GPS Safety Summary
Aniline

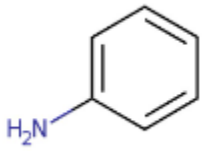
Reference number: AIL-GPS-131 Issue date: 18/06/2025 Version: 1.0 **CL-4: PUBLIC**

1. General Statements

Aniline Colorless to slightly brown oily liquid which is Fishy, aromatic smell. It is slightly soluble in water; soluble in ethanol, ether, and most organic solventsIts simple structure, featuring a benzene ring bonded to an amino group, makes it a key building block in the synthesis of dyes, pharmaceuticals, rubber chemicals, and agrochemicals. Despite its usefulness, aniline is toxic and potentially carcinogenic, requiring careful handling and environmental control. Its chemical reactivity and role in organic synthesis underscore its importance in both academic and industrial chemistry. Proper management of its risks ensures safe and effective use in various applications.

2. Chemical identification.

Name :Aniline
CAS number(s) :62-53-3
EC number :200-539-3
Molecular formula :C6H7N
Structure :



3. Uses and Benefits

In the manufacture of dyestuffs and dyestuff intermediates, plastics, resins, photographic developers, pharmaceuticals, antioxidants, varnishes, perfumes, shoe blacks (rubber accelerator and in vulcanizing rubber), isocyanates, explosives, phenolics, herbicides and pesticides. A solvent in organic synthesis.

4. Physical / chemical properties

Property	Value
Physical state :	Liquid
Colour :	Colourless to yellow On exposure to air: turns brown On exposure to light: turns brown
Odour :	Unpleasant odour Aromatic odour Amine-like odour Stuffy odour Smell of fish
pH :	8.8 at 20 °C
Melting point :	-6.2 °C
Boiling point :	184.4°C

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Flash point :	> 70 °C (Closed cup)
Density :	1022 kg/m3
Solubility in Water:	Moderately soluble in water. 3.5 g/100ml

5. Health Effects

Effect Assessment	Result
Acute toxicity (Oral / inhalation / dermal)	Toxic if swallowed, in contact with skin or if inhaled
Irritation / corrosion Skin / eye/ respiratory tract	May cause an allergic skin reaction,Causes serious eye damage
Respiratory or skin sensitisation	NA
Toxicity after repeated exposure Oral / inhalation / dermal	It causes damage to organs through prolonged or repeated exposure
Genotoxicity / Mutagenicity	Suspected of causing genetic defects.
Carcinogenicity	Suspected of causing cancer.
Toxicity for reproduction	Suspected of damaging fertility or the unborn child

6. Environmental Effects

Effect Assessment	Result
Aquatic toxicity	Yes
Fate and behavior	**Result**
Persistence and degradability	Biodegradable in the soil. Inhibition of nitrification. Readily biodegradable in water.
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

7. Exposure

Human health

Aniline is a highly hazardous chemical that poses significant health and environmental risks. It is toxic if swallowed, inhaled, or absorbed through the skin, and can cause serious damage to organs after prolonged or repeated exposure. It also causes severe eye damage and may trigger allergic skin reactions. Moreover, aniline is suspected to cause genetic defects and cancer. Environmentally, it is very toxic to aquatic life, making careful handling, proper protective measures, and responsible disposal essential to prevent harm to humans and the environment. Safety precautions and strict regulations must be followed when working with this substance.

Environment:

Care should be taken to avoid releases of these products to sewage, drainage systems and water bodies. Spillage shall be quickly collected in the event of an accidental release. More information about release measures and accidental release measures are available in the extended safety data sheet.

8. Risk Management Recommendations

Human health measures.

Organizational	A basic standard of occupational hygiene is recommended. Ensure operatives are well informed of the hazards and trained to minimise exposures. Ensure regular inspection and maintenance of equipment and machines. Handle and store according to the indications of the Safety Data Sheet.	
Protection	Eye protection:	Safety glasses
	Skin and body protection:	Wear suitable protective clothing
	Respiratory protection:	[In case of inadequate ventilation] wear respiratory protection.
Engineering controls	Ensure good ventilation of the work station.	
Environment protective measures		
Avoid release to the environment		

9. First-aid measures

First-aid measures after inhalation : Remove the person to fresh air and keep them comfortable for breathing. Take medical advice.

First-aid measures after skin contact : Wash skin with plenty of water. Remove/Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

First-aid measures after ingestion : Rinse mouth. Call a physician immediately.

Extinguishing media
Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media : Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Fight fire from safe distance and protected location. Do not enter a fire area without proper protective equipment, including respiratory protection.

11. Accidental release measures

Protective equipment : Gloves (EN 374). Face shield (EN 166). Protective clothing (EN 14605 or EN 13034). Large spills/in enclosed spaces: self-contained breathing apparatus (EN 136 + EN 137). Large spills/in enclosed spaces: gas-tight suit (EN 943).

Environmental precautions : Avoid release to the environment.

For containment : Collect spillage. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leaks without risks if possible.

12. Disposal consideration

Regional legislation (waste) : Disposal must be done according to official regulations.

Waste treatment methods : Dispose of contents/container in accordance with licensed collector’s sorting instructions.

Sewage disposal recommendations : Disposal must be done according to official regulations.

13. Handling and storage

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.Wear personal protective equipment. Obtain special instructions before use. Do not handle it until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed.out of the workplace. Do not eat, drink or smoke when using this product. Always wash handsafter handling the product.

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14. Classification and Labeling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Danger

Hazard statements (GHS US) :
H227 - Combustible liquid
H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H341 - Suspected of causing genetic defects.
H351 - Suspected of causing cancer.
H361 - Suspected of damaging fertility or the unborn child
H372 - Causes damage to organs through prolonged or repeated exposure
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS US) :
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 - Do not breathe dust, fume, gas, mist, spray, vapors.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, eye and face protection.
P301+P310 - If swallowed: Immediately call a POISON CENTER, a doctor.
P302+P352 - If on skin: Wash with plenty of water.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P310 - Immediately call a POISON CENTER, a doctor.
P311 - Call a POISON CENTER, a doctor.
P312 - Call a POISON CENTER, a doctor if you feel unwell.
P314 - Get medical advice or attention if you feel unwell.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P330 - Rinse mouth.
P333+P313 - If skin irritation or rash occurs: Get medical advice or attention.
P361+P364 - Take off immediately all contaminated clothing and wash it before reuse.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use appropriate media to extinguish.
P391 - Collect spillage.

15. Conclusion

Aniline is a colorless to slightly brown, oily liquid with a distinct fishy, aromatic odor. It plays a vital role in industrial chemistry, serving as a key raw material in the production of dyes, pharmaceuticals, rubber chemicals, herbicides, and more. Its simple molecular structure, comprising a benzene ring with an amino group, makes it highly versatile in organic synthesis.Despite its wide range of applications, aniline poses serious hazards to human health and the environment. It is toxic via oral, dermal, and inhalation exposure, and is associated with severe eye damage, allergic skin reactions, organ toxicity through prolonged exposure, and is suspected of causing cancer and genetic defects. Environmentally, it is highly toxic to aquatic life and should never be released into water systems.while aniline is a critical industrial chemical with numerous benefits, its

hazardous properties demand careful, responsible handling to ensure the safety of workers, communities, and the environment.

16. Contact Information within company

Manufacturer

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This GPS safety summary is intended to give general information about the health, safety and environment and not intended to provide in-depth details. To obtain the most accurate and current information, consult the appropriate Safety Data Sheet (SDS) prior to use of the material named herein.