: LD 50 (Rabbit): 1.540 mg/kg

Inhalation

Product: LC 50 (Rat): 478 - 839 ppm

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: Prolonged skin contact may cause temporary irritation.

Serious Eye Damage/Eye Irritation

Product: Causes serious eye irritation.

Respiratory or Skin Sensitization

Product: May cause allergic skin reaction.

Carcinogenicity

Product: Suspected of causing cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

ACGIH Carcinogen List:

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: Suspected of causing genetic defects.

In vivo

Product: Suspected of causing genetic defects.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: Blood, hematopoietic system - Causes damage to organs through prolonged or repeated exposure.

Aspiration Hazard

Product: Not classified

Other effects: 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.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Aniline
 LC 50 (Bluegill Sunfish, 96 h): 40,7 - 59,1 mg/l
 LC 50 (Fathead Minnow, 96 h): 59,42 - 134 mg/l
 LC 50 (Rainbow Trout, 96 h): 10,6 - 41 mg/l
 LC 50 (Danio rerio, 96 h): 32 - 57,6 mg/l
 LOAEL (Fathead Minnow, 96 h): 79,3 mg/l

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Aniline
 EC 50 (Daphnia magna, 48 h): 0,13 - 0,68 mg/l
 LC 50 (Daphnia magna, 48 h): 0,35 mg/l
 NOAEL (Daphnia magna, 48 h): 0,34 mg/l
 EC 50 (Daphnia pulex, 48 h): 0,1 mg/l
 NOAEL (Daphnia pulex, 48 h): 0,07 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Aniline
 NOAEL (Pimephales promelas, 32 d): 0,39 mg/l
 LC 50 (Micropterus salmoides, 8 d): 4,4 - 5,2 mg/l
 LC 50 (Danio rerio, 28 d): 39 mg/l
 NOAEL (Danio rerio, 28 d): 1,8 - 5,6 mg/l

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Aniline
 EC 50 (Daphnia magna, 14 d): 0,66 mg/l
 EC 50 (Daphnia magna, 21 d): 0,044 mg/l
 NOAEL (Daphnia magna, 21 d): 0,004 - 0,016 mg/l

Toxicity to Aquatic Plants

Product: No data available.

Specified substance(s):

Aniline
 LC 50 (Green algae (Chlorella vulgaris)): > 183,9 mg/l

Persistence and Degradability

Biodegradation
Product: The product is expected to be biodegradable.

BOD/COD Ratio
Product: No data available.

Bioaccumulative potential
Bioconcentration Factor (BCF)
Product: No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)
Product: Log Kow: 0,90 - 0,92

Mobility in soil: The product is water soluble and may spread in water systems.

Other adverse effects: Very toxic to aquatic life with long lasting effects.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws. 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. Do not allow to enter drains, sewers or watercourses.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

TDG

UN Number: UN 1547
UN Proper Shipping Name: ANILINE
Transport Hazard Class(es)
Class: 6.1
Label(s): 6.1
Packing Group: II
Marine Pollutant: No
Special precautions for user: Not determined.

IMDG

UN Number: UN 1547
UN Proper Shipping Name: ANILINE
Transport Hazard Class(es)
Class: 6.1
Label(s): 6.1
EmS No.: F-A, S-A
Packing Group: II
Marine Pollutant: Yes
Special precautions for user: Not determined.

IATA

UN Number: UN 1547
UN Proper Shipping Name: Aniline
Transport Hazard Class(es)
Class: 6.1
Label(s): 6.1
Packing Group: II
Marine Pollutant: Yes

Special precautions for user: Not determined.
Cargo aircraft only: Allowed.

Transport in bulk according to Annex II of MARPOL and the IBC Code: Not applicable

15. Regulatory information

Canada Federal Regulations

List of Toxic Substances (CEPA, Schedule 1)

Not Regulated

Export Control List (CEPA 1999, Schedule 3)

Not Regulated

National Pollutant Release Inventory (NPRI)

Canada. National Pollutant Release Inventory (NPRI) Substances, Part 5, VOCs with Additional Reporting Requirements

NPRI PT5 Not Regulated

Canada. National Pollutant Release Inventory (NPRI) (Schedule 1, Parts 1-4)

NPRI Aniline

Greenhouse Gases

Not Regulated

Controlled Drugs and Substances Act

CA CDSI Not Regulated

CA CDSII Not Regulated

CA CDSIII Not Regulated

CA CDSIV Not Regulated

CA CDSV Not Regulated

CA CDSVII Not Regulated

CA CDSVIII Not Regulated

Precursor Control Regulations

Not Regulated

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Mexico INSQ:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory

16. Other information

Revision Date: 22.01.2020

Version #: 1.2

Source of information: Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, information from the Toxicology Data Network (TOXNET), European Chemical Agency (ECHA) substance dossiers, IARC Monographs, US National Toxicology Program data, the Agency for Toxic Substances and Disease Registry, other manufacturer's SDSs and other sources, as appropriate.

Further Information: No data available.

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