SAFETY DATA SHEET

1. Identification

Product identifier **Aniline**

Other means of identification

Catalog number 1036110

CAS number 62-53-3

Synonyms Aminobenzene

Recommended use Specified quality tests and assay use only.

Recommended restrictions Not for use as a drug. Not for administration to humans or animals.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name U. S. Pharmacopeia

Address 12601 Twinbrook Parkway
Rockville
MD
20852-1790
United States

Telephone RS Technical Services 301-816-8129

Website www.usp.org

E-mail RSTECH@usp.org

Emergency phone number CHEMTREC within US & Canada 1-800-424-9300
CHEMTREC outside US & Canada +1 703-527-3887

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 4
Health hazards	Acute toxicity, oral	Category 3
	Acute toxicity, dermal	Category 3
	Acute toxicity, inhalation	Category 3
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
	Germ cell mutagenicity	Category 2
	Carcinogenicity	Category 2
	Specific target organ toxicity, repeated exposure	Category 1 (blood)

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Combustible liquid. Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled. Causes serious eye damage. May cause an allergic skin reaction. Suspected of causing genetic defects. Suspected of causing cancer. Causes damage to organs (blood) through prolonged or repeated exposure.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Keep away from flames and hot surfaces-No smoking. Do not breathe mist or vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

Response	In case of fire: Use appropriate media for extinction. If swallowed: Immediately call a poison center/doctor. Rinse mouth. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off immediately all contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If exposed or concerned: Get medical advice/attention.
Storage	Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Substance

Chemical name	Common name and synonyms	CAS number	%
Aniline	Aminobenzene	62-53-3	100

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	Central nervous system effects. Methemoglobinemia.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Do not induce vomiting. Perform gastric lavage. Administer activated charcoal as a slurry. For methemoglobinemia, administer methylene blue and/or ascorbic acid.
General information	Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

5. Fire-fighting measures

Suitable extinguishing media	Water. Foam. Dry chemical powder. Carbon dioxide (CO2). Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	No unusual fire or explosion hazards noted.
Special protective equipment and precautions for firefighters	Wear suitable protective equipment.
Fire fighting equipment/instructions	As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Combustible liquid.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Wear appropriate personal protective equipment. Avoid inhalation of vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Absorb spillage with suitable absorbent material. For waste disposal, see section 13 of the SDS. Remove sources of ignition. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Clean surface thoroughly to remove residual contamination.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling
As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly. Select and use containment devices and personal protective equipment based on a risk assessment of material potency and exposure potential.

Conditions for safe storage, including any incompatibilities
Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value
Aniline (CAS 62-53-3)	PEL	19 mg/m3 5 ppm

US. ACGIH Threshold Limit Values

Material	Type	Value
Aniline (CAS 62-53-3)	TWA	2 ppm

Biological limit values

ACGIH Biological Exposure Indices

Material	Value	Determinant	Specimen	Sampling Time
Aniline (CAS 62-53-3)	50 mg/l	p-Aminophenol , with hydrolysis	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - Tennessee OELs: Skin designation

Aniline (CAS 62-53-3) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Aniline (CAS 62-53-3) Can be absorbed through the skin.

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

ANILINE (CAS 62-53-3) Can be absorbed through the skin.

US. Minnesota Hazardous Substances List (Minn. Rules 5206.0400).

Aniline (CAS 62-53-3) Skin designation applies.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Aniline (CAS 62-53-3) Can be absorbed through the skin.

Appropriate engineering controls
For laboratory operations, use good technique and limit open handling. Control exposures to below the occupational exposure level (if available). Select and use containment devices and personal protective equipment based on a risk assessment of exposure potential. Cover all containers for solutions and slurries while being transferred.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

Skin protection

Hand protection
Wear nitrile or other impervious gloves if skin contact is possible. When the material is dissolved or suspended in an organic solvent, wear gloves that provide protection against the solvent.

Other
Wear lab coat. Base the choice of skin protection on the job activity, potential for skin contact and solvents and reagents in use. Do not wear protective garments in common areas (e.g., cafeterias) or out-of-doors.

Respiratory protection
Respirators are generally not required for laboratory operations. Chose respiratory protection appropriate to the task and the level of existing engineering controls.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
Handling practices in this SDS are recommendations for laboratory use of reference standards. Procedures for any other uses or quantities should be determined after an appropriate assessment.

9. Physical and chemical properties

Appearance
Appearance descriptions are general information and not specific to any USP lot.

Physical state
Liquid.

Form	Liquid.
Color	Colorless. Pale yellow.
Odor	Characteristic.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	21.2 °F (-6 °C)
Initial boiling point and boiling range	363.38 °F (184.1 °C)
Flash point	158.0 °F (70.0 °C) Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	1.2 %
Explosive limit - upper (%)	11 %
Vapor pressure	0.07 kPa at 25 °C
Vapor density	3.3
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Soluble.
Solubility (other)	Acetone: Soluble. Ethanol: Soluble. Dimethyl sulfoxide: Soluble.
Partition coefficient (n-octanol/water)	0.9 = log Pow
Auto-ignition temperature	1139 °F (615 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Dynamic viscosity	4.35 mPa.s
Molecular formula	C6H7N
Molecular weight	93.13
Percent volatile	100 %
Specific gravity	1.02 at 20 °C
Surface tension	42.12 mN/m (77 °F (25 °C))
VOC	100 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. Flames. Sparks. Heat.
Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents.
Hazardous decomposition products	Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions. NOx.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Toxic if inhaled.
Skin contact	Toxic in contact with skin. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.
Ingestion	Toxic if swallowed.
Symptoms related to the physical, chemical, and toxicological characteristics	Headache. Dizziness. Drowsiness. Confusion. Incoordination. Weakness. Convulsions. Visual disturbances. Gastrointestinal disturbances. Painful or difficult urination. Difficulty breathing.

Information on toxicological effects

Acute toxicity Toxic if inhaled. Toxic in contact with skin. Toxic if swallowed.

Product	Species	Test Results
Aniline (CAS 62-53-3)		
Acute		
Dermal		
LD50	Rabbit	836 mg/kg
Inhalation		
LC50	Rat	3.3 mg/l, 4 hours

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation Causes serious eye damage.

Local effects

Eye irritation
Result: Severe.
Species: Rabbit
Skin irritation
Result: Negative.
Species: Rabbit

Respiratory or skin sensitization

Respiratory sensitization Knowledge about health hazard is incomplete.

Skin sensitization May cause an allergic skin reaction.

Local lymph node assay
Result: Positive.
Species: Mouse

Germ cell mutagenicity Suspected of causing genetic defects.

Mutagenicity

DNA repair test
Result: Negative.
DNA repair test
Result: Positive.
Dominant lethal test
Result: Equivocal.
Species: Rat
Micronucleus test
Result: Positive.
Mutagenicity: Sister chromatid exchange assay in mice
Result: Positive.
Mutagenicity: Sperm head anomaly study
Result: Negative.

Carcinogenicity Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Aniline (CAS 62-53-3) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Knowledge about health hazard is incomplete.

Reproductivity

100 mg/kg/day Reproductivity / developmental
Result: No evidence of teratogenicity observed.
Species: Rat

Specific target organ toxicity - single exposure Knowledge about health hazard is incomplete.

Specific target organ toxicity - repeated exposure Causes damage to organs (blood) through prolonged or repeated exposure.

Aspiration hazard Knowledge about health hazard is incomplete.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
Aniline (CAS 62-53-3)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	0.17 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	36.2 mg/l, 96 hours
			10.6 mg/l, 96 hours

Persistence and degradability Readily biodegradable.

Bioaccumulative potential

Octanol/water partition coefficient log Kow
0.9, = log Pow

Mobility in soil No data available.

Other adverse effects The product contains volatile organic compounds which have a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste U List: Reference

Aniline (CAS 62-53-3) U012

Waste from residues / unused products Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

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

14. Transport information

DOT

UN number UN1547
UN proper shipping name Aniline, MARINE POLLUTANT
Transport hazard class(es)
Class 6.1
Subsidiary risk -
Packing group II
Environmental hazards
Marine pollutant Yes
Packaging exceptions 153
Packaging non bulk 202
Packaging bulk 243

IATA

UN number UN1547
UN proper shipping name Aniline
Transport hazard class(es)
Class 6.1
Subsidiary risk -
Packing group II
Other information
Passenger and cargo aircraft Allowed with restrictions.
Cargo aircraft only Allowed with restrictions.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

DOT; IATA

Marine pollutant

General information It is the shipper's responsibility to determine the correct transport classification at the time of shipment.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Aniline (CAS 62-53-3) Listed.

SARA 304 Emergency release notification

Aniline (CAS 62-53-3) 5000 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Aniline	62-53-3	5000	1000		

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aniline	62-53-3	100

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Aniline (CAS 62-53-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130) Hazardous substance

Safe Drinking Water Act (SDWA) Contaminate candidate list

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Aniline (CAS 62-53-3) Listed: January 1, 1990

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Aniline (CAS 62-53-3)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 10-27-2015

Revision date 10-31-2017

Version # 02

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